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## Social Adaptability Skills in Talented Team Athletes: From Identification to Development

Owiti Samuel

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FACULTÉ DES SCIENCES SOCIALES ET POLITIQUES

**SOCIAL ADAPTABILITY SKILLS IN TALENTED TEAM  
ATHLETES:  
FROM IDENTIFICATION TO DEVELOPMENT**

INSTITUT DES SCIENCES DU SPORT

THÈSE DE DOCTORAT

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Faculté des sciences sociales et politiques  
de l'Université de Lausanne

pour l'obtention du grade de

Docteur ès sciences en sciences du mouvement et du sport

par

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2024



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« **Social adaptability skills in talented team athletes: from identification to  
development** »

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## Abstract

During their career, most players working in professional team sports move from club to club. These transitions are not always completely successful and could highly impact the route of the players' development. However, few studies have focused on the process of adapting to a new club and the factors that lead to success or failure. To address this gap, the current thesis sought to identify the most difficult aspects of these transitions as experienced by team sport players and the psychological skills that contribute to successful outcomes. It involved exploring and identifying a range of Social Adaptability Skills (SAS) within team sports setting. Consequently, a psychometric instrument was developed and validated for measuring SAS required during club-to-club transfers. The SAS-Questionnaire yielded a 17-item, four factor structure with a good internal reliability ( $\alpha = 0.876$ ). The Confirmatory Factor Analysis (CFA) revealed acceptable model fit indices:  $\chi^2$  (df) = 235.860 (113),  $p < 0.000$ , CFI = 0.889, TLI = 0.901, RMSEA = 0.057, and SRMR = 0.07). Lastly, an educational session intervention to assist the athletes develop the propensities to enact the SAS necessary during club-to-club transfers was applied. Overall, this work has contributed to the research on talent development in that, it has explored an area that has had little, if any attention and, furthermore, it offers a psychometric measurement by which athletes can investigate and optimise the enactment and deployment of SAS during club-to-club transfers.

**Keywords:** *adaptability, club transition, talent development, psychosocial attributes, enactive approach.*

## Resumé

Au cours de leur carrière professionnelle, la plupart des athlètes de sports collectifs vont d'un club à un autre. Ces transitions ne sont pas toujours bien négociées et cela peut considérablement impacter le parcours de développement des joueurs. Cependant, peu d'études se sont intéressées au processus d'adaptation dans un nouveau club, ainsi qu'aux facteurs qui facilitent ou entravent ce processus. La présente thèse a essayé de combler ce vide en identifiant les aspects les plus rudes de cette transition tel que vécus par les athlètes de sports collectifs et les aptitudes psychologiques qui contribuent à une bonne adaptation. Elle a exploré et identifié un ensemble de caractéristiques psychosociales d'adaptation au sein des équipes de sports collectifs dénommé « Social Adaptability Skills (SAS) ». Un outil psychométrique mesurant les SAS durant la transition club-club a donc été développé et validé. Le « SAS Questionnaire » a 17 items structurés en quatre dimensions et présente une bonne consistance interne ( $\alpha = 0.876$ ). L'Analyse Factorielle Confirmatoire confirme que sa structure factorielle est bien ajustée :  $\chi^2$  (df) = 235.860 (113),  $p < 0.000$ , CFI = 0.889, TLI = 0.901, RMSEA = 0.057, et SRMR = 0.07). Enfin, un dispositif d'intervention éducative pour aider les athlètes à développer les SAS nécessaires pendant la transition club-club a été testé. Dans l'ensemble, ce travail a contribué à la recherche sur le développement de talent, un domaine qui n'a reçu que peu d'attention jusqu'à présent. Plus encore, il offre un outil psychométrique avec lequel les athlètes en sports collectifs peuvent évaluer et optimiser le déploiement des SAS lors des transferts club-club.

**Mots-clés :** *adaptabilité, transition club-club, développement de talent, attributs psychosociaux, approche éactive.*

# TABLE OF CONTENTS

	Page
<b>LIST OF TABLES .....</b>	<b>10</b>
<b>LIST OF FIGURES .....</b>	<b>12</b>
<b>LIST OF ABBREVIATIONS .....</b>	<b>13</b>
<b>GLOSSARY .....</b>	<b>15</b>
<b>GENERAL INTRODUCTION .....</b>	<b>20</b>
<b>PART 1 .....</b>	<b>22</b>
<b>SCIENTIFIC FRAMEWORK .....</b>	<b>22</b>
<b>CHAPTER 1: THEORETICAL FRAMEWORK .....</b>	<b>24</b>
What is Social Adaptability Skill-SAS? .....	24
How can we conceptualise SAS? .....	25
Social Adaptability Skills (SAS)- The missing link in the career development? .....	29
Talent identification and development systems .....	32
The Psychological Characteristics of Developing Excellence (PCDE's).....	33
Talent Development Environment Questionnaire (TDEQ) .....	36
<b>CHAPTER 2: ONTOLOGICAL POSITIONING OF THE THESIS.....</b>	<b>38</b>
The 4ES Positioning .....	38
Bronfenbrenner's bioecological theory .....	42
Integrated perspectives of personality: McAdams's identity multilayer model .....	45
Application of level 2 and 3 of the integrated personality in understanding SAS .....	49
Omission of Level 1 of personality construct from the current thesis.....	50
<b>CHAPTER 3: METHODOLOGICAL FRAMEWORK.....</b>	<b>52</b>
<b>Rigor-relevance and reflexivity concerns related to the current thesis .....</b>	<b>52</b>
Creating a complex methodological approach .....	53
Application of a narrative approach .....	56
Creating meaning through storytelling- (Narratives) .....	57
Understanding the 4ES approach in relation to the narratives .....	59
Bronfenbrenner bioecological system as it relates to sport psychology studies.....	60
Qualitative aspects: Data collection and analysis .....	66
Quantitative aspects : Data collection and analysis .....	76
<b>PART 2 .....</b>	<b>82</b>
<b>EMPIRICAL STUDIES .....</b>	<b>82</b>

<b>CHAPTER 1: THE PROBLEMATIC EXPERIENCES OF PLAYERS' CLUB TO CLUB TRANSFERS: DISCOVERING THE SOCIAL ADAPTABILITY SKILLS REQUIRED. ....</b>	<b>84</b>
<b>INTRODUCTION .....</b>	<b>85</b>
<b>METHOD .....</b>	<b>88</b>
Participants .....	88
Data Collection .....	90
Data Analysis .....	91
<b>RESULTS .....</b>	<b>93</b>
Problematic meaningful experiences with coaches .....	93
Problematic experience with teammates .....	96
Problematic experience due to family/friends .....	97
Problematic experience due to club .....	98
Adaptability Skills .....	99
<b>DISCUSSION .....</b>	<b>103</b>
Problematic experiences with coach and adaptations .....	105
Problematic experiences with teammates and adaptations .....	105
Problematic experiences with the club and adaptation .....	106
Problematic experience of adapting to being away from family/friends .....	107
<b>CHAPTER 2: INDIVIDUAL DIFFERENCES IN PROFESSIONAL SPORT NARRATION EXPERIENCE DURING BASKETBALL PLAYERS CLUB TO CLUB TRANSFER. ....</b>	<b>109</b>
<b>INTRODUCTION .....</b>	<b>110</b>
<b>METHOD .....</b>	<b>112</b>
Narrative Coding .....	112
Data analysis .....	115
<b>RESULTS .....</b>	<b>115</b>
<b>DISCUSSION .....</b>	<b>125</b>
<b>CHAPTER 3: THE INITIAL DEVELOPMENT AND VALIDATION OF THE SOCIAL ADAPTABILITY SKILLS QUESTIONNAIRE-SASQ.....</b>	<b>131</b>
<b>INTRODUCTION .....</b>	<b>132</b>
<b>STUDY 1: GENERATING ITEMS.....</b>	<b>134</b>
Item justification .....	134
Participants .....	136
Procedure .....	137
Data analysis and results .....	138
<b>STUDY 2: EXPLORATORY FACTOR ANALYSIS .....</b>	<b>138</b>
Sample size .....	138
Participants .....	138
Procedure .....	140

Data analysis .....	140
<b>RESULTS .....</b>	<b>141</b>
<b>RELIABILITY ANALYSIS .....</b>	<b>147</b>
Internal consistency .....	147
<b>STUDY 3: CONFIRMATORY FACTOR ANALYSIS .....</b>	<b>147</b>
<b>Method .....</b>	<b>148</b>
Participants .....	148
Procedure .....	148
Data analysis .....	150
<b>RESULTS .....</b>	<b>151</b>
<b>LATENT CLASS ANALYSIS.....</b>	<b>153</b>
Participants and Data analysis .....	153
<b>RESULTS .....</b>	<b>154</b>
<b>INTERNAL RELIABILITY .....</b>	<b>158</b>
<b>Test re-test reliability .....</b>	<b>159</b>
Participants .....	159
Procedure .....	159
<b>DISCRIMINANT VALIDITY ANALYSIS.....</b>	<b>161</b>
<b>RESULTS .....</b>	<b>162</b>
<b>CONVERGENT VALIDITY .....</b>	<b>162</b>
<b>RESULTS .....</b>	<b>163</b>
<b>STUDY 4: SASQ STANDARDIZATION .....</b>	<b>163</b>
<b>METHOD .....</b>	<b>163</b>
<b>RESULTS .....</b>	<b>165</b>
<b>DISCUSSION.....</b>	<b>167</b>
<b>CHAPTER 4: SOCIAL ADAPTABILITY SKILLS EDUCATIONAL SESSION WITHIN A TEAM SPORT CONTEXT .....</b>	<b>171</b>
<b>INTRODUCTION .....</b>	<b>172</b>
<b>METHOD .....</b>	<b>176</b>
Design .....	176
Inclusion and exclusion criteria .....	177
Participants .....	178
Procedure .....	178
<b>The ACT-Program Manual (see Appendix J for a detailed program).....</b>	<b>180</b>
<b>The PST-Program Manual.....</b>	<b>185</b>
<b>Imagery Shooting Skill Program Manual (active Control Group) .....</b>	<b>188</b>
Social Adaptability Skills Questionnaire (SASQ) (see Appendix C) .....	192
Athlete Mindfulness Skills Questionnaire (AMSQ) (see Appendix D).....	192

Athlete Coping Skills Inventory Questionnaire (ACSIQ-28) (see Appendix E).....	193
Data Analysis .....	194
<b>RESULTS .....</b>	<b>195</b>
<b>DISCUSSION.....</b>	<b>204</b>
<b>PART 3.....</b>	<b>209</b>
<b>GENERAL DISCUSSION .....</b>	<b>209</b>
<b>CHAPTER 1: EPISTEMIC AND METHODOLOGICAL CONTRIBUTIONS.....</b>	<b>211</b>
Conceiving the SSI as a “sense-making” process.....	211
Methodological consideration for SSI analysis .....	212
Analysis of athletes’ problematic experiences.....	213
Contribution of the 4ES approach in the current thesis.....	214
Methodological considerations of studies in part 2 .....	215
Contribution of narratives in discriminating between CCT-successful or unsuccessful .....	217
Narrative identity versus personality pathology in explaining CCT-unsuccessful.....	219
From identification to development in pursuit of excellence .....	221
<b>GENERAL CONCLUSION.....</b>	<b>224</b>
<b>Limitations and further developments .....</b>	<b>225</b>
<b>REFERENCES .....</b>	<b>230</b>
<b>APPENDIX A: ETHICAL APPROVAL .....</b>	<b>293</b>
<b>APPENDIX B: THE INTERVIEW GUIDE.....</b>	<b>295</b>
<b>APPENDIX C : THE SOCIAL ADAPTABILITY SKILL QUESTIONNAIRE (SASQ-17-Items)..</b>	<b>297</b>
<b>APPENDIX D: THE ATHLETE MINDFULNESS SKILLS QUESTIONNAIRE (AMSQ) .....</b>	<b>303</b>
<b>APPENDIX E: THE ATHLETIC COPING SKILL INVENTORY (ACSIQ-adapted version).....</b>	<b>305</b>
<b>APPENDIX F: CONTACT LETTERS TO CLUBS .....</b>	<b>307</b>
<b>APPENDIX G: PEER REVIEW HISTORY FOR ARTICLE- (Owiti &amp; Hauw, 2021) .....</b>	<b>309</b>
<b>APPENDIX H: PEER REVIEW HISTORY FOR ARTICLE (Owiti et al., 2021) .....</b>	<b>314</b>
<b>APPENDIX I: PEER REVIEW HISTORY FOR ARTICLE (Owiti &amp; Hauw, 2023). .....</b>	<b>324</b>
<b>APPENDIX J: SAS DETAILED EDUCATIONAL INTERVENTION PROGRAM .....</b>	<b>340</b>
<b>APPENDIX K: EXAMPLE OF AN INTERVIEW TRANSCRIPT .....</b>	<b>350</b>
<b>APPENDIX L: AN EXAMPLE OF INITIAL AND FOCUSED CODING .....</b>	<b>352</b>



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## LIST OF TABLES

**Table 1:** Descriptive characteristics of participants.

**Table 2:** Adaptability actions and skills deployed by athletes during club-to-club transfers.

**Table 3:** Narrative components coding (Adapted from McLean et al., 2019).

**Table 4:** Comparisons between players' general scores with McLean et al., (2019) sample scores (Mean/SD).

**Table 5:** Participant scores during each club-to-club transfer.

**Table 6:** Participant scores within the CCT-successful versus CCT-unsuccessful group.

**Table 7:** Exploratory factor loadings (rotated component matrix).

**Table 8:** Narrative components correlation coefficients.

**Table 9:** Demographic characteristics of participants ( $N=272$ ).

**Table 10:** SASQ item profile and corresponding descriptive statistics ( $N = 272$ ).

**Table 11:** Grouping of the 21 items into four factors with rotated factor loads.

**Table 12:** Reproduced correlation matrix.

**Table 13:** Demographic characteristics of participants.

**Table 14:** The descriptive statistics of the SASQ- 17 items ( $N = 303$ ).

**Table 15:** Classification of the SASQ items in three class model.

**Table 16:** Comparative Fit Statistics of the LCA models.

**Table 17:** Composite reliability of the four factors.

**Table 18:** Descriptive statistics, internal reliability and intraclass correlation ( $N = 174$ ).

**Table 19:** Heterotrait-Monotrait-HTMT results.

**Table 20:** Convergent validity results.

**Table 21:** SASQ scoring guide.

**Table 22:** SASQ distribution profile as per dimension (Mean, SD).

**Table 23:** Descriptive statistics of previous experiences of meditation-related practices.

**Table 24:** Intervention protocol diagram.

**Table 25:** Evaluation summary results of the three intervention programs.

**Table 26:** Group information and corresponding descriptive statistics.

**Table 27:** Results for equal variance test (Levene's test).

**Table 28:** Likelihood ratio test results for ACT group.

**Table 29:** Random slope results for ACT group.

**Table 30:** Pairwise difference between ACT, PST, and aCG group.

**Table 31:** Post-hoc comparison results between ACT, PST, and aCG group.

**Table 32:** Likelihood ratio test results for PST group.

**Table 33:** Random intercept results for PST group.

**Table 34:** Likelihood ratio test results for aCG group.

**Table 35:** Random intercept results for aCG group.

## LIST OF FIGURES

**Figure 1:** Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1981, 1994).

**Figure 2:** The multilayer personality model.

**Figure 3:** Visual representation of The Big Three Functional Model Framework (McLean et al., 2019).

**Figure 4:** Coding example separating meaningful experiences from situations/events.

**Figure 5:** An Overview of the negative meaningful experience of athletes during club transfers.

**Figure 6:** An overview of psychological attributes for enacting successful adaptations.

**Figure 7:** Confirmatory Factor Analysis standardized weight estimates.

**Figure 8:** Profile plot for the three-class model.

**Figure 9:** Group distribution/ranks of each of the four SASQ dimensions.

**Figure 10:** The rain cloud plot representing each intervention group scores.

## LIST OF ABBREVIATIONS

<b>ACSIQ</b>	Athlete Coping Skill Inventory Questionnaire.
<b>ACT</b>	Acceptance Commitment Theory.
<b>AIC</b>	Akaike Information Criterion.
<b>AIS</b>	Australian Institute of Sports.
<b>ANOVA</b>	Analysis of Variance.
<b>AMSQ</b>	Athlete Mindfulness Skills Questionnaire.
<b>ASPD</b>	Anti-Social Personality Disorder.
<b>AR</b>	Autobiographical Reasoning.
<b>AVE</b>	Average Factor Loading.
<b>BIC</b>	Bayesian Information Criterion.
<b>BPD</b>	Borderline Personality Disorder.
<b>CAIC</b>	Consistent Akaike Information Criterion.
<b>CCA</b>	Cross Culture Adaptation.
<b>CCT</b>	Club to Club Transfer.
<b>CI</b>	Confidence Interval.
<b>CFA</b>	Confirmatory Factor Analysis.
<b>CFI</b>	Comparative Fit Index.
<b>CMB</b>	Common Method Biases.
<b>Df</b>	Degrees of Freedom.
<b>DMGT</b>	Differentiated Model of Giftedness and Talent.
<b>EFA</b>	Exploratory Factor Analysis.
<b>EV</b>	Eigenvalue.
<b>FL</b>	Factor Loading
<b>GFI</b>	Goodness Fit Index.
<b>GM</b>	Growth-Mindset.
<b>HTMT</b>	Heterotrait Monotrait (Ratio of Correlation).
<b>ICC</b>	Intraclass Correlation Coefficient.
<b>KMO</b>	Kaiser-Meyer-Olkin test.
<b>K-S</b>	Kolmogorov-Smirnov test.
<b>LCA</b>	Latent Class Analysis.
<b>LL</b>	Log Likelihood.

<b>LLM</b>	Linear Mixed Model
<b>NBA</b>	National Basketball Association.
<b>MABI</b>	Mindfulness and Acceptance Based Intervention.
<b>MAC</b>	Mindfulness Acceptation & Commitment.
<b>MANOVA</b>	Multivariate Analysis of Variance.
<b>MAT</b>	Motivational Affective Themes.
<b>OMSAT</b>	Ottawa Mental Skills Assessment Tool.
<b>PAC</b>	Personal Action Constructs.
<b>PAF</b>	Principal Axis Factoring.
<b>PETTLEP</b>	Physical, Environment, Task, Timing, Learning, Emotion, Perspective.
<b>PCDE's</b>	Psychological Characteristics of Developing Excellence.
<b>PCDEQ</b>	Psychological Characteristics of Developing Excellence Questionnaire.
<b>PF</b>	Psychological Flexibility.
<b>P-O-P</b>	Performance Outcome & Processes.
<b>PST</b>	Psychological Skills Training.
<b>RMSEA</b>	Root Mean Squared Error of Approximation.
<b>SAS</b>	Social Adaptability Skills.
<b>SASQ</b>	Social Adaptability Skills Questionnaire.
<b>SD</b>	Standard Deviation.
<b>SEM</b>	Structural Equation Modelling.
<b>SSI</b>	Semi Structured Interviews.
<b>SMART</b>	Specific, Measurable, Achievable, Relevant & Time-bound.
<b>SPSS</b>	Statistical Package of Social Sciences.
<b>SRMR</b>	Standardized Root Mean Squared.
<b>SSM</b>	Sum of Squares.
<b>SST</b>	Total Sum of Squares.
<b>SSQ-TBI</b>	Social Skills Questionnaire for Brain Trauma Injury.
<b>SSQ-U</b>	Social Adaptability Questionnaire for College Students.

## GLOSSARY

**Acceptance-** in the context of applying acceptance commitment therapy (ACT), acceptance refers to an adaptation to unchangeable negative events by helping to maintain the individual's psychological well-being and capacity to act. For example, acceptance involves facing the reality even if it does not fit one's expectations or desires, and the willingness to deal with this reality nevertheless.

**Activity-** within the embodied framework, activity in the current context is considered as a single entity constituted of meaningful actions, situations and experience emerging during the athlete's career.

**Adaptability-** consist of a series of psycho-social processes that impact the interaction between the player and the new environment.

**Autonomy-** is a person's ability to act on his/her own values and interests and not acting due to manipulative or distortions from external influence. *For example: a player who has the autonomy to make decisions by himself/herself without undue influence.* In this part, the educational session included advising participants to foster independence by making own decisions.

**Club-** is an organisation with full management structure and facilities whose intention is to facilitate the identification and development of sporting potential to world class excellence.

**Club transfer-** is defined as changes from club to club that occur in the professional player's career during the mastery phase of their development leading to either successful or unsuccessful outcome.

**Commitment-** in the context of applying acceptance commitment therapy (ACT), commitment is defined as the process of actively choosing behaviours that are directly in pursuit of activities that enable the individual to pursue his or her personal values.



**Coping-** in the context of applying psychological skills training (PST), coping is defined as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person”.

**Emotion regulation-** in the context of applying acceptance commitment therapy (ACT), emotion regulation is the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions and such a process may either be automatic or controlled, conscious or unconscious.

**Flexible mind-** in the context of applying acceptance commitment therapy (ACT), flexible mind is defined as the ability to persist in or change behaviour when it is in service of a valued end in a particular context. For example, a flexible mind could be achieved through flexibly and purposefully remaining in the present moment, diffusion or stepping back from thoughts that interfere with valued actions and seeing them for what they are.

**Flow-state-** in the context of applying acceptance commitment therapy (ACT), flow state can be described as “the merging of action with awareness”, “concentration on the task at hand”, and “the loss of self-consciousness”. In sporting context, athletes have reported the “flow-state” to consist of “seemingly automatic body movement, lack of awareness of thoughts and feelings and heightened external awareness”.

**Goal setting** – refers to the procedures that promote the establishment of short, medium, and long-range goals that focus on outcomes, individual performance or processes. In this context, setting goals follow the SMART rule (Specific, Measurable, Achievable, Realistic, and Timely).

**Imagery-** can be defined as an experience that mimics real experience, and involves using a combination of different sensory modalities in the absence of actual perception.

**Interpersonal skills-** is the ability to communicate or interact well with other people. It comprises skills we use every day when we communicate and interact with other people, both

individually and in groups (*for example: good listening, being coherent and audible while speaking*).

**Mindfulness-** in the context of applying acceptance commitment therapy (ACT), mindfulness is defined as frequent receptive attention to internal and external stimuli. In the current study context, athletes must actively deal with or coexist with both internal (e.g., disruptive thoughts and emotions) and external stimuli (e.g., environmental or situational factors) while focusing on the present-moment performance.

**Mixed method design-** is defined as research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches or methods in a single study.

**Motivation-** refers to a process of inducing and stimulating an individual to act in certain manner. It involves a desire, interest, or drive to achieve something. For example, it could lead to setting and regularly reviewing goals and progress, increasing self-awareness, finding mentors for example someone you look up to who is experienced in the habit you want to change, surrounding oneself with positive people.

**Positive thinking-** involves the practice of focusing on the good in any given situation (i.e., looking at things from a positive point of view/optimistic attitude). For example: Always believing that you will overcome the challenges of reduced play time.

**Present moment-** in the context of applying acceptance commitment therapy (ACT), being in the present moment, or the "*here and now*," means that we are aware and mindful of what is happening at this very moment. Additionally, it means that we are not distracted by ruminations on the past or worries about the future, but centered in the here and now. Thus, "*all of our attention is focused on the present moment*".

**Self-confidence-** is defined as a feeling of trust on one's abilities, qualities and judgements. For example, believing that you are capable of successfully meeting the demands of a task.

**Self-discipline-** is the ability to push yourself forward, stay motivated, and take action, regardless of how you're feeling, physically or emotionally. For example, being regular with the trainings even on days when you do not feel motivated.

**Self-organization-** involves a process by which individuals organize their communal behaviour to create order through interactions amongst themselves. For example, being self-organized enabling a person to enjoy participating in sports while at the same time pursuing their studies.

**Social Adaptability-** results from various psychological processes with individual differences, including ability, personality, preferences, or motivation, facilitating changes to aspects of life, social interactions and/or tasks.

**Stressor-** is defined as a situation or event that causes a person to feel stressed, they can be internal or external factors for example- our memories, environment, or the people around us. Stressors are also very personal in that a significant source of stress for one person might cause no stress for another person”.

**Talent Development Environment (TDE)-** refers to the environment in which the talented athlete’s development occur.

**Talent Identification and Development (TID)-** refers to the process of recognising and developing exceptional or talented athletes at a particular age or developmental stage, with the potential to perform at a more advanced level of competition.

**Transition-** is defined as processes of catalysed change due to rupture, aiming at a new sustainable fit between the person and their current environment. For example, during the moments in which a player’s development is interrupted, reoriented, or challenged, the player develops new conduct to answer the challenges through a process of transition.

**Values-** in the context of applying acceptance commitment therapy (ACT), value refers to verbal descriptions of overarching important goals, also known as verbally established motivations.

**Willingness-** in the context of applying acceptance commitment therapy (ACT), willingness refers to the decision to fully experience, thoughts, emotions, and sensations regardless of whether they are pleasant. For example, the willingness in the current context allows behavioural choices to be made not for immediate relief or discomfort, but rather in the service of what is truly valued.

## GENERAL INTRODUCTION

Looking at the career of players in team sports, one key point is the success of their club-to-club transfer (CCT-successful). Indeed, it is unusual for a player to spend their whole career at the same club, and these transitions are essential events in most professional team sports (e.g., NBA basketball drafts, Mercato transfers in soccer, and Major League Volleyball drafts). Besides the economic issues and effects of these moves, questions of how a player's sporting life adapts to new teammates, new coaches, new training forms and new cultures and geographical settings remain (Owiti et al., 2020). Surprisingly, the impact of the new relationships caused by transfers between clubs has tended to be overlooked in sports psychology to date (Owiti et al., 2020; Vaeyens et al., 2008).

There needs to be more knowledge relating to the experience of club-to-club transfer, especially regarding the level of success and the psychological adaptations required. The critical dimensions of the environment that affect these outcomes still needs to be evaluated. In parallel, the processes of transformation experienced by players when they move to a new club remain unclear. For example, the duration of their adaptation and the psychosocial dynamics at stake have yet to be explored in-depth. Thus, i examine the psychological processes linked to these adaptations during players' club transfers. I hypothesize that this adaptation is a psychosocial process requiring specific skills (labelled Social Adaptability Skills- SAS) because adapting effectively and achieving a successful transformation is a competency embedded in the specificities of the professional sports environment.

The area covering adaptability skills is worth some research. However, to the researcher's knowledge, there is a lack of studies on SAS (Owiti et al., 2021; Owiti & Hauw, 2021; Owiti et al., 2020). Furthermore, no existing studies have formulated methods or established structures and tools to measure SAS in sports (Owiti & Hauw, 2021). Such insights point to the relatively limited research on SAS, leaving numerous avenues for new studies.

Thus, the current thesis established a gap within the SAS literature. Hence, it will explore how athletes adapt to different environmental constraints during their club transfer. More specifically, the objectives of this thesis are threefold;

- (i) to explore and identify a range of SAS within the team sports setting.
- (ii) to develop and validate a psychometric instrument for measuring SAS and,
- (iii) to apply the SAS within talent development models through educational sessions to promote excellence achievement in sports.

The originality of this thesis is attributed to the following aspects:

- (i) it will be the first study to explore the SAS required in a sports setting, further developing a psychometric instrument for measuring it.
- (ii) the originality aspect is maintained by combining relevant theoretical frameworks (i.e., 4ES approach, Bronfenbrenner's bioecological theory, and personality psychology) in providing substantial epistemological approach to studying and understanding adaptability skills required during club transfer.

**PART 1**  
**SCIENTIFIC FRAMEWORK**

An overview of part 1 of the current thesis presents 3 chapters that served to advance the conceptual foundation in guiding the design, implementation, and interpretation of the investigation. It essentially highlighted the theoretical underpinning that contextualized the research question. Therefore, chapter 1 presented how the current thesis' work was achieved through a well-defined theoretical framework in addition to enabling for a clear definition and conceptualization of Social Adaptability. Chapter 2 adopted an ontological positioning which represented the philosophical umbrella to cover all the empirical studies, the way they were designed and the mindset by which the results were analysed. Lastly, chapter 3 highlighted the practical requisite of methodological rigor and relevance as concerns the current thesis.



## CHAPTER 1: THEORETICAL FRAMEWORK

This chapter formed part of a discursive/desktop paper, in which i sought to introduce how TID places emphasis on athlete's abilities to achieve the highest level while focusing on a range of variables including adaptations to context in which talent is embedded. The paper further stressed the point of how adaptive abilities play a key role in optimizing returns from the bio-psychosocially complex challenges inherent in any Talent Development Environment (TDE). The discursive/desktop paper was published Owiti, S., Hauw, D., & Collins, D. (2020). Applying a multilayer construct of social adaptability skills within talent development. *Frontiers in Psychology, 10*, 3006. <https://doi.org/10.3389/fpsyg.2019.03006>.

### **What is Social Adaptability Skill-SAS?**

The social sciences field has long been interested in studying adaptability at the individual and collective levels (Kalina et al., 2016). As such, conceptual definitions of adaptability have varied considerably. In an organizational set-up, Savickas (2005, p.45) defined adaptability as “attitudes, competencies, and behaviours that individuals use in fitting themselves to work that suits them”. The study further argues that adaptability is a modifiable resource for employees to successfully manage the competing work demands that occur with environmental changes. Similarly, in a sports setting, Kalina et al. (2016) described social adaptation as attributes consistent with creative adaptation of athletes to new social environments. Insights exist that social adaptation skills are essential in talent development (Kalina et al., 2016).

As a working definition in the current thesis, social adaptability (SA) results from various psychological processes with individual differences, including ability, personality, preferences, or motivation, facilitating changes to aspects of life, social interactions and/or tasks. Results from the above definition shows that, we can assume SA to include those behaviours and competencies consistent with creative adaptation to coaches' expectations,

coaching styles, coaches and teammates from diverse cultural backgrounds, changes during career transitions and being away from family. In their study, Davids et al. (2003) and Warren (2006) argued that adaptability relates to an appropriate ratio between “stability” (i.e., persistent behaviours) and “flexibility” (i.e., variable behaviours) and is essential to athletic performance in many different sports. The particularity of adaptability skill is the capacity to produce, i.e., behaviour that is stable when needed and flexible when needed. However, stability and flexibility should not be construed as opposites (Hoyt & Taylor, 1981). Flexibility should not be interpreted as a loss of stability but as a sign of adaptability (van Emmerick & van Wegen, 2000; Warren, 2006). The SAS are viewed as stable when an athlete is comfortable and performs well within the existing conditions, however, flexibility is depicted when the athlete is forced to adapt to new changes having had to resist perturbations. Therefore, the benefits of SAS could be significant in developing excellence, facilitating talent transfer, and/or life after sports.

### **How can we conceptualise SAS?**

Adaptations changes the relationships of the players with their sporting environment. This environment combines a variety of contextual components that could be characterized within the microsystems, mesosystems, exosystems, and macrosystems in which a person is constantly embedded (Bronfenbrenner, 1979; Krebs, 1999, 2009). Sport psychology studies have investigated the relationships between players and various components of their microsystem in-depth. This kind of knowledge could be informative for understanding what is at stake during club transfers, such as their effects on peers or teammates (e.g., Allen, 2003; Erickson and Côté, 2016; Garn, 2016; Höll and Burnett, 2014), coaches (e.g., Davis & Jowett, 2010; Jowett, 2017; Jowett and Poczwadowski, 2007; Rhind et al., 2012), or parents and family (e.g., Clarke & Harwood, 2014; Horn & Horn, 2007; Knight et al., 2016; Pynn et al., 2019).

Research to date have also characterized how the components of a players environment influence their development by supporting (e.g., players stability and harmony), constraining (e.g., undermining players well-being), accelerating (e.g., increasing the performance success and satisfaction), or modifying how a player handles the impact of a problematic situation (McNamara, 2012; Collins et al., 2014; Gesbert et al., 2021; Gould et al., 2002; Güllich, 2014; Güllich & Emrich, 2014; Martindale et al., 2007; Martindale et al., 2010). In addition, these results could inform us about the potential issues during club transfers and how to solve them, however, during club transfers, all of these components of the microsystem act together as a whole and a combined consideration of them is required to better understand this specific question.

Club transfers could be considered in studies that have investigated the relationships with the environment involved at the level of a macrosystem (i.e., transitions over the career of an athlete) (e.g., Drew et al., 2019; Stambulova et al., 2009; Stambulova et al., 2012; Wylleman et al., 2004;). In this framework, a series of normative transitions during an athletes' career (Stambulova et al., 2009; Wylleman et al., 2004), at the end of the career (Alfermann and Stambulova, 2007; Park et al., 2012; Blijlevens et al., 2018), and non-normative transitions such as injury have been identified (Ivarsson et al., 2018). Schlossberg (1984, 2005) developed a transition model that provides a framework for researchers to analyse the transition process, which has been applied during career transition phases. A transition was defined "as any event that results in a change in relationships, routines, assumptions or roles with the setting of self, work, family, health and/or economics" (Schlossberg, 1984, p.43). The model advanced three types of transitions: anticipated, unanticipated, and non-events. Anticipated transitions were described as significant events that are expected (for example, starting a career). Since the events are normative, an individual can anticipate and plan for the event. Unanticipated transition describes unexpected life events that disrupt the usual routine and can typically lead

to a crisis and/or inability to plan for the event (for example, injury). Finally, non-event transitions are expected transitions that do not occur, for example, being promoted from junior to senior team. Each transition is different and perceived differently by each individual during career progression. However, the model needs to integrate the psychosocial skills required by athletes when encountering any of the three types of transition. Further, the model is silent on what psychosocial skills the athletes would be required to deploy when encountering challenges during club transfers. Thus, I suggest that if the processes of adaptation linked to these transitions could also be informative when considering club transfers, it is less a normative transition than a micro-phase included in the general phases of transition that is at stake (mainly in the mastery phase for professional players and sometimes in the development phase for talented players considering the Holistic Athletic Career model (Wylleman et al., 2004). It is not a non-normative transition because the club-to-club transfer is predictable and could be anticipated. Therefore, the career transitions framework provides elements of context for the transition. It shapes the importance of the issues of the outcomes by contextualizing the club-to-club transfers in the timeline of a career.

Transfers between clubs seem particularly complex to study because of how players relate to a changing environment that includes people (microsystem), culture (macrosystem), interactions (mesosystems), and links to social setting (exosystem) (Bronfenbrenner, 1979; Krebs, 2009). Various other components impact changes in the environment when players move between clubs: club structure (i.e., management, philosophy, equipment), coaches, teammates, family, friends (distance), and culture (other people, habits, languages, geography, climate). Therefore, at this stage, I define club-to-club transfers as changes that occur in the professional player's career during the mastery phase (Wylleman et al., 2004), as they are seldom involved in the development phase of talented players.

Club-to-club transfer can have various levels of outcomes, set in a continuum from total success to complete failure. These could be studied by focusing on the analysis of players' experiences which represent one of the key components of the evaluation of club-to-club transfer outcomes besides the assessment of members of staff for example. Indeed, the player is often best placed to evaluate themselves when deciding on the success of a club-to-club transfer. The others can have an opinion, but they do not always know all the dimensions that are at stake in this assessment. For example, it is difficult to know exactly how the players live in terms of their perception of being distant from home because they do not necessarily reveal this type of intimate experience to staff in a professional work environment, and they may anticipate the risk of being penalized or stigmatized. In addition, analysis of the difficult sides of the club-to-club transfer may reveal what is required for successful outcomes because it highlights the different types of perturbation that players have to face in this situation that remain hidden when club transfer go well. This approach focuses on the analysis of players' problematic situations or critical incidents in activity that are relevant for revealing the processes and adaptations that are successful in various types of sporting situations (Hanton et al., 2008; Hauw & Durand, 2007; Kostamo et al., 2019; Villemain & Hauw, 2014).

When moving to a new club, the adaptations consist of a series of psychosocial processes that transform a new environment. The changes that can transform the new environment into a familiar and personal situation correspond to the meaningful world of the athletes (Hauw, 2018; Owiti et al., 2020). In other words, each component of the athlete's environment may provide different opportunities (i.e., affordances or resources for action) because each player can be transformed by meaningful and personal experiences (e.g., those who experience successful or unsuccessful transformation). If this transformation is successful, then the personal situation is linked to positive experiences, positive well-being, and sports performance progression (Côté, 1999; Davis & Jowett, 2014; Edwards et al., 2004; Mills et al.,

2012; Passos et al., 2016). In contrast, negative experiences in the new environment could lead to isolation and crisis, thereby bringing a set of demands usually appraised as stressors to the athlete (Alfermann & Stambulova, 2007; Martindale et al., 2013; Stambulova & Ryba, 2014).

Considering the multiple components of the environment, it might not be surprising to observe different adaptation processes simultaneously, such as good interaction with the coach but not with teammates. This is an example of what (Bronfenbrenner (1979) and Krebs (1999) described as a “*battle of dispositions*” between developmentally generative and developmentally disruptive attributes within the same environment. Therefore, studying cases of failed adaptations within the sports domain can help teams understand the challenges faced by the athletes during such moments hence avoid lost investments.

### **Social Adaptability Skills (SAS)- The missing link in the career development?**

Understanding the importance of athlete development is a cornerstone of the sports sciences, allowing us to explain the exceptional performances of the sporting elite (Baker et al., 2017; Reilly et al., 2000; Till & Baker, 2020). This development occurs all along the career as suggests general models of athletes’ career and also on the talent development research program.

During the 1990s, athletes’ career was viewed solely as having one stage (i.e., the career termination) (Wylleman et al., 2004). However, currently, athletes’ career is viewed in a holistic, life-span perspective which spans the athletic and post-athletic career and which includes transitions occurring in the athletic career as well as those occurring in other domains of athletes’ lives. Wylleman et al. (2004) presented a developmental stage model which included the following levels; athletic, psychological, psychosocial, and academic/vocational. As the awareness of the importance of athletes’ career stage increases over the years, so has the need to understand the nature and what is required during each stage. Other studies have considered athlete transition as a phase-like process, with Reints (2011) identifying four phases

in the athletic transition: (i) planning for athletic retirement, (ii) career termination, (iii) start of the post-athletic career (iv) reintegration into society. The Holistic Athletic Career model describing the development of the entire athletic career and the types of transitions athletes could face throughout their development was suggested (Wylleman et al., 2004). The five different levels included (i) the athletic, (ii) psychological, (iii) psychosocial, (iv) academic/vocational, and (v) financial level. The first level, athletic, illustrates four stages athletes face in their athletic development: initiation, development, mastery, and discontinuation. At the second level- psychology reflects the changes from childhood, adolescence, and adulthood. The third level reflects the changes in the athlete's social development relative to her or his athletic movement. This level outlines explicitly the athlete's evolving interpersonal relationship with peers, coaches, and parents. The fourth layer examines the transitions at academic and vocational levels from primary to secondary education to higher education and, ultimately, professional occupation. Finally, the last financial level involves long-term management of athletes' financial resources. While agreeing that the Holistic Career Model has identified the transition levels into elite sports, the model failed to account for psychosocial skills related to adaptability that upcoming athletes should deploy during club-to-club transfers.

Baker and colleagues (Baker et al., 2003a; Beamer et al. 1999; Côte and Hay, 2002), while proposing the three stages of sport participation from early childhood to late adolescence, investigated the career development of elite Canadian and Australian athletes in rowing, gymnastics, basketball, netball, and field hockey. These investigations identified three stages of sports participation: sampling, specializing, and investment years/recreational years. In the sampling years, parents were responsible for initiating their children into sports with the main emphasis on experiencing fun and excitement. The children focused on one or two sporting activities during their school years. Although fun and excitement remained central elements of

the sporting experience, sport-specific skill development emerged. Lastly, in the investment years, the child participated regularly in sports without aspiring to reach an elite level of performance. The health and enjoyment characteristics of sport and physical activity were the most essential characteristics of the recreational years. Once again, it is evident that the sports participation model advanced by Baker and colleagues (Baker et al., 2003a) did not provide proposals concerning the necessary psychosocial skills that these upcoming young athletes should start developing as concerns transitioning between the different stages proposed by the model. Nevertheless, the youth athletes must have the propensity to enact social skills to help them overcome obstacles encountered during each transition stage.

In order to fill the missing link, I came up with the term, Social Adaptability Skill (SAS), which leads me to argue that the closest model to integrate the SAS during phase transitions is the holistic career model. However, the professional phase in the career development (i.e., mastery phase) and psychosocial and financial concerns related to this phase have been identified in this model. In that case, no specific attention has been displayed towards the “micro-phases” in this mastery phase, corresponding to SAS. Thus, the analysis should be inserted in this development phase with a closer look at the footage that describes SAS. The same argument applies to the three stages of sports participation (Côte, 1999), where no specific attention is displayed towards the sampling, specialization, and investment stages regarding the SAS.

Early work on talent development included Bloom’s (1985) identification of stages in the way talented individuals (within the fields of science, art, and sport) developed. This route of talent development in sports included: (a) the initiation stage where young athletes are introduced to organized sports and during which they are identified as talented athletes; (b) the development stage during which athletes become more dedicated to their sport and where the amount of training and level of specialization is increased; and (c) the mastery or perfection



stage in which athletes reach their highest level of athletic proficiency. From the perspective of identifying and developing talent, evidence has increasingly indicated that the process of identifying and developing talent is not as elusive as once assumed and that through scientific study, a more comprehensive understanding of the constraints and facilitators of sports expertise can be achieved (Baker et al., 2017; Güllich & Cobley, 2017; Henriksen et al., 2010; Rees et al., 2016). In the following sections, i examined how the SAS could be set in these streams of research in athletes' career.

### **Talent identification and development systems**

Having identified SAS as the missing link within the career and talent development models, i posit on the need for integrating these skills within the existing models. In addition, we also know the importance of identifying and developing talented athletes to their fullest potential being a central concern for sports clubs, national federations and policy makers (Koz et al., 2012). The next step is to present the Talent Identification and Development (TID) which typically refers to the process of recognising and developing exceptional or talented athletes at a particular age or developmental stage, with the potential to perform at a more advanced level of competition (Williams & Reilly, 2000). In sporting practice, TID irrespective of disciplinary stance, have raised questions such as, how can coaches and athletes optimise their training and preparation to attain exceptionality and how sport-systems can be designed to optimise athlete development. Such questions (and many others) have stimulated growing research and applied interest in TID within sports domain.

Talent identification and development (TID) places emphasis on the ability to achieve at the highest level, focusing on a range of variables including adaptations to the context in which talent is embedded (Collins et al., 2019; Hauw, 2018; Morris, 2000, 2013). This adaptation affects the relationship to social constraints such as the variation in club cultures, coaches' style, teammates behaviour, family displacement, and geographical constraints

(Pulakos et al., 2000). Recognising the potential impact of these psychosocial factors on the capacity of an individual to become an elite performer, the need for TID processes and Talent Development Environment (TDE) to place greater emphasis on the promotion of these behaviours is highlighted. Therefore, the following chapter highlights the importance of understanding the TID process and how it relates to adaptability as one of the psychosocial attributes necessary during club-to-club transfers.

Various model frameworks and questionnaires have been suggested for promoting talent identification and development (Abernethy et al., 1994; MacNamara et al., 2010a, 2010b; Martindale et al., 2010; Schlossberg, 1984). Of importance is how these models and questionnaires have formulated the different transition phases through which most athletes seeking excellence must traverse. I discuss some models and questionnaires intending to understand their relevance concerning TIDs and TDEs. Additionally, I will present the missing psychosocial links that need to be incorporated within the existing TID & TDE models and/or cannot be measured with the current existing questionnaires.

### **The Psychological Characteristics of Developing Excellence (PCDE's)**

Researchers have repeatedly recognised psychology as a critical determinant in talent development (Allen & Laborde, 2014; Blijlevens et al., 2018; MacNamara & Collins, 2013). Research has also suggested that psychology is an even more important factor in talent development than eventual adult performance. As demonstrated by many researchers, an excellent psychological skillset should contain positive or adaptive characteristics such as goal-setting, self-organisation, commitment, imagery-use, self-awareness and many others (Fletcher & Sarkar, 2016; Greenglass & Fiksenbaum, 2009; MacNamara & Collins, 2013; Toering & Jordet, 2015). With information from literature, qualitative data collection and expert opinions, MacNamara and colleagues (MacNamara et al., 2010a, 2010b) eventually arrived at a list of various skills with adaptive behaviours called the Psychological Characteristics of Developing

Excellence (PCDEs). It is one of the few psychometric tests based on the second level of personality construct (i.e., personal action constructs-PACs).

Currently, there are three versions of the PCDEQ with the first version having 59 items spread among six factors. Each PCDEQ-1 relates to the possession and application of the psychological skills namely: (i) support for long-term success (17 items) (ii) imagery use during practice and competition (12-items) (iii) coping with performance and developmental pressures (11-items) (iv) ability to organize and engage in quality practice (7-items) (v) evaluating performances and working on weaknesses (5-items), and (vi) support from others to compete to my potential (7-items). Additionally, a short version (PCDEQ-SV) by Hauw et al. (2023) developed due to its efficiency in longitudinal studies has 6 factors spread over 18 items. The 6 factors relate to, (i) management of long-term performance support (3-items) (ii) use of imagery (3-items) (iii) skills in coping (3-items) (iv) performance evaluation and work on weak points (3-items) (v) management of social support (3-items), and (vi) commitment to quality practice (3-items). However, from their factors, both the PCDEQ-1 and PCDEQ-SV, as they are, lacks the integration of psychosocial skills by athletes, which, to my knowledge, is necessary during successful club-to-club transfers.

The second version of the Psychological Characteristics of Developing Excellence Questionnaire–Version 2 (PCDEQ-2) (Hill et al., 2019) generates seven factors consisting of 88 items, each relating to possession and application of the ten PCDEs together with other maladaptive and/or negative characteristics. The general factors comprise: (i) adverse response to failures (21-items) (ii) imagery and active preparation (15-items) (iii) self-derived control and management (14-items) (iv) perfectionist tendencies (10-items) (v) seeking and using social support (9-items) (vi) active coping (10-items), and (vii) clinical indicators (9-items). Factor three of the PCDEQ-2 is focused on seeking and using social support networks which i hypothesise to be part of psychosocial skill-set. However, the integration of factor three within

PCDEQ-2 to my knowledge forms only a small part of the psychosocial skills necessary during successful club-to-club transfers.

Noting that the first two versions of the PCDEQ had only been validated with adolescent athletes. As a consequence, they do not contribute to the understanding of psychological skills in a younger age group. This gave way to a third version (Psychological Characteristics of Developing Excellence Questionnaire for Children (PCDEQ-C) for children aged between 7 and 13 years old (Laureys et al., 2021). The PCDEQ-C contains 51 items consolidated under the following 5 factors: (i) performance worries (16-items) (ii) social support (9-items) (iii) imagery and active preparation (13-items) (iv) adverse response to failure (7-items), and (v) self-derived control and management (6-items). Again, the closest factor which highlights the required psychosocial skills needed when athletes face club-to-club transfer is factor two which does not fully cover the necessary psychosocial skills required in such occasions.

Generic skill packages such as PCDEs are deliberately not targeted at specific issues (Macnamara & Collins, 2011). Instead, PCDE was conceived as a tool kit (game of cards-general skills) that could be used when faced with general problems (or regarding general issues) in talent development (general skills). However, the PCDEQ use questions that refer to specific situations and not general skills (e.g., *I often stop trying when i find it really hard to adapt*; PCDEQ2- *When I'm not succeeding, i feel like people lose interest in me- i find it difficult to overcome my feelings of anxiety when i perform*). Thus, some of these questions found in PCDEQ-2 appear to be specific or refers to specific situations that offer situated view(s) of the skill(s.) Therefore, i consider some part of PCDEs could be inserted in the situated approach of skills.

Importantly, however, the three versions of the PCDEQ do not fully contribute to our knowledge and understanding of the necessary psychosocial skills required during successful

club-to-club transfers. Nevertheless, if athletes want to benefit from the talent development pathway in the most optimal and efficient way, those working with athletes (i.e., coaches, sports psychologist, clubs) should start developing the necessary psychosocial skills of their athletes. Thus, the absence of these psychosocial skills can limit the development of young athletes towards excellence and, therefore, should be incorporated within the existing PCDE models.

### **Talent Development Environment Questionnaire (TDEQ)**

One questionnaire model that comes close to describing an athlete's environment is the TDEQ (Martindale et al., 2010). The TDEQ was designed to measure the experiences of developing athletes concerning empirically identified "key features" of effective talent development environments. It is composed of 59 items spread over seven factors: (i) long-term development focus (24-items) (ii) quality preparation (5-items) (iii) communication (7-items) (iv) understanding the athlete (4-items) (v) support network (8-items) (vi) challenging and supportive environment (8-items) (vii) long-term development fundamentals (7-items). Factors 3 and 5 of the TDEQ concern communication and support networks, which I hypothesize to be part of adaptability skills. However, their integration into the TDEQ forms only a tiny part of the skills required during club-to-club transfer. As such, more research should propose a comprehensive list of skills to be incorporated into the existing TID and TDE models.

The TDEQ has further been developed since its first publication and in its most recent English language short version (Li et al., 2015). It consists of 25 items with a five-factor structure (TDEQ-5), namely (i) long-term development focus (5-items) (ii) communication (5-items) (iii) alignment of expectations (4-items) (iv) holistic quality preparation (7-items), and (v) support network (4-items). The 25 items of the TDEQ-5 have also been translated into French language (Gesbert et al, 2021) and in German language (Alfermann et al., 2023). In fact, the closest TDEQ-5 factors that emphasises on the psychosocial skills athletes require during club transfers are; factor 2 which is concerned with the extent to which the coach

communicates effectively with the athletes and factor 5 focused on the social network (e.g., parents, professionals) that is available to the athlete. It is important to note that, however, the TDEQ-5 short version do not fully contribute to our knowledge and understanding of the necessary psychosocial skills required during successful club-to-club transfers.

To resume, Chapter 1 started by providing a working definition of what SAS entails in addition to being part of the psychosocial attributes essential during club transfer. It went further to posit that social adaptability includes those behaviors and competences consistent with creative adaptation to coaches' expectations, diverse cultural backgrounds, changes during career transitions and being away from the family. Additionally, Chapter 1 highlighted the characterization of how different components of athlete's environment influence their development either through supporting, constraining, accelerating or modifying how they handle problematic situations. Chapter 1 also presented SAS as the missing link within the existing athletes career transition models. I argue that while agreeing that the Holistic Career Model has identified the athlete's social development relative to their transition levels into elite sports, the model failed to account for the psychosocial skills related to club transfers. The importance of integrating SAS within the existing TID & TDE models to assist the athletes achieve their fullest potential was also highlighted.

## CHAPTER 2: ONTOLOGICAL POSITIONING OF THE THESIS

In this chapter, i define the ontological position that leads to the analysis of the athletes as human beings. I also present it as the philosophical umbrella that covered all my studies, the way i designed them and the mindset by which i analysed the results. In addition, it is also the frame that was considered for the athletes and their development. Three elements are included in my ontological positioning: (i) a conception of human mind and activity as an Embodied, Embedded, Extended, and Enactive (4ES approach) (Di Paolo et al., 2017; Gallagher, 2017; Hauw, 2018; Hauw & Bilard, 2012; Hutto & Myin, 2012; Menary, 2010; Rowlands, 2010; Shiavio & Van Der Schyff, 2018; Thompson, 2007) , (ii) a focus on the interaction with the environment as highlighted by Bronfenbrenner's bioecological theory of human development framework (Bronfenbrenner, 1974), and (iii) a multilevel approach of human (athletes) personality in which individual differences generates with the interaction a wide variety of contextual variable behaviours, thoughts and affects that is both situated and personal (Hauw et al., 2022; McAdams & Aubin 1992; Owiti et al., 2020).

Therefore, in the following section, i argue that adaptability is not something that individuals possess but rather sets of relations actualized through dynamic transactions. Various ontological positionings (i.e., 4ES, Bronfenbrenner's ecological systems, and an integrated multilayer identity perspective of personality) will form part of the current thesis in understanding adaptability skills as concerns the athlete-environment relationship.

### **The 4ES Positioning**

With the onset of the cognitive revolution in the early 1970s, a history of methodological practices emerged that began with the individual mind as the unit of analysis (Barab & Kirshner, 2001). This unit was conceived in such a way that techniques for eliminating unrelated variables or enabling intense microanalysis were given a significant role in producing information processing models and simulations (Barab & Kirshner, 2001).

However, by concentrating only on the cognition, traditional paradigms and research methods neglect the importance of affect (or feeling), conviction (or will), as well as the role of context (Kirshner & Whitson, 1998). Various methods from the field of educational psychology and cognitive science have been employed by researchers to capture a more dynamic and contextualized unit with a focus on describing the interaction between the individual(s) environment and their social context (Barab et al., 2001; Kirshner & Whitson, 1998).

Education psychologists have used terms such as intelligence, expertise, ability, and talent to describe the dynamic nature of individual-environment relationships that evolve over time (Barab & Plucker, 2002). As these terms suggest, individuals appear to be skilled and knowledgeable based on functional relations distributed across "whole persons" and in particular contexts. For example, the term social adaptability describes various psychological processes with individual differences including ability, personality, preferences, or motivation that facilitates changes to aspects of life, social interactions and/or tasks (Owiti & Hauw, 2021). Further, and more importantly, by arguing that social adaptability exists within the individual-environment transaction, I dismiss the notion that being able to adapt is only available to a few and instead treat it as an opportunity available to everyone as long as they view it as meaningful.

Psychology holds that human cognition is best understood by exploring how individual mental states are determined in relation with other mental states or with the external world (i.e., behaviour and perception) (Shiavio & Van der Schyff, 2018). This has led to a recent approach that conceive of an individual being viewed as Embodied, Embedded, Extended, and Enacted (4ES) in their environmental contexts (Di Paolo et al., 2017; Gallagher, 2017; Hauw, 2018; Hauw & Bilard, 2012; Hutto & Myin, 2017; Menary, 2010; Rowlands, 2010; Shiavio & Van der Schyff, 2018; Thompson, 2007). The 4ES approach has well-established principles, making it an effective model for examining individual processes in a variety of settings (Casper & Artese, 2023; Menary, 2010; Rowlands, 2010). Accordingly, the current thesis will consider



how the 4ES approach can assist in understanding the adaptation process whenever athletes change between clubs. The 4ES approach is guided by four overlapping principles that understand an individual as fundamentally:

*Embedded:* Accordingly, the explanatory dimension required for the study of successful club-to-club transfers cannot be restricted to the brain nor to the body. It must go beyond the physical boundaries of the individual because active sense-making entails action, interactions, and other forms of adaptive behaviour within the socio-material niche we inhabit and are thus embedded in. These elements can only emerge and be understood when considering the relations of specific situations and contexts in relation to their environment (Winn, 2003). As such, within the brain-body-world system, cognizers encounter biological and non-biological entities that can be helpful in achieving different tasks (e.g., overcoming challenges). And when certain conditions are met, a living system can establish relationships with such factors, resulting in ‘external’ couplings that are relevant to the organism’s well-being as needs and goals are developed contextually (Donald, 1993; Malafouris, 2013). Thus, Embedded dimension views activity as a dynamic process distributed across the athlete, that which is learnt, the environment in which learning occurs, and the activity through which the learner is participating in when learning (Barab & Plucker, 2002).

*Embodied:* A first consequence of this cognition-as-sense-making orientation is that a body is necessary for mental life—the mind is essentially embodied. For ‘body’, it refers to ‘two bodies’, as captured by the German words Körper and Leib (Moran, 2017). The first describes the objective, physical body “a piece of the world that is measurable and that has an extension”. The second term, instead, defines the body as a “feeling entity”, the living body that we experience in our everyday life. To say that an individual is embodied means that our mental life depends directly on these two (objective and phenomenological) descriptions produced “by” or with “the” body. Our embodiment (which includes the brain) develops viable

methods of engaging with our world (perception, action, prediction). This is depicted by the work of Damasio's who argues that; "The human organism is a "homeostasis machine" in constant body-mind interaction with its environment. Homeostasis refers to the *on-going* environmental assessment an organism undertakes to promote its own survival and well-being" (Damasio, 2003, p. 30-35).

*Extended:* Cognition is often offloaded into biological beings and non-biological devices to serve a variety of functions that would be impossible (or too difficult) to be achieved by only relying on the agent's own mental processes (Menary, 2010). For example, consider how biological and non-biological memory (computers) can help us remember an address or a password or how an environment becomes part of an athlete's cognitive domain such that they can often be experienced as part of the adaptability process. Another example is in the field of transition in which using smartphone applications such as zoom leads to a "connected" management of relationships and support request with the expectation of a continuous mediated availability that brings distant participants present through assumed connectivity (Ling, 2008a, 2012; Vanden Abeele et al, 2018).

*Enacted:* In being embodied, embedded, and extended, cognition and more largely activity is also *enacted*. This means that the living systems are not simply responders to environments. Rather, they bring forth their own domain of meaning most fundamentally through the development of repertoires of actions that are guided by principles related to the organism's internal coherence (e.g., homeostasis, thermodynamics, regulation, nutrition, reproduction, and identity). In doing so, they play an active role in shaping the extended cognitive niche in which they are embedded. Enactive approach adds to these three preceding Es that the world in which persons are living in is brought forth by activity. In this case, activity is about generating meanings that underpin the construction of a particular world of one's own in which and through which the individual acts, thinks, feels emotions or interacts with others

(Van Der Schyff et al., 2016). Therefore, enaction is viewed as constructing meanings (i.e., sense making) and a person's activity only emerges by discovering that person's perspectives, perspectives that are distinct from a physical world or a world perceived by an outside observer (Varela, 1997; Weber & Varela, 2002).

Additionally, enactive principle argues that an individual's perception of the environment cannot be explained without postulations of mental representations or objective reality (Kim et al., 1993; Mark et al., 1990; Pufall & Dunbar, 1992). By bringing the person-in-situation into the analysis, much of the knowledge that was previously confined to the learner's head can now be found in the interaction. In other words, separating the learner, the material to be learned, and the context in which the learning takes place is impossible and irrelevant. This argument is depicted in the following sentence:

*“There is a reason to suspect that what we call cognition is in fact a complex social phenomenon. The point is not so much that arrangements of knowledge in the head correspond in a complicated way to the social world outside the head, but that they are socially organized in such a fashion as to be indivisible. “Cognition” observed in everyday practice is distributed—stretched over, not divided among—mind, body, activity and culturally organized settings which include other actors. (Lave, 1988, p. 1) »*

### **Bronfenbrenner’s bioecological theory**

Closely linked to the Embedded principle is the Bronfenbrenner’s bioecological theory of human development which also provides a theoretical framework that could be applied in understanding athletes successful club-to-club transfers. Bronfenbrenner defined ecological theory as studying human development in context or enduring environments. The theory also states that “for reciprocal interaction to occur, the objects and symbols in the immediate environment must be a kind that invites attention, exploration, manipulation, elaboration, and imagination” (Bronfenbrenner & Ceci, 1994, p. 6). In other words, the theory argues that

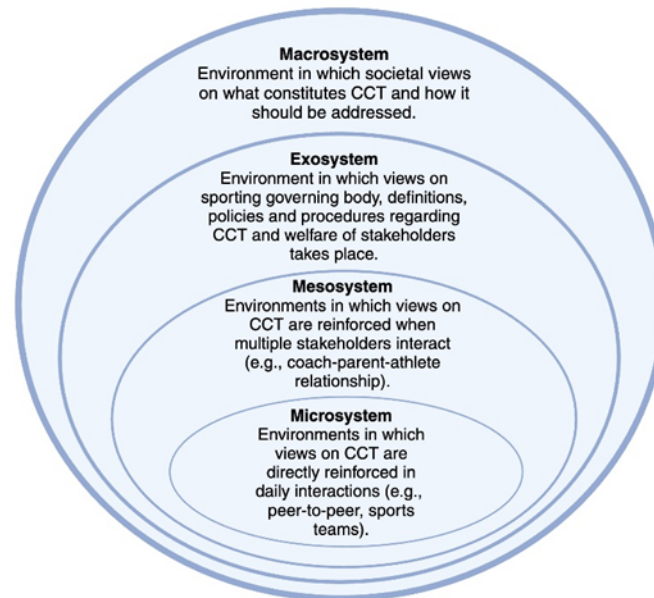
development occurs over time as part of a complex process involving a system of interactions within an individual and between the individual and the environment contexts of which he or she forms part.

In their discussion of gifted adolescents, Plucker and Stocking (2001) stressed the importance of not separating learners from their contexts. As a result, they argued that traditional approaches to evaluating high achieving learners' affective development (i.e., one time administration a battery of tests) are limiting and ineffectual. Instead, researchers should acknowledge that many of these learners frequently move between different educational settings (e.g., after school experiences, extra-curriculum programs, interactions with family and friends, interactions within the larger community etc), and that the intellectual and affective experiences of these learners can only be understood when researchers consider the multiple interactions of individual and context that occur in their daily lives. Thus, one relevant way to operationalise the “embedded” properties in 4ES is to apply the Bronfenbrenner’s bioecological theory.

There are four interrelated types of environmental systems in Bronfenbrenner’s ecological systems theory, namely, the (i) microsystem, (ii) mesosystem, (iii) exosystem, and (iv) macrosystem. These levels range from smaller, proximal settings where individuals interact directly to more extensive, distal settings that indirectly influence development. The various levels within ecological systems theory are often presented graphically as a series of four systems nested around a focal individual like a set of concentric circles (see Figure 1).

**Figure 1**

*Bronfenbrenner's ecological systems theory (Bronfenbrenner, 1981, 1994)*



*Microsystem:* The proximal ecological level includes the settings in which an individual directly interacts.

*Mesosystem:* Moving outward in Bronfenbrenner's ecological levels is the mesosystem, which involves processes between multiple microsystems in which individuals are embedded. Many microsystems interact with activities to affect development. The critical point is that what happens in one microsystem affects what happens in another microsystem.

*Exosystem:* The exosystem is the next outermost level and includes the microsystems in which individuals are involved but not directly embedded. The exosystem "trickles down" to influence development through other people involved in individuals' lives.

*Macrosystem:* Finally, the outermost system is the macrosystem, defined as the set of overarching beliefs, values, and norms as reflected in society's cultural, religious, and

socioeconomic organization. The macrosystem influences development within and among all other systems and serves as a filter or lens through which an individual interprets future experiences.

### **Integrated perspectives of personality: McAdams's identity multilayer model**

Conceiving the athlete-environment interactions in the context of 4ES approach should not lead the researcher to ignore how the athletes' properties could be explored. Indeed, if the environment is changing, the athletes are different too, for example, in terms of being able to take advantage (or not) and function effectively within context. Therefore, the changing dispositions of persons (athletes) creates propensities for interacting with the environment. Therefore, one of the key questions is to define how to approach these propensities. In this thesis, I defend this option that one of the most holistic and relevant approach that is available to describe these propensities is the McAdams model (McAdams, 1995). This model, that was recently used in the field of sport psychology (e.g., Hauw et al., 2022), has emerged an integrative model which can assist in understanding personality conceived as relative stable propensities to act, think, be affected and to experience them in relation to situations.

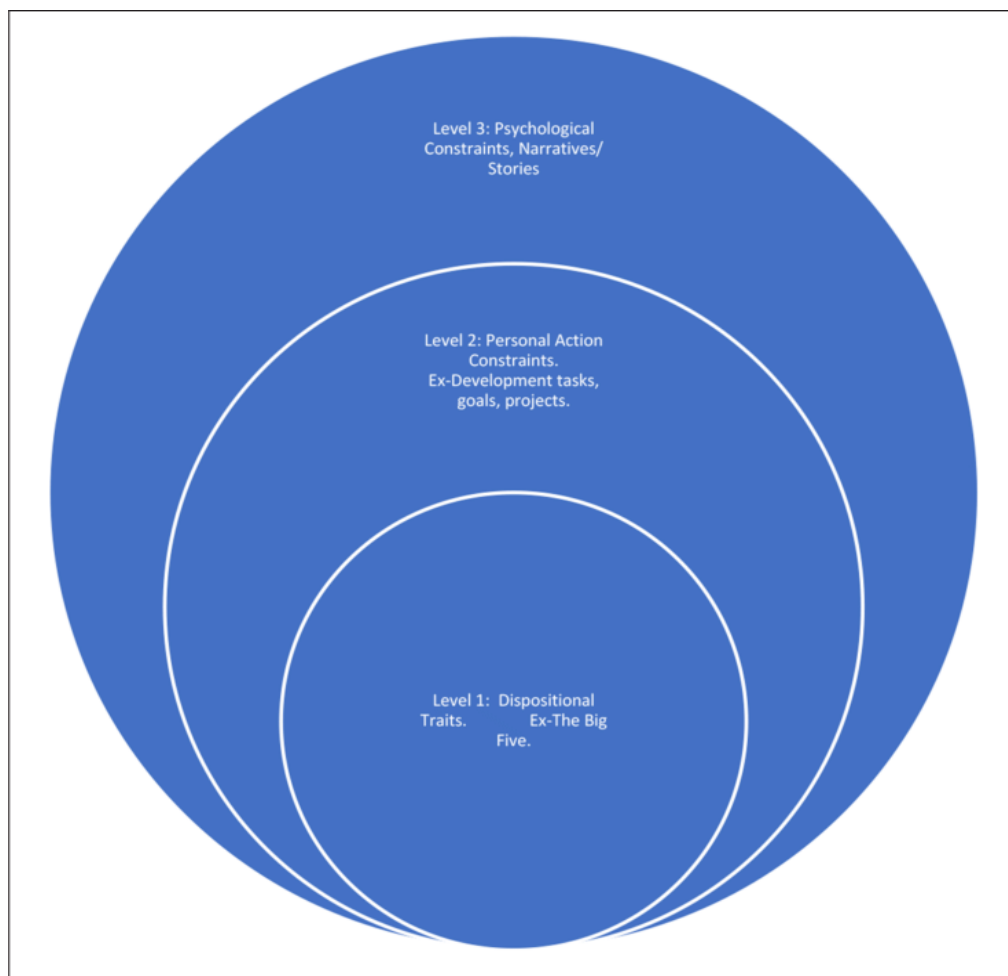
Given the progress while studying personality, a key obstacle in the 1990s and early 2000s was its apparent fragmentation (Mayer, 2005). Different scholars have employed widely divergent theoretical perspectives in personality research without considering how their findings, methods, and experiments might align with those of others (Mayer & Allen, 2013). While accepting specialisation as an essential strength of personality psychology, some warned that its emphasis on the absence of integrative perspectives presented potential difficulties to advancing knowledge in the discipline (Mayer & Allen, 2013). As a general trend for understanding people over the past two decades, personality psychology introduced broad conceptual systems to resolve the issue of fragmentation. As such, diverse constructs derived from different personality theories may complement each other. Examples of integrative

frameworks evident in personality psychology include Mayer's personality systems framework (Mayer, 2005), McCrae and Costa's five-factor theory personality system (McCrae and Costa, 1985, 1987, 2012), and McAdams' three-layered framework of personality (McAdams, 1995; McAdams & Pals, 2006). Of these frameworks, McAdams' approach has arguably been the most well-received (Singer et al., 2013), especially given its appealing simplicity and tolerance towards any particular ideology of personality. McAdams' integrated framework represents a modern take on personality. It moves beyond understanding people along an imaginary trait-state continuum, also embracing contrasting personality paradigms. It has also been applied in sport psychology as highlighted above and appears relevant to identify the necessary multilevel approach in understandings psychological needs in talent development (e.g., Hauw et al., 2022). Therefore, the current thesis will apply McAdam's multilayer model to understand the adaptability skills deployed by athletes when they encounter club-to-club transfers.

Following the formulation of personality constructs (McAdams, 1992, 1995), three levels hold a wide assortment of personal characteristics (see Figure 2); level one consists of those broad traits that provide a dispositional signature for personality description (i.e., the Big-Five), level two are “personal concerns” which are further described as personality descriptions (i.e., coping, motivation, goal-setting etc.), and finally at level three reside the psychosocial constructs that constitute identity “*narratives/Life stories.*”

**Figure 2**

*The multilayer personality model*



*Level 1: Dispositional Traits:* At level one resides the dispositional traits considered as relatively nonconditional, relatively decontextualized, generally linear, and implicitly comparative dimensions of personality. Broadly speaking, personality traits can be defined as characteristic patterns of thoughts, feelings, and behaviors over time and across situations. The five-factor model is the most common, with substantial agreement that the “Big-Five” traits are relatively stable across age groups and cultures (Jolign et al., 2003; McCrae, 2000). I discuss the dimensions of the “Big Five” as follows:

*Openness to experience:* (intellect, culture) involves being creative, curious, flexible, imaginative, and involved in various intellectual interests.



*Extraversion:* (positive affectivity, surgency) involves positive emotionality, sociability, assertiveness, high activity levels, and sensitivity to reward.

*Agreeableness:* is viewed as a degree of friendliness. Traits defining this dimension include cooperativeness, trust, tolerance and soft-heartedness.

*Neuroticism:* (negative affectivity, emotional stability) involves negative emotionality, self-consciousness, physiological reactivity to stress, and behavioral inhibition.

*Conscientiousness:* has been portrayed as conformity or dependability, with characteristics including achievement orientation, responsibility, thoughtfulness, and organization.

*Level 2: Personal Action Constructs (PAC's):* At level two resides the PAC's, a term coined by the personality psychologist Brian Little (Little, 2008) in his research on personal projects. Little defined PACs as cognitive structures that represent the action of the personality system reflecting an individual's motivational disposition and bear on developmental regulation to reinforce the self. PACs include a range of motivational constructs such as developmental tasks, goals, personal concerns, identity goals, possible selves, personal projects, and personal strivings. PACs address how individuals are similar to some but not all other individuals. In addition, PACs reflect sensitivities to different motivational strategies; for example, a tendency toward approach versus inhibition can characterize one's goals and the preferred means of attaining them.

*Level 3: Narratives/Life stories:* At level three reside the narratives/Life stories, which is the most individualized level of analysis, constituting a person's internalized and evolving life story, integrating the reconstructed past and imagined future to provide life with some degree of unity and purpose. Thus, a person's life story synthesizes episodic memories with envisioned goals, creating a coherent account of identity in time. Through narrative identity, people convey to themselves and others who they are now, how they came to be, and where

they think their lives may be going. Cohler and Cole (2004) described narratives/life stories from the following phrase:

*“The life story is a narrative precisely because it presents a discourse of a particular kind, organized with a potential listener in mind and with an intent, often implicit, to convince self and others of a particular plot or present ordering of experience rendered sensible within a particular culture. (p. 6)”*

### **Application of level 2 and 3 of the integrated personality in understanding SAS**

PACs are cognitive strategies that represent the action of the personality system, reflecting an individual motivational disposition that bears on the developmental regulation to reinforce the self (Little, 2008). They capture the contingencies of agentic, goal-directed behaviour. They are more contextualized than the traditional personality traits, thus making them relevant in understanding the processes required during club-to-club transfers. I find it suitable to understand these psychosocial components by applying PACs. Indeed, several authors have argued for the use of PACs in investigating goal-directed behaviours such as Psychological Characteristics of Developing Excellence (PCDE) (Hauw et al., 2022; McNamara and Collins, 2011), motivation in sports achievement (Durovic et al., 2020), goal-setting in sport and performance (Healy et al., 2018), and self-regulation in sports learning and performance (Kitsantas et al., 2018). Finally, PACs comes from the interaction with the environment thus, it is situated and context related making it an important framework in understanding SAS.

Findings indicate that a narrative approach can offer a comprehensive and meaningful understanding of these outcomes and facilitate the practical experience in capturing the psychosocial components of SAS needed when players encounter club-to-club transfers. Indeed, McAdams (1995) has also presented in his integrative framework emphasis on the good life stories, meaning internally coherent, making for a continuous plot line in which early

events "cause" or logically lead to later events. At least six standards of suitable life story forms have been identified: (i) *coherence*- refers to the extent to which a given story makes sense on its terms (ii) *openness*- an open story propels the person into the future holding open several different alternatives for future action and thought (iii) *credibility*- the good story should be accountable to the facts that can be known or found out (iv) *differentiation*- a good story is rich in characterization, plot and theme, therefore, as the adult gathers new experiences, the life story becomes more affluent, deeper and more complex (v) *reconciliation*- within a good story, conflicting forces are leading to challenging issues and dynamic contradictions (vi) *generative integration*- a good story provides solutions that affirm harmony of the person living in a particular society at a particular point in history. Therefore, the current thesis will analyse athletes' life stories to understand the SAS they deploy to succeed when transferring between clubs.

### **Omission of Level 1 of personality construct from the current thesis**

My choice was directed by understanding the experience (level 3) first because the field of research concerning the psychosocial skills necessary during club-to-club transfers was not well defined. In addition, it was also logical to let athletes explain through narratives what is at stake in understanding the phenomena. An example in sport psychology was suggested by Jowett, (2008) who while commenting on why she chose to use the narrative analysis reported that “a focus on the participants' narrative is likely to provide in-depth subjective data and reveal individual differences by seeking to interpret the meaning of the narratives and its importance for personal functioning” (pp. 27–28). Therefore, my rationale lies in the view that narratives were well equipped to explore meaning and experience, and may be then of relevance to sport and exercise psychologists interested in meaning and experience. Consequently, i focused on skills (level 2) because it sounded as the missing link to recent approaches of psychological characteristics of developing excellence (PCDEs) for talent

development. The initial aim was to insert my analysis in this sum of integrated knowledge that refers to the developmental skills for talent. Thus, the omission of level 1 is a limitation of the current thesis and will be discussed further in part 3 chapter 2.

To resume, in part 1 chapter 2, a presentation of the ontological positioning of the current thesis was provided. It included three elements incorporating the 4ES, Bronfenbrenner's bioecological theory, and the integrated multilayer identity perspective of personality which was believed to help in understanding how individuals/athletes are able to take advantage (or not) and function effectively within their contexts. Consequently, each ontological component was discussed in detail as it relates to the current research. As concerns the integrated multilayer identity perspective of personality, the chapter presented a rationale for the application (or not) of the three levels.

## **CHAPTER 3: METHODOLOGICAL FRAMEWORK**

Chapter 3 starts by highlighting the practical requisite of methodological rigor and relevance as it relates to the current thesis. Consequently, it argues for the need to identify a methodology framework that would help in understanding the interplay between rigor and relevance in the current research. Inspired by this text from Socrates, (see Vlastos, 1994) “*The unexplained life is not worth living*”, my personal reflexive position is presented. The chapter also introduces the mixed methodology approach of data collection adopted in the current thesis in addition to the rationale behind the choice. The current chapter goes further to present methodological aspects for the study using the integrated multilayer identity perspective of personality. Indeed, the rationale suggests that applying the third level constituting narratives is specifically suitable in understanding how psychosocial resources work during club-to-club transfers. The theoretical frameworks and ontological positioning mentioned in part 1 chapter 1 and 2 are further linked to the methodological framework and finally each component of data collection method is also presented.

### **Rigor-relevance and reflexivity concerns related to the current thesis**

Rigor and relevance components of a research typically includes any of the following; well-grounded in theory, logically derived hypotheses, unbiased data collection, measures that are reliable and representative, and analyses that are appropriate for the hypotheses (Vermeulen & Hartmann, 2015). However, the question of whether academic research should emphasize scientific rigor, practical relevance, or both simultaneously has been hotly debated in psychological research and other related disciplines for much of the past century (Anderson et al., 2001; Paterson et al., 2018; Schon, 1983). That said, empirical investigations of whether these values are mutually exclusive or compatible are surprisingly rare. So, what is the current state of the psychological domain as it pertains to their rigor and relevance? Central to

answering this question, the current research argued for the importance of identifying a methodological framework that can best help in understanding the interplay between rigor and relevance. Kieser (2011) suggested that rigor and relevance could be considered two institutional logics that influence the degree to which academic research is perceived as legitimate. Consequently, to ensure methodological rigor and relevance throughout the entirety of this study, and also as strongly encouraged when adopting a narrative approach inquiry (see Chadwick, 2017), it was important to reflexively position elements of the authors background as they were instrumental in driving the current thesis.

Therefore, in this section, i present my personal reflexivity and argue in later chapters how this position could affect the methodological framework presented in the current thesis. I am a former collegiate basketball player who worked for many years professionally (teacher and basketball coach) both in Africa and Switzerland. While i do not wish to debate whether this makes me an “insider, outsider, or an “inbetweenner”, however, i do contend to possess significant team sport experience and “*contextual intelligence*” (Mellalieu, 2017) into the population that took part in the current research. In addition, i drew upon the in-depth and nuanced understanding of club-to-club transfer challenges within team sports community, which according to the participants allowed for deeper trust and connection during the interview process.

### **Creating a complex methodological approach**

#### *Mixed method design*

Mixed methods design may be defined as “research in which the investigator collects and analyses data, integrates the findings and draws inferences using both qualitative and quantitative approaches or methods in a single study” (Tashakkori & Creswell, 2007, p .4). This design is guided by philosophical assumptions that enable the mixing of qualitative and quantitative approaches throughout the research process (Hanson et al., 2005). However,

difficulties often arise when the researcher attempts to articulate how the two elements relate to each other (Tashakkori & Creswell, 2007). Additionally, inconsistencies among researchers about what constitutes mixed methods research have been presented (Bryman, 2007; Sandelowski, 2000; Tashakkori & Creswell 2007). Some interpretations view mixed method design as the collection and analysis of quantitative and qualitative data. More contemporary writings in this area had sought to develop an understanding of the importance of complete integration of the two approaches (Bryman, 2007; Creswell & Plano Clark, 2003, 2007; Hanson et al., 2005). Of importance in dealing with the said inconsistencies is that mixed method design is guided by the philosophy of pragmatism. This philosophy advances the notion that the consequences are more important than the process and therefore, “the end justifies the means”. It further argues for eclecticism and “a needs-based or contingency approach to research method and concept selection” (Johnson and Onwuegbuzie, 2004, p.17), so that researchers are free to determine what works to answer their research questions. The pragmatic approach to research is informed by the belief that the practicalities of research are such that it cannot be driven by theory or data exclusively and a process of abduction is recommended which enables one to move back and forth between induction and deduction through a process of inquiry (Morgan, 2007).

#### *The rationale for mixed method design application*

Many reasons have been identified for conducting a mixed method design research. Following a review of theoretical and empirical literature, Greene et al. (1989) identified five purposes for conducting mixed method design research. They comprise, triangulation, complementarity, development, initiation and expansion. Bryman (2006) in a later review of 232 social science mixed method design papers identified 16 reasons for its application. Many of the rationales identified in Bryman’s (2006) analysis are similar to those identified by Greene et al. (1989), although somewhat more detailed. The main rationales and/or benefits

proposed for undertaking a mixed methods design which guided the current study were as follows;

*Triangulation:* allowed for greater validity by seeking corroboration between quantitative and qualitative data.

*Completeness:* using a combination of research approaches provided a complete and more comprehensive picture of the study phenomenon.

*Offsetting weaknesses and providing stronger inferences:* many authors argue that applying a mixed method design approach can allow for the limitations of each approach to be neutralised while strengths are built upon, thereby providing stronger and more accurate inferences (Bryman, 2006; Creswell et al., 2003).

*Encompassing all phases of research process:* (Creswell and Plano Clark (2007) argue that mixed method design approach helps answer the research questions that cannot be answered by quantitative or qualitative methods alone and provides a greater repertoire of tools to meet the aims and objectives of a study. Furthermore, Sale et al. (2002) identified how a combination of research approaches was useful (i.e., in areas such as sports and nursing) because of the complex nature of phenomena and the range of perspectives that are required.

*Explanation of findings:* mixed method design studies could offer a one research approach (i.e., quantitative or qualitative) to explain the data generated from a study using the other research approaches. This is particularly useful when unanticipated or unusual findings emerge. For example, findings from a quantitative survey could be followed up and explained by conducting interviews with a sample of those surveyed to gain an understanding of the findings obtained.

*Illustration of data:* i argue that using a qualitative research approach to illustrate quantitative findings could help paint a better picture of the phenomenon under investigation.



Bryman (2006) suggested that this is akin to putting ‘*meat on the bones*’ of dry quantitative data.

*Hypotheses development and testing:* this design leaves the possibility of using a qualitative phase of this study to undertake developing hypotheses to be tested in a follow-up quantitative phase (i.e., questionnaires).

*Instrument development and testing:* by applying a qualitative study in generating items for inclusion in a questionnaire, this could be used in a quantitative phase of a study (i.e., educational intervention).

Although it is clear that a mixed methods approach has much to offer a researcher, there have been criticisms for its application. Many of these criticisms focus on the incompatibility thesis, that is, the belief that quantitative and qualitative research methods cannot be mixed in a single study as they have such different ontological and epistemological origins. Methodological purists strongly believe in the dichotomy of worldviews and research methods (Creswell and Plano Clark, 2007), and therefore argue against the combination of quantitative and qualitative approaches.

### **Application of a narrative approach**

The current thesis was informed by the methodological underpinnings of narrative inquiry which forms part of qualitative analysis. Although a concise definition of narrative remains elusive (Smith, 2010), and there are various ways in which narrative inquiry can be done (Smith and McGannon, 2018), what separates it from other methods (e.g., phenomenology, discourse analysis) is the central focus on stories. However, while much has been written about what stories can *do* (Frank, 2006; Smith, 2010; McGannon & Smith, (2015), sometimes defining a sort of blind orthodoxie and how they *act* within and through people, less attention has been given to a methodological integration of narrative inquiry in analysing athletes club-to-club transfers (Owiti et al., 2021). Researchers within cultural sport activities

(Blodgett et al., 2017) and those outside the discipline (Mirza, 2013; Prins, 2006; Stockfelt, 2018) have gravitated towards using narrative inquiry as a way to understand people's identities yet no study has ever analysed athletes' problematic experiences during club-to-club transfers. Nonetheless, i believe a natural connection between narrative and club-to-club transfers is created because the stories that people use to shape their realities *can* and *do* inform of the forces (i.e., structural and representational- Crenshaw, 1991) that contribute to the development of a person's identity. Consequently, while minimal methodological guidance exists to achieve this outcome, i agree with Chadwick (2017) that "for narrative analysis to be achieved, it is necessary for researchers to acknowledge and interrogate the material contexts and structural constraints within which narratives are embedded and enabled" (p. 7). Therefore, in order to arrive at a methodological congruency, efforts were concentrated upon engaging with problematic club-to-club transfer experiences not only in an abstract framework, "but as *methodological praxis*, both in relation to encounters and relations in the research field and in analytical and representational spaces" (Chadwick, 2017, p .10).

### **Creating meaning through storytelling- (Narratives)**

Narrative analysis has received a great deal of attention in the literature in relation to what it can tell us about people's experience and the meanings they construct. The narrative structure offers "landmarks" that can be used to identify a temporal logic that describes the course of events forming the unity, plausibility and intelligibility of a story about a person's experience (Adler & McAdams, 2007; Overton, 2008). Bruner (1998) raises the problem of the place given what people say about what they do in contrast to traditional psychology which gives more importance to what people do than to what they say. For a culturally oriented psychology such as what Bruner advocates, doing and saying constitute an inseparable functional unit, and the relationship between the act and the word is analysable, insofar as the narrative dimension of language is integrated into the structure of perception and actions,

thanks to the metaphorical capacity of language (Lakoff & Johnson, 2003; Varela, 1999). What is more, Bruner's cultural psychology is not interested in behaviour but in situated action (in a cultural context and in the reciprocal interactions of the participants), although this does not mean that experimental work should be discarded in order to observe universal human functioning. Culture enables people to give meaning to their actions by establishing symbolic and interpretive systems, such as language, modes of discourse, and the use of language in narrative forms. Therefore, it is a question of taking an interest in "*not only what people do but what people say they do and why they say they do it, and driven to do what they did*" (Bruner, 1998, p. 31). An analysis of this set of factors makes it possible to understand how we organise our experiences in a social and cultural environment and how we "*make meaning*" of it (Kashima et al., 2007)

Barbier (2013) talks about "the experience of activity" (p. 14), which can be communicated and passed on to others through narration. Bruner (1998) identifies the properties of narratives (whether real or imaginary) in the making of meaning, the sequential constituents of the narrative (i.e., events, scenes, actions, characters) do not carry meaning themselves, but it is the configuration of the plot "fabula" that gives them meaning through the configuration of all the sequences and the succession of events. Another feature of a narrative is that it allows meanings to be negotiated within a given context through the narration and the interpretation of the person reading the story (Popova, 2014). Bruner (1998) believes that human beings have a predisposition, a readiness to organise their experience in narrative form and to construct their experience through narration, in particular, through language. Narration enables us to organise our experience and build our world. It also provides access to meaning, because it forms part of a narrative and is therefore shared and negotiated within a culture. For Bruner, we are only able to interpret meanings and their production the same way we are able to specify the structure and coherence of the wider contexts in which specific meanings are

created and transmitted. From this perspective, thought is inextricably linked to the language that expresses it and gives it form and for the agent, it is a way of making intelligible the elements that have marked his or her experience. However, Bruner insists that narration is not just a form of representation of reality, but is rather constitutive of reality insofar as a narrative text act as an instrument of the mind in the construction of reality.

For Bruner (2003), storytelling is an activity of meaning construction during which experience and its temporality are organised, for example, when a person narrates their life, they engage in an act of signification which is both personal and social (Sparkes, 1999). In an enactive framework, we position the meaning that emerges from these accounts as the result of '*sense-making*' processes developing during the activity and giving rise to a phenomenological experience (Hauw, 2009). Normally, it is postulated that this experience is encapsulated in the worlds that the agents have enacted in situation and then in their own culture (i.e., inculturation), with different levels of reflexivity (Theureau, 2010). Finally, in the proceeding paragraphs, i present the 4ES framework through narratives and how it has been applied with success in sports psychology practices.

### **Understanding the 4ES approach in relation to the narratives**

Sparkes (1999) has particularly developed the relevance of narrative analysis in sport psychology research by exploring the embodied dimension of narrative. This dimension is all the more salient in the current enactive framework, one of whose theoretical presuppositions is that activity is '*embodied*'. In the following part, i characterise how this embodied dimension of situational activity can be evoked in the narrative. The work of Sparkes and Smith (2010) analysed the reconstruction of identity via narration in former rugby players who had suffered a spinal cord injury to the cervical vertebrae while playing the sport. The aim was to characterise the multiple means through which people experience their bodies and how these experiences interact to shape identities over time and in specific contexts. The authors used

biographical interviews and identified narrative segments characterising pivotal moments in each player's life. On the basis of the biographical interviews, the study suggested that the narratives provided an opportunity to reincarnate or reinvent, in a different form, a relationship between the individual and his/her body. The authors suggested that a traumatic event that does not provide a narrative to make sense of experiences as a disabled person will affect the structures of meaning in the lives of people with disabilities following an accident. Additionally, telling one's story to others may therefore be a possible way for a person to recreate meaning and give more meaning to his/her life. As a result, for them, storytelling is vital to their condition as human beings since it not only helps to build meaning and make sense of their experiences, but to also encourage or constrain the ways in which lived lives are “shaped” after spinal cord injury.

### **Bronfenbrenner bioecological system as it relates to sport psychology studies**

In this section, i characterise how Bronfenbrenner’s model could be captured in the current thesis. The concept of Bronfenbrenner (1979) argues that a person’s environment is considered as a nested structure of four interconnected surrounding systems formally denominated as “*microsystem*”, “*mesosystem*” “*exosystem*”, and “*macrosystem*”. Bronfenbrenner’s general message is that to sufficiently explain, capture, predict and improve some behaviour, it is necessary to study the objective properties of the environmental context in which this behaviour takes place. However, taking into account environmental properties and their interrelation to the characteristics of the acting person and his or her development and behaviour is not a new insight. What is comparably new is shifting the focus of theorising, empirical investigation and intervention from person to environment. The implication for this statement in terms of methodology application is addressed in the current study by a guiding principle that Brunswik (1955) called “representative design”. As Hammond and Bateman (2009) pointed out, the conditions under which the results of an investigation are obtained

should “*represent the circumstances toward which the results are intended to apply*”. This requires “making explicit the features” of the real situation the investigation refers to, i.e., to describe precisely those environmental properties which are actually relevant for displaying the investigated experience and behaviour. I believe that positioning the current thesis in this direction will lead to generalisation of experiences which depend on what is actually considered a “prototypical person-environment interrelation” (e.g., experiencing difficulties being away from family and friends).

The current thesis considered the behaviourally relevant person-environment interrelation in order to optimise the person-environment fit as a general adaptive goal of any behaviour and behaviour modification. It involved three directions of investigation and intervention: (a) describing the given structures of environmental conditions and identifying and modifying the unfavourable ones (b) analysing the behaviours which occur under these conditions, and (c) making the person for himself or herself, if necessary, more sensible and adapted to those conditions through educational learning.

Finally, in terms of methodological underpinnings, Bronfenbrenner bioecological model have been applied successfully in several sport contexts. For example, LaVoi and Dutove (2012) wrote a recent review on barriers and supports for female coaches, pointing to complex and multidimensional barriers that affect, impede or prevent females from seeking or remaining in coaching positions. Another review highlights current directions in two areas of social influence and interrelationships in sport with the findings arguing that peers and parents were found to have a significant impact on psychosocial outcomes in sport (Partridge, 2011). Concomitantly, Limstrand (2008) also proceeded with a review of 662 young people's (age 6-16 years) usage of 19 different kinds of sports facilities. The study aimed to explore the effects of gender, age and relative activity level on young people's use of sports facilities. The study concluded that, more general, multifunctional facilities were used to a greater extent than

specialized facilities, particularly by the least active. Distance to facility was important for the use of common facilities.

The framework applied in the study (Hauw & Bilard, 2012) argues that when studying athletes' experiences (i.e., club-to-club transfers), it is important to take a holistic perspective on their activity and also emphasize the dynamical and contextual adjustments in all human activity (e.g., Robbins & Aydede, 2009). From this perspective, athletes who manage to succeed during club-to-club transfers are assumed to be in relation to an individual and meaningful context (i.e., situation), which is linked to more general activity that can be studied (Bruner, 1990). For example, this meaningful context could be the expression not only of the athlete's current concerns but also of his/her autobiographical experience that has been progressively embodied, situated and shared (Robbins & Aydede, 2009). In this context, activity is considered as a single entity constituted of meaningful actions, situations and experience emerging during the career (Hauw & Bilard, 2012).

Therefore, in line with the underpinnings of 4ES and Bronfenbrenner bioecological framework, the current thesis will take into account the interactions between athletes' activity and challenging environments and the meaningful world (i.e., situation) of athletes that provides many clues to athletes' specific concerns. This type of research might yield insightful understanding of the psychosocial processes involved during athletes' club-to-club transfer and might also assist in integrating situated educational programs.

#### Methodological congruence

Holt and Tamminen (2010) suggested that qualitative studies should display "*methodological congruence*," that is, consistency should be evident throughout the research question, epistemological perspective, and ontological viewpoint. The current thesis is mainly based on 4ES approach (i.e., Embedded, Embodied, Extended, and Enacted) to human activity that frames the analysis of the dynamic interactions between a person and their environment

and underlines an enacted consideration of the domain (i.e., the situation). This epistemological perspective is based on a self-organized ontology of human beings centred on the conception of humans as creating their concerns, in their singularities, by selecting what is essential for them to within different possibilities (Maturana and Varela, 1980; Mingers, 1991; Joas, 1996; Kupiec & Sonigo, 2000). It also suggests considering the analysis of experience as one of the pillars of the enactive understanding of how a person builds their situations (e.g., Hauw, 2018). All these could be done by simultaneously analysing what is done in context and what is meaningful for the person. Previous research in sports studies have used this methodological unity, and i align the design of this study with this framework (e.g., Gesbert & Hauw, 2019; Hauw, 2009; Hauw, 2018; Hauw & Durand, 2007, 2008; Poizat et al., 2009; R'kiouak et al., 2016; Rochat et al., 2017, 2019; Huet & Saury, 2011).

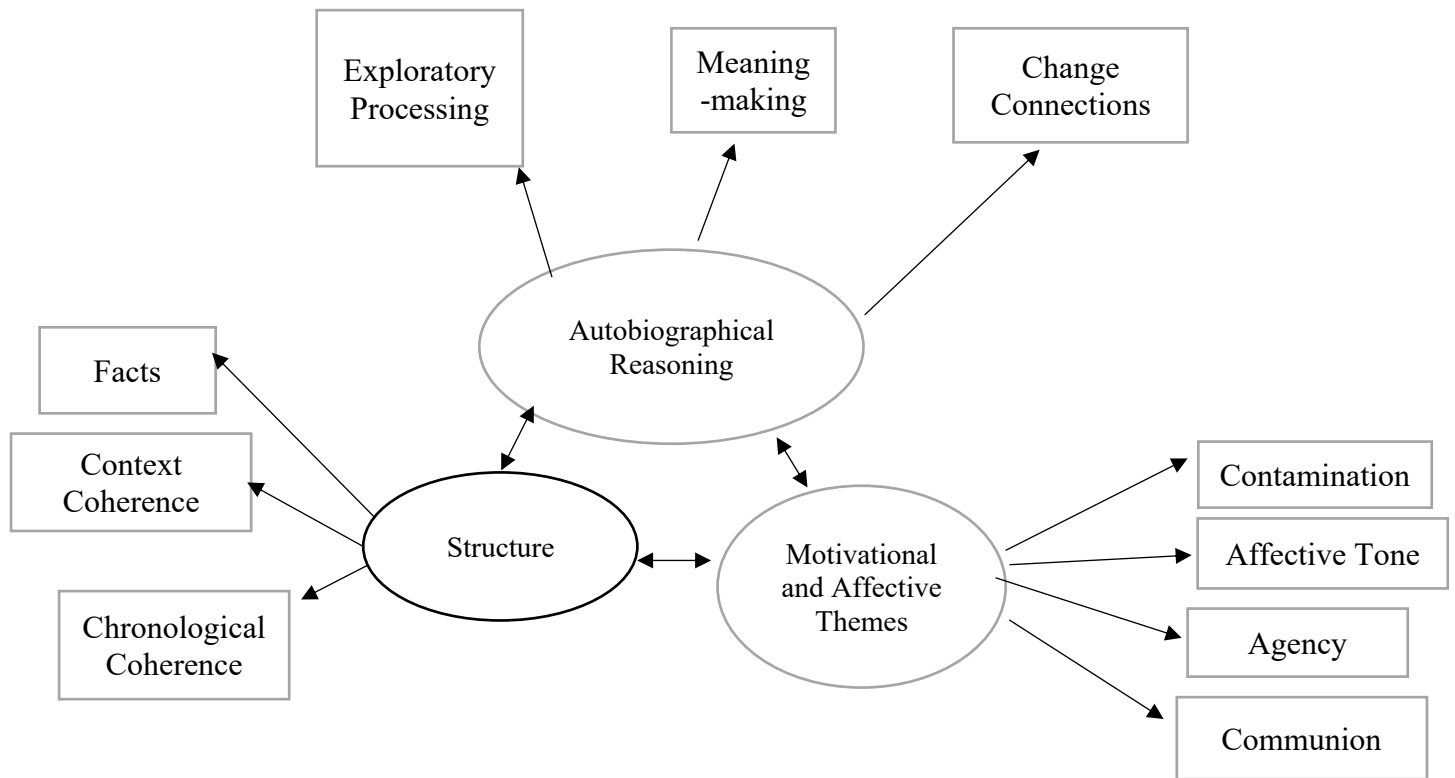
#### The Big-Three Narrative framework

McAdams, (1996) provided a model consisting of six dimensions of good-life stories (i.e., coherence, openness, credibility, differentiation, reconciliation, and generative integration) that include in a situated way various psychological aspects i consider to be part of CCT-successful or unsuccessful. The diversity, breadth, and exploratory nature of narrative field is certainly beneficial but it has also brought up some diffusion and redundancy. This has led to other comprehensive and robust models for understanding the empirical structure of narratives as it relates to psychological aspects to be developed. Therefore, a reframed version of McAdams (1996) model has been recently provided within three factors (The Big Three Narrative framework) of life narratives: Motivational and Affective Themes (MAT), Autobiographical Reasoning (AR), and Structure (S) aspects (McLean et al., 2019) (See Figure 3).



**Figure 3**

*Visual representation of The Big Three Functional Model Framework (McLean et al., 2019).*



The first factor is autobiographical reasoning (AR), which concerns mainly change in the self. The features under this component hinge on narrated change in the narrator, primarily a self-reported change in one’s understanding or interpretation of self or past events. Secondly, motivational and affective themes (MAT) capture goal-like orientations about broad-based general life concerns and emotions. Finally, structure (S) can be thought of as an architectural component of the narrative, less focused on the personal evaluation or meaning of the event and more focused on the degree to which the story is elaborated and coherent or “makes sense” (McLean et al., 2019). In trying to find general structures in the narratives that could be linked to positive and negative tones, i hypothesize a relationship between the good life stories model (McAdams, 1996) and the Big Three Narrative framework (McLean et al., 2019).

When looking at the potential relationship between the Good Life Story and the Big Three framework which I believe relates to CCT-successful or unsuccessful, three possible links emerge; (i) coherence theme of the Good Life Story could correspond to the structure dimension of the Big Three framework (ii) differentiation and reconciliation could correspond to exploratory processing and meaning-making, and (iii) openness could correspond to agency. Therefore, applying narratives in the current study was to enable the athletes organise their problematic experiences through constructing their own world. It also provided access to meaning, because it is part of a narrative, and is therefore shared and negotiated within a culture. For Bruner (1998), we are only able to interpret meanings and their production insofar as we are able to specify the structure and coherence of the wider contexts in which specific meanings are created and transmitted.

#### Ethical Approval

It has become a fundamental principle for all research involving human participants that researchers obtain research ethical approval from an independent research ethics committee before they can begin their research (Resnik, 2018). The process of ethical review is one way that research participants can be confident that possible risks have been considered, minimised and deemed acceptable. Therefore, in the current thesis, ethical approval was granted from the Ethics Committee of the University of Lausanne (Project number: E\_SSP\_062021\_00001), and informed consent obtained from all participants before the start of each study.

#### Using same data for several studies

It is relatively common in sport psychology to use qualitative sample for more than one project (Ekengren et al., 2020; Franck & Stambulova, 2019). This could be as a result of an absence of firm rules about when this is permitted or advisable. From my perspective, and supported in the literature (Kirkman and Chen, 2011), the rationale comes down to research ethics and the theoretical contribution that any new analysis would add. In this case, the first

empirical study focused on identifying problematic experiences of athletes during club-to-club transfers. Consequently, the same data set was used in the second empirical study to uncover the components of athletes' narratives discriminating between CCT-successful or unsuccessful.

### **Qualitative aspects: Data collection and analysis**

Since the current thesis involved a mixed method design, in the following sections, i presented components of the data collection methods specific to each study. In addition, i presented the data processing and analysis and finally the methodology concerns of each corresponding data collection method. At the beginning, once the research questions had been generated and formulated, interviews were conducted to gain more insights of the problematic experiences encountered by athletes during club-to-club transfers. Consequently, questionnaires were also used during data collection to supplement and cross-check the information already obtained from the interviews. Lastly, i also used various questionnaires to address the validation of changes in skill when applying educational models. During the sessions, data were collected and analysed under the umbrella of ontological positioning that i had adopted in part 1 chapter 2 of the current study. In addition, the data were selected and processed for meanings as portrayed by the athletes during club-to-club transfers with the aim of determining key concepts, developing a new theoretical research approach of SAS. In the following sections, i developed the methodological framework and also provided links to the current thesis ontological positioning.

#### **Semi-Structured Interviews (SSI)**

This section discusses the application of narrative data mainly from semi-structured interviews which forms part of the data collection method of the current thesis. Having generated the relevant research questions through other sources (e.g., literature reviews, newspaper histories, blogs etc.), the next step was to formulate questions that elicit responses from the athletes concerning their problematic experiences during club-to-club transfers. It

involved conducting conversational interviews with one respondent at a time. The aim was to explore the athlete's thoughts and experiences by employing a blend of closed-and open-ended questions often accompanied by follow-up "why" or "how" questions (Adams, 2015). In addition, the conversation could meander around the topics on the agenda instead of adhering strictly to verbatim questions as often applied in a standardized survey. In designing and conducting SSI, the following steps were necessary:

*Selecting respondents and arranging interviews:* it involved identifying at the onset the target group through a stratified sampling process. Additionally, a short letter (e-mail) of introduction informing the participants of the study objectives and expectations were sent out.

*Drafting questions and the interview guide:* it is well known that questionnaires are not the best instrument for the compilation of SSI questions, because they connote a fixed instrument to be read verbatim, rather than the flexible, interactive approach of SSI questions (Adams, 2015). Instead, i did the following; created the agenda for the interview guide, outlining the planned topics and questions to be addressed arrayed in their tentative order.

Having in mind that narratives involve self-authorship through telling of stories about memorable and significant events, making meaning of them, linking them together to form a larger life story, and revising them as new information and events arise. I therefore, developed an interview guide based on timeline (see Appendix C for an example) and it required measuring the athletes club-to-club transfer experience at one point and measuring the same person's experience at another point (Hauw & Bilard, 2012; Ryba et al., 2016). This procedure facilitated keeping the semiotic trace of the club-to-club transfer experience (e.g., from the first club to the next). By opting for a timeline narrative interview, i was able to capture the processual nature of club-to-club transfer process as they dynamically emerged over time. Additionally, the interviews were designed to provoke the emergence of past experiences during the participants career transitions. In doing so, the participants were in a position to re-

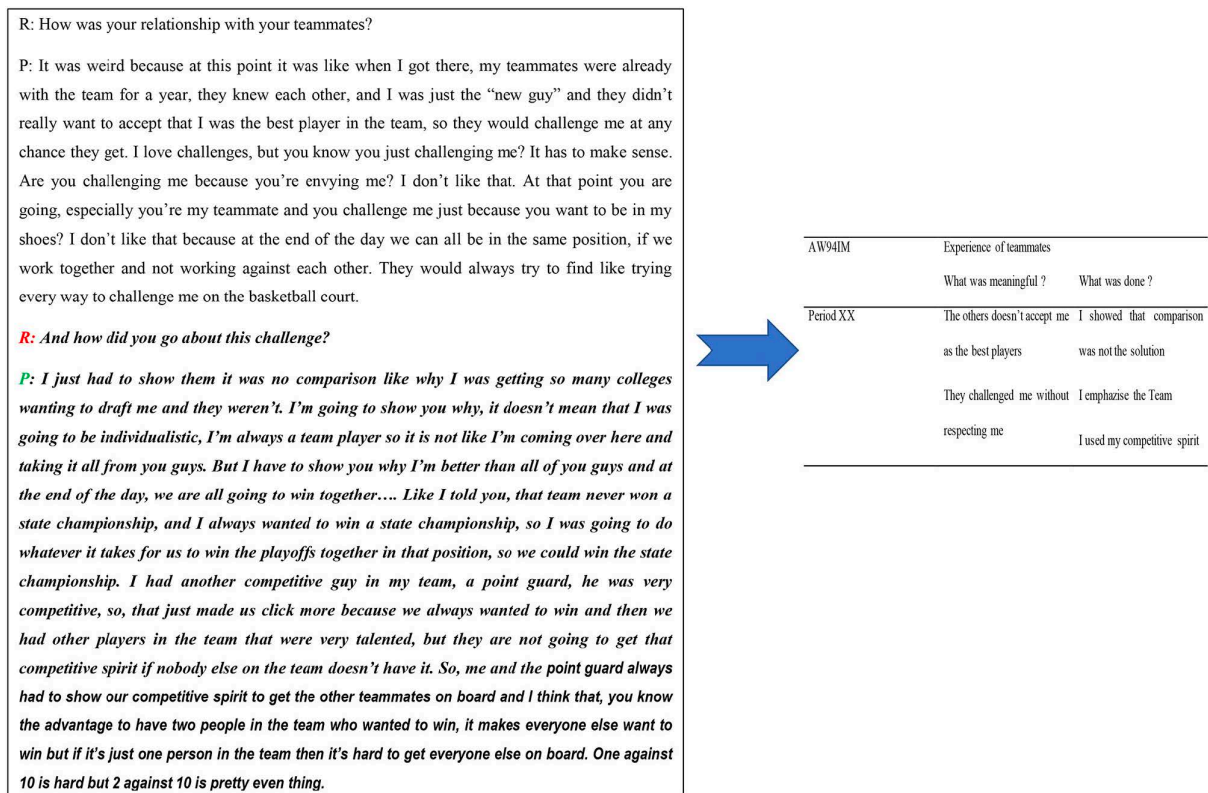
enact their experiences revealing their own story of the transitions. In the current thesis, I considered how the SSIs might supplement and add depth to other approaches in a mixed methods design.

#### Data analysis of the SSI data

From the interviews, only episodes displaying problematic situations faced by the athletes during club-to-club transfers were selected. To analyse the adaptation process, athletes described experiences were split into two parts; (i) what was meaningful, and (ii) the events or examples that took place in that situation (see Figure 4). This approach was adopted from previous coding system used for the analysis of experiences in various sports situations (Hauw, 2018; Hauw et al., 2003; Hauw & Bilard, 2017; Hauw & Durand, 2007, 2008; Rochat et al., 2017, 2018). In addition, to conduct a comparison of the athlete's responses, all the individual coding's were compressed into more general categories using inductive content analysis (Biddle et al., 2001). The seminal work of Scanlan and colleagues (Scanlan et al., 1989) acted as a rationale guide for using the inductive content analysis as opposed to a deductive content analysis allowing for the themes and categories to emerge from the quotes. The process begun with clustering the quotes around underlying uniformities (i.e., common threads) (Glaser and Strauss, 1967) which were emergent themes. Clustering involved comparing and contrasting each quote with all the other quotes and emergent themes to unite quotes with similar meanings and separating quotes with different meanings.

**Figure 4**

*Coding example separating meaningful experiences from situations/events*



Methodological concerns in relation to SSI data

This section primarily dealt with the methodological concerns due to data collected through narratives and specifically semi-structured interviews. Several major concerns are listed along with how methodological rigor, relevance, and reflexivity were maintained.

A common and perhaps one of the fundamental criticisms of semi-structured method of data collection process is being biased by implicit assumptions, interests, world views, and one-sidedness of the researcher (Collins, 1992). I argue that science in general is a human endeavour and one cannot have ideas, assumption, theories, and formulas without human factor. In which case, Pyett (2003, p. 1172) came to a conclusion that “*human factor is the greatest strength and the fundamental weakness of qualitative inquiry and analysis*”. Thus, creativity and invention, science and social science is not possible without subjectivity. Nonetheless, i do agree that semi-structured interview data is vulnerable to possible downsides

of subjectivity that may influence the research negatively. This is mainly due to the fact that researchers are humans who at least if not enthusiastic proponent of certain ideas “neutral observer” will usually have an opinion not only about what they are investigating but also how things should be. In this sense, intellectual rigor goes together with personal convictions like in any other profession. Therefore, the question is not how to exclude the human factor in the current research but how to cope with possible downsides of subjectivity. I made own (implicit) assumptions, interests, and objectives concerning the current thesis as explicit as possible and acknowledged where relevant, epistemological and ontological perspectives.

Another area concerning semi-structured interview as a method of collecting data is the claim to empirical generalisability not being suitable. This stems out from the belief that in research primarily based on interview data, only the experiences of the interviewees selected (i.e., world views, opinions and interests) have the opportunity to be considered, therefore presenting a possibility of influencing the research outcome (Angen, 2000). In the current thesis, i described in detail the persons’ to be interviewed through establishing a clear inclusion/exclusion criterion and the aim was to limit the findings and conclusions to these particular worldviews. In the same vein, concerns have been raised relating to interviewees being influenced by the interview situation resulting in unreliable information due to unconscious bias. This concern is summarised by Alvesson (2003, p. 169) who argued that interviewees follow “cultural scripts about how one would normally express oneself on particular topics” and, hence, the interview is “better viewed as the scene for a social interaction rather than a simple tool for collection of “data”. As much as i agree that, indeed in each of us, internalised norms, cultural scripts deeply embedded in our personality and attitudes strongly influence our world views, reasoning and social actions. In the current thesis, i start by positing that interview data were obtained through social interaction motivated statements. I also draw attention to the fact that there is no such thing like neutral, non-intervening, and non-existent

interviewer in active part of the social interaction. Therefore, in maintaining the research rigor, i established data stemming from “normal” interview situations that mirror what people regard and reveal as conscious thoughts in a social setting (nothing more or less).

Finally, the previous point of unconscious biases raises a further, perhaps more problematic issue of the interviewees not keen to answer all questions truthfully, comprehensively, and precisely as they should. This could be due to the interviewer for whatever reasons asking questions which might be difficult to answer for the interviewees. Hence, in the current thesis, the interviewer took into account that interviewees either not capable or not willing to answer questions (fully), that they might be suspicious, and that they might have their own ideas and intentions which were not necessarily of great help for revealing “the truth and nothing but the truth”. Put precisely *“there might be conscious and deliberate attempts by the interviewee to mislead the interviewer- social desirability”* (Diefenbach, 2009). Therefore, in maintaining the current research’s’ rigour, first, the interviewer treated the interview statements critically and with some distance since there was a possibility that an interviewee did not tell what he or she thought cannot be excluded. Second, i developed a “adaptative questioning” to counteract serious attempts of the interviewee to “cheat”. It involved strategic and purposeful approach of asking thoughtful and planned set of questions, reflective thinking, balanced summaries to delve deeper into the participants capabilities to respond. I also took into account that “tactical answering” on the part of an interviewee is in itself an important data since it is evidence for the dormant ideology thinking and a crucial part of the social and political dimensions of social systems (Diefenbach, 2009).

Internal validity and making sense of data analysis concerns

The following rigor and relevance concern emanates from a positivist view which argues that interview data cannot provide a sufficient base for answering research question(s)



and/or drawing conclusions (Firestone, 1987). This criticism is three-fold and is concerned with the quality, quantity, and time-frame of the narrative data.

First, in terms of quality of data, previous sections showed that unconscious and/or conscious attempts to mislead may limit the quality of the interview data. The current thesis improved the quality of the interview data by increasing the number of interviews carried out (i.e., asking same people several times in the hope that increased trust supports the gathering of more in depth-data) and asking different people about the same issues (i.e., in the hope that a certain pattern will emerge). Further, triangulation was performed (Meijer et al., 2002) (i.e., referring to additional data source; e.g., data collected from different persons, or at different times, or from different places), using different methods (e.g., observations, interviews, documents etc), and applying different theories.

Second, concerns of data quantity from interviews which as (Deem, 2001, p. 14-16) argued- “too small numbers of interviews are not regarded as trustworthy or representative hence limiting the statistical validity”. The current thesis controlled this concern by first calculating the sample size required for every study to increase the statistical validity. In addition, interviews were discontinued only and when no new themes emerged (e.g., once data had reached saturation point) (Charmaz, 2006). Additionally, interviewing more people and cross-checking the data led to emerging patterns and deeper and better insights into the subject being investigated. In this case, i increased the number of interviews carried out to ensure that the rigor and relevance was maintained throughout the current thesis (e.g., until data saturation was achieved).

As a final point, Deem, (2001) suggested that interviews have sometimes been questioned for their internal validity because of their “snap-shot” nature and the lack of longitudinal material time-frame. This might be particularly problematic when the research question focuses on issues for which change and development over a longer period of time are

important. In addressing this issue, i developed an interview guide based on timeline with the intention of allowing the participants to evoke their experiences from their first to last club transfer(s) (see Appendix B).

#### Converting qualitative data into quantitative data

In this section, i highlight how reliability was established in addition to the coding process following Syed and Nelson, (2015) recommendations. I primarily focused on the quantification via coding of narrative data for quantitative analysis- mixed method (McLean & Syed, 2015). First, in the context of coding open-ended data, reliability is typically referred to as interrater reliability, meaning the extent to which raters code the same units of data in the same way (Krippendorff, 2004). In this case, objectivity is inherent in the definition of reliability, since it implies some underlying “truth” that can be assessed by different raters given the proper training. This implies that the phenomenon exists independent of the individuals coding the data.

During the coding process, the content codes were converted to numbers and then statistically analysed (Shallcross, 2013). To give an example, coherence dimension was evaluated using three identification values on a scale of 0 (*complete absence of the value*) to 3 (*fully coherent use of the dimension*). The coherence dimension comprises; *context*- which places the event in time and location; *chronology*- assesses the degree to which the narrative is temporarily organized, and *theme*- assesses the clarity of the topic in the narrative. An example of an excerpt from one of the interviews is provided below;

*“I remember going for practices late at night, the basketball court was ruined with poor lighting not to mention that it was during winter and the heating system wasn’t even working. We tried to negotiate with the club to allow us to train a bit early or get us another alternative basketball court. All our requests fell into deaf ears”*

In coding the above narrative, a score of 3 was attributed because the story contained *context* which identified the place and time, *chronology* was present due to the way the narrative was organised, and finally, the *theme* was also present due to the clarity of the story.

As a result, i took into consideration the fact that reliability is often described as a necessary but insufficient condition for validity (Whittemore et al., 2001). Therefore, validity is considered to be the product of a transparent and complex research process producing findings that reflect the lived experiences of participants (credibility), provides representation of all participant voices (authenticity), details the researcher's critical appraisal of findings (criticality), and acknowledges the possibility of error in a "humble" presentation (integrity) (Whittemore et al, 2001, p. 534). In considering the recommendations above, i highlight how the coding manual was developed.

*Developing the coding manual:* a well-articulated coding manual is the bedrock of a strong and successful coding system (Syed & Nelson, 2015). The first step of this process was to examine the research question and to determine what the coding scheme required in order to achieve success. The coding manual was adapted from McLean et al. (2019) and the next step involved becoming familiar with the data (Braun & Clarke, 2006). This step was accomplished through careful reading, listening, and re-reading, or re-listening to all the data collected.

*Training coders:* during this step, coders were trained following a three-step procedure. First, all the coders involved in the project were provided with a coding manual. There was a detailed discussion of the coding manual and all initial questions addressed. Second, a sample data randomly drawn from the data set with which coders could practice the coding scheme were also provided. These initial codes were discussed thoroughly with the coding team, and the exclusion and inclusion process detailed. The coding manual was often revised at this stage to reflect common questions put to the author by other coders to document early training decisions. To provide documentation of any decisions made in the early training stages, the

coding manual was frequently revised in response to common questions by other coders. Upon reaching an understanding of the coding manual, i began to assign small portions of the data set (chosen at random) for coding. I also ensured that a certain percentage of data was not coded before reliability was reached and thus the beginning of the coding process begun slowly and methodically.

The coding manual was continually updated as difficult cases were dealt with and exclusion and inclusion criteria updated. Once raters were sufficiently trained, they were assigned cases to code independently. Periodic reliability checks were carried throughout the coding process to prevent coder drift, which is the tendency for raters to veer away from each other in their interpretations of the coding manual over time (Wolfe et al., 2000). Finally, i made decisions about coding process, percentage to be coded to reach reliability, reliability coefficient needed, and any decisions about which coder(s) were to assist with the coding process a priori. In this case, a gold standard/master coder approach where one member of the research team (the author) served as the gold standard or master coder was adopted. Additionally, i coded all of the narratives in the data set and a second member of the research team served as the reliability coder. A subset of the total data was coded by the reliability coder, but the second person's coding was used only to establish interrater reliability with the master coder. As a result of this process, the final results were based on the coding of the master coder. The proportion coded by the reliability coder depended on the size and complexity of the data set, thus, in the current study, i took a common figure of between 10- 25 % of the total data set (e.g., Lilgendahl & McAdams, 2011; McLean & Pratt, 2006). Finally, a reliability index was established by applying the Interclass Correlation Coefficient- ICC to account for the similarity and/or proximity of the coding (Shrout & Fleiss, 1979).

## **Quantitative aspects : Data collection and analysis**

### Questionnaires

Methodological precision in questionnaires as a means of data collection mostly center on measurement quality and the effectiveness of subjects' self-reports in accurately addressing attitudes, behaviour, and other variables of interest (Boynton & Greenhalgh, 2004). The latter is especially noteworthy in contexts where participants can be expected to provide distorted responses (e.g., experiences related to problematic club-to-club transfers) (see Del Boca & Noll, 2000). In the current study, I was cognizant of the fact that respondents' answers could have been biased or affected by characteristics of the respondents themselves, the topic under question, the questionnaire, and the researcher (i.e., if present during the application). Various strategies in questionnaire design, interviewing procedures, and data analysis were applied to help overcome threats to the questionnaire's reliability and validity. It involved asking enacted questions which were linked to actions and situations embedded in athlete's environment unlike usual general questions. Below is an example of enacted questioning carried out in the current study- "To what extent does this proposal correspond to you? « *I always feel paralysed whenever my trainer/coach puts pressure on me to reach my sporting goals* ". And the response ranged from; (*very strongly disagree, strongly disagree, mildly disagree, mildly agree, strongly agree, and very strongly agree*). In this sense, the idea was to define the person and the situation bringing relevance in the way the question was asked.

Rating scales have been used widely in psychology, sociology, however, research methodology studies have not provided specific suggestion on the proper selection of rating scale for research studies (Krosnick & Fabrigar, 1997). Additionally, there is debate on the number of points on the Likert scales (Taherdoost, 2019). Authors such as Finstad, (2010) seem to support a 7-point scale as it appears to be more suited to electronic distribution of usability inventories. Contrastingly, Colman and colleagues (Colman et al., 1997) argued that the human

mind has a span of absolute judgement that can distinguish about seven distinct categories and a span of attention that can encompass about six objects at a time. Therefore, the study suggests that any increase in number of response categories beyond 6 or 7 might be futile. Similar result was reported by Johns (2010) who confirmed that data from Likert items (and those with similar rating scales) become significantly less accurate when the number of point scale drops below 5 or above 7. Left with this choice, i chose a 6-point Likert scale due to its ability to reveal more description of the motive and thus appealing to the “faculty of reason” of the participants (i.e., the participant practices more self-reflection since it adds more sentiments to the club-to-club transfer challenges- example: *strongly agree, very strongly disagree*) (Chomeya, 2010; Lei Chang, 1999). Finally, it should be noted that the choice of the number of points depend on the research question and the level of detail required (John, 2010).

#### Methodology concerns in regards to quantitative data processing

As previously described, methodological rigor and relevance in quantitative research refers to the “thoroughness and accuracy with which research is conducted and involves elements such as empirical validity, technical quality, statistical significance, and the generalizability of results” (Flickinger et al., 2014, p. 105). Accordingly, it testifies to the methodological soundness or precision of a study in terms of planning, data collection, analysis, and reporting (Gulati, 2007). In determining the rigor and relevance, a number of indicators were inferred in evaluating the empirical contribution of the current thesis. Such indicators not only included the assessment of objective scores (i.e., reliable and valid measurements), but also encompassed attributions such as what makes “good” quantitative research. Accordingly, reflections about methodological rigor of the current thesis started with underlying theoretical considerations, covering disclosure about the planning and execution, and finally extending to data analysis and presentation of each study.

## Reliability and validity

The current thesis applied a criterion for methodological rigor most commonly used in quantitative research (i.e., reliability and validity). Reliability refers to the exactness of a measurement and is often understood to be a precondition for validity (Eveland et al., 2009). It assesses the consistency of a test, with the aim of keeping the variation between the true score of any measured concept and its observed score as small as possible (i.e., minimizing the error score) (Compton et al., 2012; Francis & Osborne-Crowley, 2017). For example, under fixed conditions, tests of repeated measurement (e.g., split-half test, test–retest procedures, inter- and intra-rater reliability) of the same content should yield close to the same results, given that the instrument employed is reliable. Additionally, reliability addresses the internal consistency of a scale or index, evaluated, for example, by computing objective mathematical scores such as Cronbach’s alpha (Yang & Green, 2011).

Consequently, validity enquires whether the applied instrument actually captures the theoretical construct under question. It means that validity is grounded on the underlying theoretical framework of a measurement, asking what it should measure, and how well it connects to other external variables or criteria that knowingly relate to this theory (Raubenheimer, 2004; Westen & Rosenthal, 2003). Validity also extends to questions regarding the generalizability of findings, for example in asking whether the results provided by a measurement can be extended to other contexts, subjects, or situations. In their various forms, reliability and validity can often times be directly estimated with the help of established parameters and associated interpretation, and they largely affect the assessment of quantitative methodological rigor in general (Westen & Rosenthal, 2003). The following sections outline concerns to empirical rigor related to the methodology of the current thesis and how these issues were addressed.

In reliance on human coders, reliability is one of the most important criteria for a coding scheme in quantitative narrative analyses independent of the researcher using the instrument (Lombard et al., 2002). Coding of the same narrative content has to produce the same results if coders rely on the same coding manual. Thus, in the current thesis, I went to greater lengths in ensuring that the coding manual was sufficiently detailed in description and examples, and that coders were also trained extensively on its use. Reliability coefficients such as alpha or Cohen's kappa (e.g., Krippendorff, 2004) were used to determine the agreement between coders, thus testifying to the fact that findings of the current thesis could be (re)produced objectively and that they accurately represented the understandings shared by the general public. Being aware that the greatest threat to reliability lies in coders' subjective interpretation of the narrative data, especially in contrast to formal categories of the coding manual. Therefore, the coding manual was firmly based on theoretical considerations that guided the research interest and formulation (Potter & Levine-Donnerstein, 1999).

#### Sample size, power, p- value and effect size values

Knowing the importance of statistical analysis in any research, the current thesis included statistical tools applied in each study, beginning from the planning stage to the interpretation stage. It involved informing the readers on the criteria followed in arriving at the results and the sample size, power, *p*- value, and the effect size calculation where applicable. In addition, prior to conducting each study, the hypothesis and the alpha ( $\alpha$ ) levels were declared (Suresh & Chandrashekara, 2012). This was to evaluate for Type I and Type II errors through consideration of the results in the context of each study hypotheses. In keeping with maintaining the study rigor, statistical tests, acceptance limits and practical suggestions were also defined and provided whenever possible (Vermeulen & Hartmann, 2015). Lastly, efforts were made to report both the analysis and findings in a detailed manner to facilitate replication, enhancement, and refinement of future studies.



## **Other methodological concerns related to the current study**

### Experimental-intervention designs concerns

The advantage of experimental interventions over other methods in the social sciences lies in their ability to infer about causal order in effects research (Thorson et al., 2012). This asset also calls for additional requirements for a study's precision. Therefore, in the current thesis, an experimental intervention that controlled the administration of a treatment as compared to an active control group was performed. This procedure allowed for a possibility to directly test the impact(s) of the independent variable(s) on the outcome(s) (dependent variable). Furthermore, to accurately measure the intervention effects, it was necessary to employ an active control group that was structurally equivalent to the experimental group (i.e., meaningful session activities) (MacCoon et al., 2012; Mohr et al., 2009; Noetel et al., 2017). However, being aware of the numerous factors that may have threatened the claim of causality and weakened the methodological rigor (Thorson et al., 2012), measures were put to ensure that no other mechanisms could have possibly produced or confounded the outcome supposedly caused by the treatment (i.e., specific intervention protocol for each group). To further control for the internal validity, there were calls for a random allocation of participants to groups (i.e., creating homogenous groups) to control for influences on the part of the subject that could account for changes in the dependent variable (outcome).

To resume, in chapter 3, i reiterated the importance of rigor and relevance components in the current thesis. Consequently, the chapter clarified how methodological rigor and relevance would be adopted throughout the entirety of the current thesis. The chapter went on to present the reflexive position of the principal author since it was instrumental in driving the current research. Methodology underpinning based on a mixed method design was discussed in view of the fact that it formed the basis of the narrative inquiry. It meant drawing inferences from both qualitative and quantitative data collected in understanding athletes club-to-club

transfer experiences. Additionally, the rationale for applying the mixed method design was presented. The chapter also explored different ways involved in creating meanings from the narratives. This exploration was further supported by the fact that narrative analysis has been applied in different sport contexts informing us about people's experiences and the meanings they construct. In revisiting the current thesis ontological positioning in both part 1 chapter 2 and 3 provided links and explanations in relation to the narratives. Lastly, in part 1 chapter 3, data collection methods were also presented and concerns regarding rigor and relevance addressed.

**PART 2**

**EMPIRICAL STUDIES**

In part 2 of the current thesis, 4 chapters will detail the investigation and findings on SAS. Chapter 1 aimed at identifying the problematic experiences of athletes in addition to the psychosocial skills which contributed to successful club-to-club transfers. The study was published (Owiti, S., & Hauw, D. (2021). The problematic experience of players' mutations between clubs: Discovering the social adaptability skills required. *Frontiers in Sports and Active Living*, 3, 591438. <https://doi.org/10.3389/fspor.2021.591438>). Chapter 2 was aimed at providing an account of the psychological processes involved in both successful and unsuccessful CCT outcomes through the analysis of athletes' narratives. This study was published (Owiti, S., Bersier, T., & Hauw, D. (2021). Individual differences in professional sport narrative experience during basketball players club mutation. *Heliyon*, 7(9), e08015. <https://doi.org/10.1016/j.heliyon.2021.e08015>). Chapter 3 was aimed at developing and validating a questionnaire to assesses athletes' propensities to enact SAS. This study was published (Owiti, S., & Hauw, D. (2023). The initial development and validation of the social adaptability skills questionnaire: Sasq. *PLOS ONE*, 18(8), e0281971. <https://doi.org/10.1371/journal.pone.0281971>). Lastly, chapter 4 was a follow up to chapter 3 study and it aimed at providing a SAS educational session intervention to reinforce the athlete's development of the propensities to enact SAS during club-to-club transfer. However, this study had not been submitted at the moment of the current thesis finalisation but remain to be submitted in the near future under the title Owiti, S., & Hauw, D. (unpublished). Social Adaptability Skills Educational Session Within a Team Sport Context.

# **CHAPTER 1: THE PROBLEMATIC EXPERIENCES OF PLAYERS’ CLUB TO CLUB TRANSFERS: DISCOVERING THE SOCIAL ADAPTABILITY SKILLS REQUIRED.**

## **General overview**

During their career, most players working in professional team sports encounter CCT. These transitions are not always completely successful and could highly impact athletes’ development route. Surprisingly, there is lack of knowledge on the psychological processes involved when athletes encounter problems during CCT. Therefore, the aim of the current study was to explore and identify the problematic experiences as enacted by the athletes during CCT in addition to the psychological skills that contribute to CCT-successful. Twenty professional basketball players (aged between 20 and 36 years; Mean = 26.05, SD = 4.12) who had played under different coaches and clubs took part in retrospective interviews regarding their embedded experiences during CCT. A 4ES framework approach was applied in identifying athletes’ problematic experiences, their adaptability skills and how they were applied during CCT. The study identified seven problematic experiences as enacted by the athletes in relation to coaching, teammates, family/friends, and club. Consequently, the results indicated that the adaptability skills applied by the athletes when encountering CCT challenges could be grouped into mental skills, learning methods, and interpersonal skills.

## INTRODUCTION

In team sports, the success of players' CCT is key to their careers. These transitions between clubs are essential events in various professional sports since most players do not stay at the same club during their entire careers (e.g., NBA basketball drafts, Mercato transfers in soccer, and Major League Volleyball drafts). A better understanding of the experience of CCT is needed, especially regarding the level of success and the necessary psychological adaptations. There is a need to evaluate the environmental factors that contribute to these transition outcomes. Indeed, it also remains unclear, however, the transformation processes players undergo when they move to a new club. Take for example, the psychosocial dynamics and the duration of their adaptation for instance remain largely unexplored. It was thus the aim of the current study to examine the psychological processes linked to these adaptations during players' CCT. As previously mentioned in part 1 chapter 1, it was hypothesized that this adaptation is a psychosocial process requiring specific skills (labelled Social Adaptability Skills-SAS) because adapting effectively and achieving a successful CCT is a competency embedded in the specificities of the professional sports environment.

Players' relationships with their sporting environments change whenever they undergo a CCT. In this case, they are constantly embedded in microsystems, mesosystems, exosystems, and macrosystems that combine a variety of contextual components (Bronfenbrenner, 1979; Krebs, 2009). The players' relationships with various components of their microsystem have been studied extensively in sport psychology. I believe that this kind of knowledge could be useful in understanding what is at stake during CCT, such as their effects on peers or teammates (e.g., Allen, 2003; Erickson and Côté, 2016; Garn, 2016; Höll and Burnett, 2014; Jayanthi & Brunner, 2017), coaches (e.g., Jowett and Poczwardowski, 2007; Rhind, Jowett et al., 2012; Jowett, 2017), or parents and family (e.g., Clarke and Harwood, 2014; Horn and Horn, 2007; Knight et al., 2016; Pynn et al., 2019). The components of a player's environment have been

characterized as influencing their development by either supporting, constraining, accelerating, or modifying how they face the challenges of CCT. Therefore, by considering the components of the microsystem as a whole could inform us about the potential challenges during CCT and how athletes solve them.

I also believe that by looking at the macrosystem level, this analysis could also inform us of the challenges faced by athletes during CCT. Various studies have investigated the relationships with the environment involved at the level of macrosystem with success (i.e., transitions over the career of an athlete) (e.g., Stambulova et al., 2009; Wylleman et al., 2004) at the end of the career (Alfermann and Stambulova, 2007; Blijlevens et al., 2018; Park et al., 2012), and non-normative transitions such as injury (Ivarsson et al., 2018). These studies reported that, processes of adaptations linked to these transitions (e.g., end of career transition) were informative when considering CCT. Therefore, by applying similar investigation within the macrosystem level could assist in understanding the potential challenges faced by athletes during CCT.

Transfers between clubs seem particularly complex to study because of how players relate to a changing environment that includes people (microsystem), culture (macrosystem). The mesosystem consists of interactions between the microsystems, for example, the relationship between athletes and coaches. Consequently, the exosystem contain the links of social setting or events in which the athlete is influenced indirectly but have profound effect on their development, for example alteration of the team's coach (Bronfenbrenner, 1979; Krebs, 2009). Various other components impact changes in the environment when players move between clubs: club structure (i.e., management, philosophy, equipment), coaches, teammates, family, friends (distance), and culture (other people, habits, languages, geography, climate) (see Figure 1).

The outcomes of CCT could also vary from complete failure to total success. One key component of evaluating this outcome could be to analyse players' experiences, since the player is often better placed to evaluate the success or failure of their CCT. In addition, investigating players' experiences could reveal insightful information about what is required for a transition to be successful through analysis of the different perturbations and resources applied in overcoming the challenge. This approach that focuses on athletes' problematic situations or critical incidents in revealing the processes and adaptations have been successfully applied in sporting contexts (Hanton et al., 2008; Hauw & Durand, 2007; Kostamo et al., 2019; Villemain & Hauw, 2014).

In part 1 chapter 1 which was concerned with the theoretical framework of the current thesis, it was hypothesised that when players move from one club to another, the adaptations they go through consist of a series of psychosocial processes that impact the interaction between the player and the environment. The 4ES approach to human activity suggests that adaptations could be described as reciprocal adaptations (Bronfenbrenner, 1979; Bruner, 2003; Krebs, 2009; Rowlands, 2010; Varela, 1997). The adaptations transform the new environment into a familiar and personal situation that could be grasped via the meaningful world of players (Hauw, 2018; Owiti et al., 2020). As a result, club transfers involve the players interacting with their environment meaningfully to re-establish a sense of equilibrium.

Various sports situations have been investigated with the view of understanding successes of these adaptations, reflecting the plasticity of the worlds of meanings that are linked to athletes' activity (e.g., D'Arripe Longueville et al., 2001; Gesbert et al., 2017; Gouju, et al., 2007; Hauw, 2018; Mottet & Saury, 2013; Rochat et al., 2017). During the adaptation process, the players are viewed as active agents in and on their environment. This dynamic nature of player-environment relationships could lead to several adaptation outcomes (e.g., inconsistencies, various unresolved situations and dropouts) (Côté et al., 2006; Hauw, 2017;



Hauw & Bilard, 2017; Pulakos et al., 2000; Schlossberg, 2005; Stambulova, 2017). Therefore, the aim of part 2 chapter 1 study was to identify the most challenging aspects of CCT as experienced by team sport athletes and the psychological skills contributing to their successful outcomes.

## **METHOD**

### **Participants**

In the current study, participants with the most appropriate experiences concerning the research question were initially recruited through purposive sampling. Elite basketball players were drafted since this population encounters many club-to-club transfers during their career progression (CIES Observatory, 2019). The names and addresses of all the players were obtained through contacts from the Swiss Basketball Federation, the governing sports body currently covering 17,000 members from its nine regional associations comprising 185 clubs. A total of 35 basketball players were emailed a cover letter explaining the purpose of the study, out of which 25 players responded positively. Five players could not be interviewed due to time and distance constraints. Finally, the study involved a convenient sample of twenty European and American professional basketball players (age range 20–36; Mean 26.05, SD = 4.12). There was a total of 20 athletes (3 females and 17 males) who took part in the current study. Overall, twelve players had gone through European basketball academies in their respective countries (for example, in France, Swiss, and Lithuania) and had performed at the highest national levels (Swiss Basketball League, League National Basketball France).

On the contrary, eight remaining participants had gone through the North American academies (for example, in the USA and Canada). They had played in one of the highest leagues (the National Basketball Association G League and Women's National Basketball Association). For players to be included in the study, they must have been playing at an international/professional level and had also gone through more than one club transfer (club

range 3–10; Mean 5.35, SD = 2.08). Finally, the players must have trained under more than one coach (coaches' range 4–15; Mean = 8.65, SD = 2.92). Table 1 presents complete descriptions of the participants.

**Table 1**

*Descriptive characteristics of participants*

Participant	Gender	Age	Nationality	Highest play level	No of clubs	No of coaches
AW94IM	M	25	USA	NBA G L	8	11
SL87IM	M	32	Swiss/France	SBL/LNBF	7	10
MM93IF	F	26	USA	WNBA	4	4
CD94IF	F	25	USA	WNBA	7	6
MF99IF	F	20	Swiss	SBL	3	6
VG93IM	M	26	Swiss/France	SNL/LBNF	5	11
VP98IM	M	21	Swiss	SBL	3	10
SK83IM	M	36	Swiss	SBL	9	8
SC92IM	M	27	France	LNBF	3	6
LP93IM	M	26	Swiss/Lithuania	SBL	7	8
JW98IM	M	21	Swiss	SBL	3	10
JW93IM	M	26	USA	NBA G L	6	8
JH95IM	M	24	Canada/Swiss	NBLC	4	7
JP96IM	M	23	USA	NBA G L	3	7
GL91IM	M	28	Swiss	SBL	8	13
EU93IM	M	26	Swiss	SBL	3	4
BH97IM	M	22	USA/Canada	NBA G L	4	7
AH95IM	M	24	Canada/Swiss	NBA G L	6	10
AR88IM	M	31	Swiss	SBL	6	15
TD87IM	M	32	Swiss/France	SBL/LNBF	8	12

*Note:* SBL = Swiss Basketball League, NBA G L= National Basketball Association G League, LNBF = League National Basketball France, WNBA = Women's National Basketball Association, NBLC = National Basketball League of Canada.

## Data Collection

Interviews were conducted on an individual basis using a semi-structured interview guide (as discussed in part 1 chapter 3). The aim was to help the players evoke their personal experiences during CCT. In addition, the setting of the interview was organized in agreement with the participants, allowing them to feel relaxed, comfortable and available for the evocation process. Initially, the first part of the interview was proposed to assist in building a timeline of the club transfers and it required decomposing the flow of time into periods to keep the semiotic trace of the adaptability experience (see Appendix B). Conceptually, the interview guide focused on a player's timeline, incorporating all the different club-to-club transfers to facilitate an in-depth understanding of the dynamics of personal experience concerning specific elements of the environment of each club. This methodology has been used in doping studies and has shown relevance in eliciting personal experiences (e.g., Hauw & Bilard, 2017; Hauw & Lemeur, 2013). More specifically, the current study focused on experience starting with entry into a club environment and continuing to the present day. The timeline (x-axis) supported the interviews and guided the participants to be open about their experiences. Moreover, it increased the accuracy and insights during retrospective recall (Drasch & Matthes, 2013).

Secondly, the following part of the interview focused on the experience for each timeline period. The interview guide format consisted of five main question areas to reflect the recommendations of Morgan and Krueger (1998). These areas included: (i) opening questions- which involved creating a thoughtful, permissive atmosphere and setting the tone for the interview; (ii) introductory questions, which had the purpose of gaining the participant's attention, introducing the topic and explaining its relevance to the study. For example, the question: "In order to describe your experience during your club-to-club transfer, how would you describe your relationship with the coach?" (iii) key questions focused on answering the current research aims. For example: "Did you find the experience problematic?", "What did

you find meaningful in the experience?”, “How did you overcome the problematic experience?” (iv) transition questions moving from one period to the next. For example: “What has changed now compared to the previous experience?” and (v) ending questions, which involved asking the participant to reflect on the entire discussion and inviting them to offer their positions or opinions on the central topic. For example: “is there any additional comment you would like to reflect on?”

The interview guide consisted of the following areas of experience mostly developed from reviewing articles related to athlete’s career development (see introduction of this chapter); (i) How would you describe your relationship with the coach? (ii) How would you describe your relationship with the teammates? (iii) How would you describe the feeling of being away from your family? (iv) What was your general feeling about the club? (v) How would you describe adapting to the coaching style? (vi) How did you adapt to the coaching expectations? Finally, the players were asked to rate their experience(s) of the transition at the end of the club-to-club transfer in addition to whether they thought the club-to-club transfer was either successful or problematic. From an applied and practical standpoint, the interviews were based on a pilot interview with one elite basketball player. The narrative length, which ranged from 4,798 to 12,861 words and lasted between 30 and 90 min, was digitally recorded in their entirety.

### Data Analysis

Of the 20 participant interviews, only episodes that displayed the problematic situations faced by a player during club-to-club transfers were selected. I first identified the challenging problems during club-to-club transfers, and then listened again to the interviews. A problematic situation was determined by looking at disturbances in the transition that players reported as being difficult enough to prevent them from performing at their best (e.g., responses such as “I just could (. . .) not adapt to (the) coaching style.” “I was always lonely and feeling homesick

from being away from my family.” or “I found the level of play was low and the practices lacked structure”). Further selection was performed to identify the problematic aspects of the club-to-club transfer discussed by the participants, after which they were transcribed verbatim.

Of the 20 participants who took part in the current study, the problematic experiences they faced during CCT were presented in four categories: teammates, coach, family, and club. The data analysed, therefore, comprised the following aggregated problematic experiences: 27 cases with teammates, 38 cases with a coach, 15 instances with family, and 27 cases with a club. In addition, the number of times each participant experienced a successful or problematic CCT using the four categories (teammates, coach, family, and club) were aggregated. To analyse the adaptation process, the described experience was split into two parts as was discussed in part 1 chapter 3 (what was meaningful and the events/examples that took place in this situation). This approach was adapted from a previous coding system used for the analysis of experiences in various sports situations (Hauw, 2018; Hauw et al., 2003; Hauw & Bilard, 2017; Hauw & Durand, 2007, 2008; Rochat et al., 2018; Rochat et al., 2017).

To conduct a comparison of the participant responses, all the individual coding's were compressed into more general categories using inductive content analysis (Biddle et al., 2001). Each experience identified (i.e., what was meaningful and what was done) was grouped into more general dimensions. As the coding progressed, the coding themes emerging from the data from one of the transcripts informed the coding of the following. A constant comparative method was applied (Holt & Tamminen, 2010; Weed, 2009). It involved developing additional codes, identifying emerging themes within the data and constantly comparing the codes in myriad ways (for example, between participants or different periods). Through feedback and discussion, the coders unanimously decided on each coded theme. Following the criterion of theoretical saturation (Charmaz, 2006; Corbin and Strauss, 2015; Holt & Tamminen, 2010; Strauss and Corbin, 1998; Weed, 2009), data collection and analysis were discontinued when

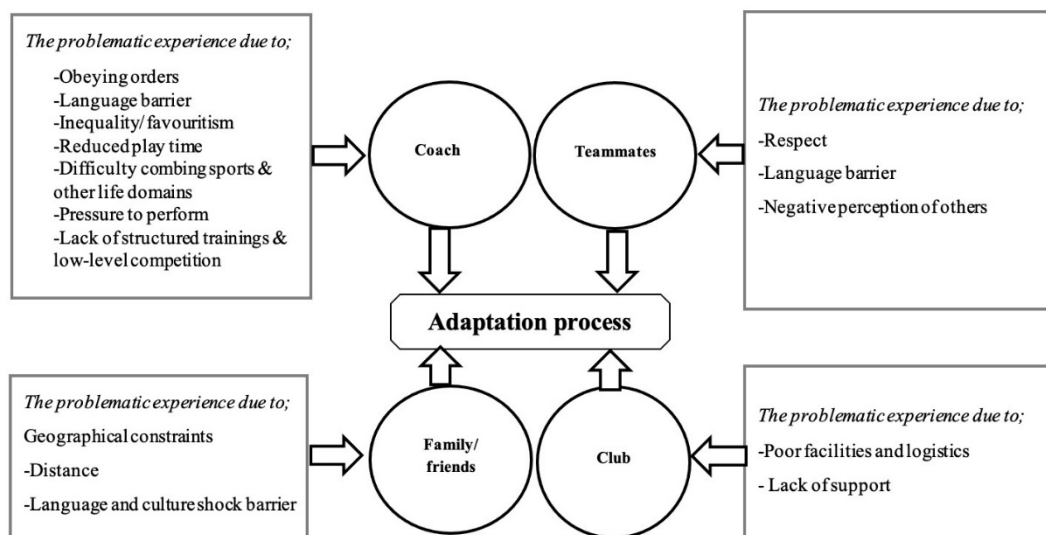
the categories upon which the theory was built no longer produced new insights. At the end of data processing, a list of problematic meaningful experiences and the actions/events relating to them was obtained. These results were considered as types of expertise and the “adaptability skills” deployed by players.

## RESULTS

This section first presents the types of problematic meaningful experiences players encounter during CCT. Secondly, it reports on actions undertaken during these situations, which relate to the “adaptability skills” deployed by players regarding their experiences. Figure 5 represents the different types of problematic meaningful experiences enacted by players during CCT. Seven problematic incidents involving the coach, three with teammates, two with the club/team, and three concerning family and friends were observed.

**Figure 5**

*An Overview of the negative meaningful experience of athletes during club transfers*



### Problematic meaningful experiences with coaches

This category contained both problematic experiences arising from coach expectations and coaching style. Thus, challenging experiences of the coach-player relationship were

described by the following sub-categories: obeying orders, language barrier, inequality/favouritism, reduced play time, difficulty combining sports and other life domains, pressure to perform, lack of structured training, and low-level competition.

#### *Obeying Orders*

Players admitted that to adapt to the team setting; they developed specific approaches to obeying orders or following instructions. As a result of these demands, some players displayed problematic experiences in conforming to or obeying orders and found arguments to justify their feelings, as indicated by this example: *“I think it was just my personality. I’m an intense person, so whenever the coach instructed us to do things, i would be hard-headed and wouldn’t want to do it straight, and that would be it. This led to the coach losing confidence in me since i wouldn’t listen to his instructions, and from then on, my play time reduced considerably”* (participant CD94IF).

#### *Language Barrier*

Players admitted that effective communication within the team brought an established rapport between coaches and players, which in turn had a significant role in contributing to players' adaptability. However, there were instances of a communication breakdown, as reported by participant AR88IM: *“It was not easy for me and the other players because the coach was an Italian who didn't speak any French language at all. He would often come to me or the other guy who spoke Italian to translate his directives to the other team members. We found this bizarre since it made communication with him difficult”* (participant AR88IM).

#### *Inequality/Favouritism*

Some participants highlighted cases of inequality, which they say hindered their adaptation process. Participant AW94IM observed that the *“coach had his son plus those whom he treated as favourite players on the team, of course, you are going to want the best for your child, but you can’t jeopardize, you can’t discourage other players from their dreams.”*

### *Reduced Play Time*

The players reported that reduced playtime had adverse effects, including emotional reactions such as crying and frustration. This, in turn, made the players experience low self-esteem and anxiety, as outlined by participant AW94IM: *“I wasn’t on the starting list. I wasn’t the type that was going to voice how frustrated i was. It’s always frustrating when you are always playing and then, like, now, I’m not playing anymore, you ask yourself, what is going on? You can play it down, but down deep me, i knew i was frustrated and mad”* (participant AW94IM).

### *Difficulty Combining Sports and Other Life Domains*

There were cases where the players negotiated between sports development and studies. *“It was difficult; my schedule was exhausting. There were times i would go for training from 12 to 14 hours, then have lunch, then go to my class before heading back for my basketball practice for about four hours, and that was for two seasons. I never got a break, and it was too much at some point, and i had to quit”* (participant CD94IF).

### *Pressure to Perform*

Participants reported that some coaches focused solely on score statistics, resulting in players experiencing pressure to perform. An American player expressed this: *“I was always frustrated since we were the only two professionals in the team, while the others were either students or semi-professionals. The coach would always expect us, the professionals, to do everything on the court, be it scoring, playing defence, or attacking. On top of that, you had to score many points if you wanted the club to renew your contract the following year”* (participant EU94IM).

### *Lack of Structured Training and Low-Level of Competition*

In some instances, overseas players reported finding the level of practice and competitions not challenging enough, as stated by participant MM93IF: *“It was a big shock, i*



*never expected that (low-level), coming in, you think I'm playing professionally, and every year, i will step up my career. I would rate my college basketball higher than my current European professional team. It's difficult to adapt because the challenge here is insufficient"* (participant MM93IF).

#### Problematic experience with teammates

The analyses of problematic meaningful experiences were grouped into three sub-categories: lack of respect, language barrier, and negative perception of others.

##### *Lack of respect*

There were reported cases of players searching for respect and approval from teammates, as discussed by the participant: *"It was weird because at this point my teammates were already with the team for a year, they knew each other, and i was the 'new guy,' and they didn't want to accept that i was the best player in the team so that they would challenge me. I had to show them why i was the highest paid draft"* (participant AH95IM).

##### *Language Barrier*

There were cases of players finding themselves unable to communicate with fellow teammates as narrated by participant CD94IF: *"I moved to Romania to play basketball; we were the only two players from the USA who spoke English, culturally speaking, it was different. There was no communication at all, apart from gestures. We could speak to them in English, and they would respond in their language, which we didn't understand. The misunderstanding brought a lot of conflicts on court, and i would say we were all to blame for not having made an effort to learn one another's language. The bonding and even the effort to do so was zero. Can you imagine having a drink with your teammates if you can't communicate? It's just not possible"* (participant CD94IF).

### *Negative Perception of Others*

In some cases, participants felt unwelcome in their new club by fellow teammates, which slowed or complicated the adaptability process. Additionally, some players reported that their relationships with their teammates were “conditional” (i.e., based on image, money, and/or performance). This was discussed by participant BH97IM, who outlined that the “*relationship i felt with my teammates was that of sports friends. It was a very formal and rigid type of relationship. There is no time for human side talks; it doesn't have to be about basketball all the time. I missed that human side of it*”.

### *Problematic experience due to family/friends*

This category provided a general theme linked to geographical and cultural constraints. Participants underlined the distance, language and culture shock barrier as challenges they faced. Some players had to quit their homes to join the basketball academies at a young age or to play overseas.

### *Language and Culture Shock Barrier*

There were a couple of players who encountered problematic feelings of language and culture shock barriers. “*I was always missing home, i mean, it's lonely here because i don't have things to do as i would do back home, and people are not used to getting together here. I'm somebody who loves being surrounded by people wherever i go. You don't realize how much you miss home, like in the bus when i hear people speak French and you feel like it's you and a bunch of other people around you, there is no connection*” (participant MM93IF).

### *Distance*

The time difference impacted participant CD94IF negatively, who reported, “*I'm from Chicago, so I'm used to those freezing temperatures; my main issue was that i couldn't communicate with my friends and family back home. The time difference couldn't just allow it. My mum works at a bank and would work in the morning while I'm at my practices or games.*”

*i need regular communication with my sister, mother, and friends. The world feels empty without my family and being unable to communicate with them. All these made me feel homesick and bored in my apartment"* (participant CD94IF).

#### Problematic experience due to club

This category involved two sub-themes, including poor facilities and logistics and lack of support. These represent structures that facilitate the adaptability of players. The focus was more on the environment in which the players' adaptation occurred. The club-to-club transfer environment had the sports team as the core. Still, it also went beyond the players' direct interaction with the club (e.g., facilities and financial support) and related to supporting players' adaptability.

#### *Lack of Support*

A lack of support was mostly connected to low budgets, meaning several clubs could not provide the necessary help needed by the players. Participant JW93IM reported this: "*I was used to travelling on nice buses, taking flights and leaving the night before for away games so you have good rest before the games. At my current club, it is a complete adjustment for me. Now, i have to wake up by 7h then travel about 4 hours to go play then come back, that's not easy because my recoveries are very compromised"* (participant JW93IM).

#### *Poor Facilities and Logistics*

Concerns about poor facilities and logistics could have been more beneficial to players' adaptability. Participant SL87IM observed, "*The club did not have enough basketball court for practices, there were times when we could start practices only after 22h. We would finish very late, and by the time you reach home exhausted, it's past midnight. The worst part was during winter, the practice hall was so cold because the heating system had broken down, and it took months and months to finally get it repaired"* (participant SL87IM).

## Adaptability Skills

This section reports on the types of adaptability actions (i.e., what they did) and the corresponding skills deployed by players during club-to-club transfers. In linking these actions to situations, i contextualized the adaptability actions with the problematic experiences of players during club-to-club transfers (see Table 2). To overcome challenging problems, players described their actions, which refer to seven adaptability skills: self-discipline, goal setting, motivation/confidence, self-organization, interpersonal skills, positive thinking, and autonomy.

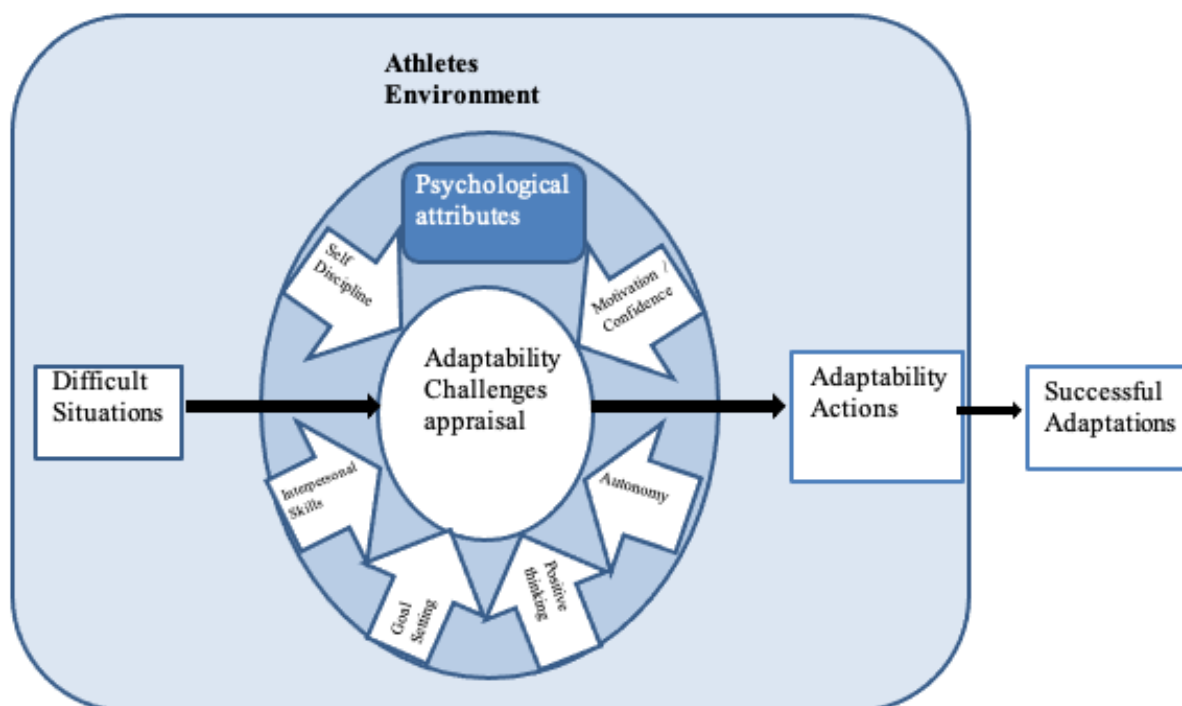
**Table 2**

*Adaptability actions and skills deployed by athletes during club-to-club transfers.*

Difficult Experience	Adaptability Actions	Adaptability Skills
<b>Coach</b>		
-obeying orders	being disciplined	self-discipline
-language barrier	willingness to interact with coach and support staff	interpersonal skills
-inequality/favouritism	willing to accept challenges (sense of involvement)	motivation/confidence, positive thinking.
-reduced play time	using challenges to progress	goal setting, positive thinking
-difficulty combining sports & other life domain	desire to balance between sports and other life domain	self-organisation
-pressure to perform	using challenges to progress	motivation/confidence, positive thinking
-lack of structured trainings & low-level competition	being aware of motives to participate in sports (intrinsic, competitiveness)	motivation/confidence, goal-setting,

Difficult Experience	Adaptability Actions	Adaptability Skills
<b>Teammates</b>		
-respect	respect	interpersonal skills,
-negative perception of others	willing to interact with fellow teammates	
<b>Club/Team</b>		
-Poor facilities	reacting to hard times positively	positive thinking, motivation/confidence
-lack of support/logistics	willingness to step out of comfort zone	
<b>Family</b>		
-geographical constraints/distance	taking responsibility for own development	self-discipline, motivation/confidence, autonomy

An overview of the concepts showing the categories, adaptability actions and skills as experienced by athletes during club-to-club transfer is shown in Figure 6



**Figure 6:** An overview of psychological attributes for enacting successful adaptations.

### *Self-discipline*

The actions reported by the players at this level focused strictly on rules, following planification, ignoring the negative experience, and staying focused on the set goals. Participant CD94IF reported: *“I think it (self-discipline) probably came from me, i think i finally became very coachable, as i would listen to what the coach had to say and then try and do it. Like i wouldn’t fight the situation. I think because i was getting paid as a professional and I’m getting older too”* (participant CD94IF).

### *Goal-setting*

The actions reported by the players were to build a strategy and find a solution to the challenging experience. It comprised analysing the situation, identifying goals and sub-goals and making a strategy to attain them, including self-assessment. Players reported pursuing a range of both short and long-term goals during adaptations, as was in this case for participant EU95IM: *“When there is a new coaching style that i need to adapt to, i set some goals of how to achieve it, i keep reviewing the progress and evaluate the whole process, this i do quite often with my coach to see where i am, with this, i don’t mind the repetition, it just means that i have achieved my goal once the repetition comes to an end. And on repetition, you have to get used to it if it means adapting to my coach. There are hard things out there way tougher than this, so you must play along”* (participant EU95IM).

### *Motivation and confidence*

The actions reported by the players at this level referred to being aware of the motives for participating in sports, for example, intrinsic motivation and competitiveness. In this study context, motivation and confidence were closely linked, as described by participant VG93IM: *“You have to believe in yourself and go for it. If you have the desire, do not hold back even if it involves challenges like i had to go overseas; don’t stop. Changing the environment is part*

*of the game in sports, so this should not hold you back. So, to become professional, you must be ready to adapt to different challenges” (participant VG93IM).*

#### *Self-organization*

The players' actions included staying focused on different tasks (i.e., balancing between sports, studies, and work) and maintaining social life effectively. These methods were reiterated by participant VG93IM: *“First, joining that club was a big change for me. The idea was that i wanted to study sports science at the university because playing basketball in Switzerland is good, but it's not something that can support your life in terms of a salary. I was searching for a club near me and a club that was ready to accept that i don't have to train every day so that i can get time off for my studies. I negotiated with the club that i do not practice during lunch hour, and they were OK with it” (participant VG93IM).*

#### *Interpersonal skills*

At this level, the actions reported by the players involved communication and interaction with people at the club (i.e., coaches, teammates, management staff). Participant BH97IM discussed this issue of team bonding: *“I’m probably the biggest advocate for it (bonding with teammates), i think obviously in any sport but especially team sport, high pressure and where all the players have to be on the same page like in basketball, i think knowing each other within the sport and personally is one of the most important things especially throughout the season where it is very long and there are no roller coasters, there are ups and downs, if you are friends off the court, nothing will be able to break you on the court” (participant BH97IM).*

#### *Positive thinking*

The actions reported by the players at this level referred to a willingness to accept challenges through a sense of involvement, reacting to hard times positively, and using challenges to progress, as reported by participant EU94IM: *“I know the budget is small here as*

*compared to other rich clubs, yes, so sometimes we have to do those back-and-forth trips to the games. Hey, listen, I'm here to play basketball; I'm here to perform, so i don't pay much attention to how those things will affect me. What's important for me is that the club allows me to improve myself and perform better; other things are secondary. It's all about focus"* (participant EU94IM).

### *Autonomy*

Regarding autonomy, the players reported actions such as building a strategy in taking responsibility for their development. This comprised the players' belief that one's actions are self-directed, hence players feeling in control of their behaviours and goals as reported by participant VG93IM: *"It was not challenging. I had no problems with that (being away from family) because it had already been one year since i lived away from them. The time i was at (club) helped me be independent, so i didn't miss my parents. I think when i first left home aged 14 years old, there were two things, i wanted to go, but again, it is a bit hard when you think of leaving the family cocoon then once at the academy, it's not like we forget about the family, but it's all about playing basket and committing 100%"* (participant VG93IM).

## **DISCUSSION**

The aim of part 2 chapter 1 study were two-fold: (a) to identify problematic meaningful experiences encountered by players during CCT, and (b) to identify the social adaptability skills and attributes that are valuable during players' CCT. Overall, the results showed that CCT require psychosocial resources for a successful outcome and co-adaptation. This spectrum of challenges is linked to the new club's system of functioning, including coaches' attitudes, habits and types of coaching, and ways of negotiating possible relationships with teammates, including accessibility and openness to culture and club resources for training and performing. Additionally, this spectrum includes the player's family dependency or autonomy, enabling them to cope with being away from home.



Club-to-club transfers subject players to a set of perturbations that affect the microsystem, mesosystems, and essential psychosocial balance or equilibrium of a player in a club (Bronfenbrenner, 1979). These perturbations affect the players' experience because they create a discrepancy with the player's habits, knowledge or expectations (Vygotsky, 1978, 2004). Each player comes to a new club with standards or norms regarding what is possible and tolerable in a club. For example, in our results, the attitudes of a coach were surprising for participant AW94IM because he needed to prepare to encounter inequality and favoritism as manifested by the coach. In addition, participant EU94IM got frustrated because the coach expected them to do everything on the court, putting immense pressure on performance. These two examples show that each player had little experience with different coaches. Therefore, the club-to-club transfer challenges engaged at the higher level include frustration tolerance regarding acceptable norms and openness or a capacity to aggregate new knowledge and adapt. This reinforces the field of promoted activity that these players have built when interacting with a new environment (Reed, 1993; Valsiner, 1997, 2001).

The current study identified the specific actions and skills players have learnt that enable them to achieve a CCT-successful. The skills identified in the current study could be split into three groups. The first group gathered general mental strategies to face constraining environments such as goal setting, motivational or focusing attitude (Durand-Bush et al., 2001). A second group focused on skills that target learning methods, such as self-discipline or self-organization (Orlick, 1992; Vealey, 1988). At this level, the players re-centered their dispositions to act, wishing it to help them meet the coach's expectation or reduce the club's constraints for achieving in the specific context of a CCT-successful. A third group of skills is related to interpersonal skills which plays an essential role during CCT. These are also identified by Soto (2021) as key skills that are important for talent development (MacNamara and Collins, 2011) and efficient learning and coaching (Jowett, 2017).

The following discussion examines the four general categories expected to cause problematic experiences during club-to-club transfers.

#### Problematic experiences with coach and adaptations

An athlete's performance is constrained by the circumstances of competing for the availability of resources which once obtained, offer possibilities for success (Passos et al., 2016). This defines the athlete-coach relationship, which is influential during CCT and in social and athletic development (Jowett, 2005; Jowett & Poczwardowski, 2007; Smith & Smoll, 2007). Analysis of the current study revealed that players' perception of satisfaction with basic psychological needs generally mediated their relations with the coach. Fundamentally, players' perception of the club-to-club transfers and how accurate (or otherwise) this is may determine their perceptions' influence on the outcome. If players perceive the change to be more problematic than it is or underestimate the challenge they are experiencing, they may experience a more problematic process. This line of thought converges with those outlined in previous studies (Franck & Stambulova, 2019; Jowett & Poczwardowski, 2007; Jones et al., 2014; Morris et al., 2015; Olsson & Pehrson, 2014; Pummell & Lavalley, 2019; Stambulova et al., 2017).

#### Problematic experiences with teammates and adaptations

Research on sports performance (Eime et al., 2013) has already established the critical nature of the relationship between teammates. Various models, such as Interdependence Theory (e.g., Casper et al., 2007), have provided frameworks for understanding how teammates' relational dyads influence each other based on mutual rewards. The results of the current study confirm the athlete-athlete dyad whereby each individual tries to maximize rewards (happiness, social status, emotional support, and pleasure) while minimizing the costs (anxiety, negative emotions, and conflicts) (Thibaut & Kelley, 2007). It has been suggested that decreasing interpersonal interactions between teammates can disturb intra-team cohesion

(Jowett, 2017; Warren, 2006). In the current study, an example is reported by participant BH97IM, who felt that their relationship with teammates was a formal and rigid "sports friends" type of relationship. In cases where the athlete's relation with the environment is challenged or in crisis, they could adapt through seeking out opportunities and solutions to achieve CCT-successful (Passos et al., 2009, 2013). It is, therefore, significant that good relationships between teammates are established to help individuals manage stress, cultivate skill development, adapt during club-to-club transfers, and improve social relationships (Allen & Laborde, 2014; Höll & Burnett, 2014; Morris, 2013; Nunomura & Oliviera, 2013; Passos & Davids, 2015; Passos et al., 2016).

#### Problematic experiences with the club and adaptation

In an organization considering talent development a key component of its culture and values, players experience support during club transfers (MacNamara & Collins, 2011; Morris et al., 2015; Reilly et al., 2000; Williams & Reilly, 2000). Additionally, the environment where a player plays or practices can significantly influence their development (e.g., Henriksen et al., 2010; Ivarsson et al., 2018; Martindale & Mortimer, 2011). In general, the dimension of how the players felt about the club encompasses whether it led to the players' development being facilitated or challenged. An example is provided of participant JW93IM, who was concerned about compromised recoveries due to poor travelling logistics. In addition, participant SL87IM complained about broken facilities at the club, which also led to problematic experiences. Therefore, the level of uncertainty the players experienced impacted how ready they felt during a change from one club to another (Jones et al., 2014). The current study found that those players who are generally motivated and possess anticipatory positive thinking attitudes were able to adapt during CCT despite the challenges. This finding supports the Talent Identification Model, which stresses the importance of player development within appropriate environments

(Côté et al., 2006; Durand-Bush & Salmela, 2002; Li et al., 2014; MacNamara et al., 2010a, b).

#### Problematic experience of adapting to being away from family/friends

Human development occurs within a cultural system that constitutes the context and the reality of the person and how they interact with the communities and social institutions that are both proximal and distal (Tonyan et al., 2013). Players in the current study interacted in different contexts and internalized specific cultural values and practices, either facilitating or presenting challenges for CCT. As Weisner argues, multiple behavioural and mental processes are involved in attaining culture (Weisner, 2005). From this perspective, an individual's cultural mentality includes shared and distinctive beliefs, practices, and experiences that can produce cultural conflict, leading to problematic backgrounds or positive culture integration and positive experiences. The current findings support the considerable evidence in broader literature that families play a crucial role in socializing individuals into sport (Baker & Horton, 2004; Schinke et al., 2019). At this point, it has to be acknowledged the existence of players who had undergone CCT but were not necessarily living away from their families and friends. However, this limitation was considered despite the fact that most of the participants who took part in the current study were aged between 12 to 36 and those in the academies were living away from their family and friends.

To conclude, the application of the 4ES approach has led to the identification of several problematic experiences that were enacted by players in order to adapt by developing specific actions. The results underline the strength of this approach by allowing us to capture what was experienced by players in particular situations that were meaningful for them at the same time and how they managed their own experiences by developing specific actions. The current results indicate the overlaps between situation and action (i.e., situated activity; Engeström et al., 1999; Kirshner and Whitson, 1997; Reed, 1993; Sannino and Sutter, 2011) that emerge at

the meaningful level of players' experiences during CCT. It also showed that this approach could also be helpful since it has been applied successfully in ergonomics (e.g., Theureau, 2003), social science (e.g., Durand, 2013), and sports psychology research through analyses of performance (e.g., Rochat et al., 2019), competition (e.g., D'Arripe-Longueville et al., 2001; Hauw & Durand, 2007), training (e.g., Hauw, 2018), and doping (Hauw & Mohamed, 2015).

## **CHAPTER 2: INDIVIDUAL DIFFERENCES IN PROFESSIONAL SPORT NARRATION EXPERIENCE DURING BASKETBALL PLAYERS CLUB TO CLUB TRANSFER.**

### **General overview**

In part 2 chapter 1 study, i argued that club-to-club transfer requires psychosocial resources for a successful outcome and co-adaptation. Through the application of 4ES approach, i identified the problematic experiences enacted by athletes whenever they were faced with club-to-club transfer challenges. However, part 2 chapter 2 study was designed to reply to the findings of part 2 chapter 1 study by exploring further the club-to-club transfer process through narratives. This was achieved through the development of a comprehensive understanding of the psychological club-to-club transfer processes using a narrative level of McAdams' model of personality. The qualitative method approach used in the Big Three narrative framework (McLean et al., 2019) and good life stories standards (McAdams, 1996) were applied to uncover the components of the narratives of athletes during club-to-club transfers. As a result, i borrow from the current thesis' theoretical and methodological framework by focusing on McAdams' integrative personality framework with specific emphasis on the narratives and make distinctions regarding successful and unsuccessful CCT. In summary, part 2 chapter 2 study aimed to provide an account of the psychological processes involved in CCT-successful or unsuccessful by analysing the experience of professional basketball players and how they could link to the six elements of good life stories.

## INTRODUCTION

In professional sports, the athletes' career is marked by CCT. It is thus common for both clubs and players to present any successful club transfer as an achievement. In reality, while these successes are celebrated, they hide the reality of the changes at stake during failed CCT. In part 2 chapter 1 study, I argued that professional athletes who encountered CCT had to adapt to the new environment in addition to facing different challenges (e.g., club culture, being away from family and friends, teammates behaviour, and coaches' expectations). Thus, the achievement of successful CCT is an important concern and remains a challenge for clubs as well as players. However, the psychosocial attributes that underlie these club-to-club transfers and their success despite their salience have been overlooked (Owiti et al., 2020; Vaeyens et al., 2008).

In part 1 chapter 1 which was concerned with the ontological positioning of the current thesis, it was stated that changes in CCT corresponds to "micro-phases" during a professional career. A study of these specific micro-phases and their effects on success or failure requires taking into account the dynamics of the relationship between the player and his or her environment. The 4ES approach suggests that the relationship with the environment for a player is built by his or her activity (e.g., Hauw, 2018; Rowland, 2010). In other words, during a club-to-club transfer, the players' new world of feelings, thoughts, emotions, actions, or relationships emerge from the types of connections that players are able to enact. At this point, there are two components that are at stake during the CCT process; (i) environmental characteristics- e.g., coach, teammates), and (ii) the players disposition to interact with the environment.

Literature suggests that psychosocial resources that are at the core of the interaction with the environment and impact CCT-successful may lie in various constructs including personality dispositions, skills and experience and one way to consider them is to apply the

Identity Multilayer model of McAdams (1996). The model was presented in part 1 chapter 2 of the current thesis and it characterises a person's identity through three levels: (i) dispositional trait constructs i.e., the Big Five (ii) personal actions construct (PAC's) i.e., invokes skills such as personal strivings, motivations, goals, self-regulation, and (iii) narratives/life stories i.e., constructed from experience to give meaning to oneself (McAdams, 1996; McAdams & Olson, 2010). In the current study, i specifically focus on the narratives (level 3) in understanding the psychosocial resources involved during CCT. This is due to the fact that narratives are integrative, evolving and further interprets the reconstituted past, perceived present, and anticipated present (McAdams, 1996; McLean et al., 2019). In fact, a number of authors have advocated for the use of narratives in the study of life transitions (McAdams et al., 2006), athlete retirement (Carless and Douglas, 2009), career transitions (Ely and Ronkainen, 2021), doping transition (Hauw and Bilard, 2012), or associated changes in well-being (Adler and Hershfield, 2012).

McAdams (1996) also presented in his integrative framework emphasis on the good life stories, meaning internally coherent, makes for a continuous plot line in which early events “cause” or logically leads to later events. At least six standards of good life story forms have been identified as already described in part 1 chapter 2 (e.g., *coherence, openness, credibility, differentiation, reconciliation, and generative integration*). McAdams model (1996) does provide a substantial contribution by identifying components of the narratives that included in situated way various psychological aspects we might consider for CCT-successful. Additionally, in the current study, i apply a reframed version of the model which bears three factors of life narratives: Motivational and Affective Themes (MAT), Autobiographical Reasoning (AR), and Structure (S) aspects (McLean et al., 2019).



Hence, the aim of this study was to provide an account of the psychological processes involved in CCT and their successful club to club transfer components (CCT-successful) by analysing the experience of professional basketball players.

## **METHOD**

The same data set obtained in part 2 chapter 1 study were reused in the coding and analysis of the current study (see part 1 chapter 3-using same data for several studies).

### **Narrative Coding**

During coding, the recommendations of Syed and Nelson (2015) for establishing and maintaining reliability as described under the methodological framework in part 1 chapter 3 were adhered to. A top-down approach using validated and theoretically based coding protocols was applied to find common themes in the narratives (Syed & Azmitia, 2010). Each participant's narrative experience was coded by three independent coders using the functional model and coding system (McLean et al., 2019) (see Table 3). For each component, the three coders learned the specific coding scheme by reading and discussing the coding manual (McLean et al., 2019). Moreso, the three coders used a predetermined set of narratives during the coding training phase. During this phase, the three coders discussed each narrative code in depth. After training, a previously unexamined subset of the narratives, approximately 10 – 25 %, were coded independently by each coder to compute a cross-system reliability. Once reliability was established, all three coders scored the rest of the data set. Coders were trained on a sub-set of narratives, completed reliability on a different subset, and then coded the remaining records. Coders met to compare and resolve discrepancies or discuss complex cases. There were two components (i.e., exploratory processing and change connections) out of ten that had differences, and this was resolved through discussion that finally led to higher intercoder reliability. A rating scale (quantitative approach) to code the components to link the narratives (qualitatively) was adopted. Thus, focusing on the records, i was primarily concerned

with the culture nearest to the person. However, the scores allowed me to move away from the person while reducing my way out of the singularity (McAdams, 1996; McLean et al., 2019).

**Table 3**

*Narrative components coding (Adapted from McLean et al., 2019).*

Dimension	Definition	Range	Reliability/ICC
Exploratory processing	Defined as the extent to which a person openly analyses and explores the meaning of the past events in order to understand their internal impact and potential to change the self.	1 – 4	.807
Meaning-making	Is the degree to which the participants narrate self-knowledge derived from reflecting on the past experiences.	0 – 4	.914
Change connections	Involved both <i>induce</i> -a connection in which a change in the self was caused by an event. And <i>reveal</i> which involved a connection when an experience brings to light a previously unknown aspect of self.	0 – 1	.861
Facts	Facts were described as statements that could be objectively verified.	0 - 3	.806
Contextual coherence	Was described as a dimension that places the event in time and location.	0 – 3	.812
Chronological coherence	Captured the degree to which the narrative was temporarily organized.	0 – 3	.850
Affective tone	Was described as a dimension that captures the overall emotional tone of the narrative.	1 – 5	.867
Contamination	Defined as a narrative which begins in a positive state and ends in a negative state	3-2, 2-1, 3-1	.775
Agency	Are narratives concerned with autonomy of the protagonist	0 – 4	.850
Communion	Defined as narratives concerned with connection, love, and friendship.	0 – 4	.935

After interviewing the twenty participants, the first author noted that no new theme(s) were emerging, suggesting a degree of saturation had been attained (Guest et al., 2006).

Reliability was assessed by averaging the correlations between the three coders and calculating the Interclass Correlation Coefficient (ICC) resulting into significantly high scores (see Table 3).

The following excerpt from a participant's narrative about challenging encounters while away from her family is an example to give insight into how the coding task was carried out.

*"Being here in Switzerland is like the toughest situation i have been through because of the time difference, which is 7 hours behind USA time. So, like in the afternoon, when I'm about to go to my practices, that's probably the time they're waking up and seriously being by myself in the house. The house is so gloomy, and we also have much free time. I didn't have much free time in my previous team, but here, if I'm not in the gym for 90 minutes, then I'm at my house taking a nap or watching Netflix for 7 hours. So, i feel I'm secluded, i can't hang out with my younger teammates or communicate with my family due to the time difference. It's very tough; I'm sacrificing much to further my career. I have to stay positive- participant- participant CD94IF".*

Table 3 provides a detailed description of the coding scores. For the above example, exploratory processing scored two because the athlete minimally explored the meaning of past events, including internal thoughts and feelings surrounding the event. A score of 2 was attributed to meaning-making because the narrative described some growth in "staying positive," but the change's specifics were unclear. Of the change connections, the participant scored 0 in both "reveal" and "induce components," respectively, since there was no change in the self, and finally, no new aspect of self was featured in the experience. Each structure component (e.g., facts, context, and chronology) scored 3 since the event indicated time and location, was temporarily organized, and the narrative showed clarity. Affective tone scored 2 due to the negativity of the experience. There was a presence of contamination in the record, moving from 3 to 1, as the athlete seemed to have been in a positive state initially but finally

ended up in a negative state. Regarding agency, a score of 4 was assigned because the protagonist could affect their own life and initiate changes independently, while communion scored 0 since the athlete felt utterly disconnected. The overall participants' Mean/SD scores relating to the ten narrative dimensions are presented in Table 4.

#### Data analysis

Statistical analysis was performed using IBM SPSS Statistical Software (v. 25). Data are reported as mean  $\pm$  standard deviation. A Multivariate Analysis of Variance (MANOVA) was used to compare the narrative component results of the participants. The dependent variables were based on the narrative components (10-items) while the independent variable was based on the total outcome of the participants scores. An Exploratory Factor Analysis (EFA) was run to determine the commonalities between the narrative elements. To draw a general conclusion from specific observations and the general population, an independent *t*-test was carried out against results from the current study and McLean et al. (2019) study (sample 1 memory 3). To identify how the participants performed during each club transfer, a club-to-club transfer score was computed by aggregating the easy, average, and complicated scores, which were then linked to the narrative components. A further bivariate correlation analysis using Spearman's correlation coefficient was run to determine associations between the narrative elements and level of adaptation in the club-to-club transfer. The level of significance was set at  $p < .05$ .

### **RESULTS**

The results are provided in two parts: (i) descriptive statistics of my sample and comparison with the general population, and (ii) identification of narrative components involved in CCT-successful or unsuccessful. A visual inspection of the histogram showed that not all data were normally distributed. Further kurtosis and skewness results confirmed that the

data were not normally distributed. Levene's test also confirmed that some data violated the variance assumption of homogeneity.

(i) Descriptive statistics of my sample and comparison with the general population

On average, results presented in Table 4 showed that participants in the current study experienced richer narratives in most dimensions than the general population in McLean study. This difference was significant  $t(17.08) = -1.48, p < 0.05$  and represented a medium effect size  $r = 0.33$ . In particular, exploratory processing, meaning-making, agency, and communion were highly developed in my sample. This excerpt illustrates these dimensions in my sample data:

*"Luckily, i did not break, and this is not just about my career step but life in general. I'm an open-minded person full of curiosity, which allows me to be flexible in different situations. Yes, sometimes it can be difficult to adapt quickly enough, these adaptations take time. They may take time, but you must sacrifice your time, be mentally prepared, try to join all the pieces together and be autonomous. I'd rather not waste my energy trying to be rigid to change. Do you know how often i have had to do things i didn't want to do in life? No one will babysit you, you must face the transition challenges and take it to the next level- participant JP96IM."*

The athlete presented a rich narrative that openly analysed and explored past events while gaining insights for behaviour change. Additionally, the athlete reported high autonomy and connection concerns by initiating changes and some degree of control throughout his experience.

**Table 4**

*Comparisons between players' general scores with McLean et al., (2019) sample scores (Mean/SD)*

Item	Current study	McLean	T-test	Cohen d
Exploratory Processing	2.86(0.87)	1.69(0.84)	$t = 6.11 p < .000$	1.37
Meaning Making	2.18(0.88)	0.65(1.13)	$t = 5.99 p < .000$	1.51
Change Connection	0.33(0.63)	0.59(0.62)	$t = -1.84 p < .066$	-0.42
Facts	2.49(0.75)	2.01(0.80)	$t = 2.64 p < .008$	0.62
Contextual Coherence	2.51(0.71)	2.50(0.79)	$t = .50 p = .956$	0.01
Chrono Coherence	2.35(0.93)	2.76(0.53)	$t = -3.29 p < .001$	-0.54
Affective Tone	3.75(0.97)	2.41(0.77)	$t = 7.57 p < .000$	1.53
Contamination	31.00(0.60)	0.32(0.47)	$t = -.09 p = .926$	-0.02
Agency	2.20(1.48)	1.07(1.19)	$t = 4.13 p < .000$	0.84
Communion	3.11(0.92)	1.51(1.24)	$t = 5.71 p < .000$	1.47

*Note.* Chrono coherence = chronological coherence

(ii) Identification of narrative components involved in CCT-successful/unsuccessful.

The overall club-to-club transfer experiences are presented in Table 5. The results showed a generally high level of assessment regarding the CCT-successful (Mean = 2.41, SD = 0.63). There were differences between the players on the general profile of their assessment stories. Some participants presented high scores in their accounts of club-to-club transfers (e.g., AW94IM) while others remained at mid or low level (e.g., JW93IM). In addition, various patterns in stories of club-to-club transfers emerged. Some players assessed their club-to-club transfers with a global stable score (high and low) (e.g., TD87IM, MF99IF, respectively), while others identified incidents during their club-to-club transfers (e.g., GL91M). In the face of this diversity, the group was split into two using the overall mean of the CCT-successful (Mean = 2.41). Therefore, any score above or below the norm was considered either CCT-successful or CCT-unsuccessful respectively.

**Table 5***Participant scores during each club-to-club transfer*

Participant	T1	T2	T3	T4	T5	T6	T7	T8	T9	Mean	SD
AW94IM	3	3	3	3	3	3	3	3		3.00	0.00
SL87IM	1	2	2	3	2	2	1			1.86	0.69
MM93IF	2	1	2	2						1.75	0.50
CD94IF	1	1	1	1	2	2	2			1.29	0.49
MF99IF	1	1	1							1.00	0.00
VG93IM	2	3	2	3	3					2.60	0.55
VP98IM	3	3	3							3.00	0.00
SK83IM	3	2	3	3	2	3	3	3	3	2.78	0.44
SC92IM	2	2	2							2.00	0.00
LP93IM	2	3	3	3	3	2	3			2.71	0.49
JW98IM	3	3	3							3.00	0.00
JW93IM	2	1	2	2	1	2				1.67	0.52
JH95IM	3	2	3							2.67	0.58
JP96IM	2	3	3							2.67	0.58
GL91IM	2	2	1	2	3	2	2	1		1.88	0.64
EU93IM	3	3	3							3.00	0.00
BH97IM	3	3	3	2						2.75	0.50
AH95IM	2	3	3	2	3	3				2.67	0.52
AR88IM	3	3	3	3	3	3				3.00	0.00
TD87IM	3	3	3	2	3	3	3	3		2.88	0.35

*Note.* T = Transfer, Scores in Easy transfer = 3 Average transfer = 2 Difficult transfer = 1

The results showed that narratives in the CCT-successful were richer (Mean = 2.83, SD = 0.16) as compared to reports in the CCT-unsuccessful (Mean = 1.63, SD = 0.36 (see Table 6).

**Table 6***Participant scores within the CCT-successful versus CCT-unsuccessful group*

Participant	CCT-s (>2.41)	Mean/SD	CCT-u(<2.41)	Mean/SD
AW94IM	3.00	0.00		
SL87IM			1.86	0.69
MM93IF			1.75	0.50
CD94IF			1.29	0.49
MF99IF			1.00	0.00
VG93IM	2.60	0.55		
VP98IM	3.00	0.00		
SK83IM	2.78	0.44		
SC92IM			2.00	0.00
LP93IM	2.71	0.49		
JW98IM	3.00	0.00		
JW93IM			1.67	0.52
JH95IM	2.67	0.58		
JP96IM	2.67	0.58		
GL91IM			1.88	0.64
EU93IM	3.00	0.00		
BH97IM	2.75	0.50		
AH95IM	2.67	0.52		
AR88IM	3.00	0.00		
TD87IM	2.88	0.35		
<b>Overall Mean/SD</b>	<b>2.83</b>	<b>0.16</b>	<b>1.63</b>	<b>0.36</b>

*Note.* CCT-s = CCT-successful ( $N=14$ ) group had scores greater than 2.41.

CCT-u= CCT-unsuccessful ( $N=6$ ) group had scores equal to or less than 2.41.

In comparing results from each participant, Pillai's trace reported a significant difference between participants  $V = .32$ ,  $F(4, 54) = 2.56$ ,  $p < .05$ . Separate ANOVA results also revealed significant differences on all narrative components except on contamination  $F(19, 77) = 1.21$ ,  $p > .05$ .

An Exploratory Factor Analysis (EFA) was conducted on the ten items with orthogonal rotation (varimax). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis (KMO = 0.79), and all the KMO values for individual items were  $> 0.70$ , which



is well above the acceptable limit of 0.5 (Field, 2013). A Bartlett's test of sphericity  $\chi^2(45) = 441.854, p < .001$ , indicated that correlations between items were sufficiently significant for EFA. An initial analysis was run to obtain eigenvalues for each component in the data. Three components had eigenvalues over Kaiser's criterion of 1 and, in combination, explained 42.82 % of the variance. However, after component rotation, the first component only explained 27.55 % of the variance. Table 7 shows the rotated component matrix.

**Table 7**

*Exploratory factor loadings (rotated component matrix)*

Component	1	2	3
Contextual coherence	0.872		
Chronological coherence	0.814		
Facts	0.799		
Affective tone		0.826	
Contamination		-0.819	
Agency		0.722	
Communion	0.425	0.633	
Meaning making			0.758
Change connection			0.747
Exploratory processing	0.458		0.651

In order to examine the correlation between the narrative components and the level of adaptation during club-to-club transfer results are presented in Table 8

**Table 8***Narrative components correlation coefficients*

	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Club to Club Transfer	2.41	0.63										
2. Exploratory Processing	2.90	0.86	.738**									
3. Meaning-Making	2.36	0.75	.559**	.382								
4. Change Connection	0.33	0.63	.318*	.456*	.786**							
5. Facts	2.49	0.75	.544**	.160	.339*	.448*						
6. Contextual Coherence	2.51	0.71	.373**	.238	.573**	.467**	.059					
7. Chronological Coherence	2.35	0.93	.435*	-.364	.564**	.518**	-.149	.593**				
8. Contamination	0.31	0.60	-.549**	-.127	.403**	.262**	-.132	.556**	.719**			
9. Affective Tone	3.75	0.97	.012	-.248*	-.054	-.059	.086	.060	-.036	-.160		
10. Agency	2.20	1.48	.131	.048	.445**	.404**	-.055	.470**	.389**	.382**	.335**	
11. Communion	3.11	0.92	-.611**	-.029	.488**	.497**	.113	.529**	.427**	.569**	.272**	.602**

*Note.* \*\*. Correlation is significant at the 0.01 level (2-tailed)

\*. Correlation is significant at the 0.05 level (2-tailed)

Results showed the level of adaptation during club-to-club transfer correlated positively with exploratory processing, meaning-making and fact narrative components, including contextual coherence. Further analysis revealed that contamination and communion narrative components were negatively related to the level of adaptation during club-to-club transfers.

The narrative components that correlated with the level of adaptation during club-to-club transfers (for example, exploratory processing, meaning-making, and facts) were identified. These narrative components from the raw data (scores from easy, average, and difficult club-to-club transfers) were further traced to gain more insight by comparing the scores from both the qualitative and quantitative results. An example in this case was an extreme score within the easy club-to-club transfer group (Mean = 3.00, SD 0.00) when linked back to the narrative component, indicating that the athlete's narrative was very rich in exploratory processing, meaning-making and contained facts as shown in this example:

*"The coach and i probably had more fights than any other coach i ever had, but then again, i had full respect for her; she was my first female coach in my whole career. We butted heads on different things more so because it was the first time that i had to adapt to "No, you are not going to do things your way just because you are the best player, but you are still going to do things my way and act as i ask you to. I first took a step back. The biggest thing was trying to be open-minded, so whether it was something big or small, i would ask myself why she wanted me to do this. She wants me and the team to succeed, her job is in the hands of these 18 to 23 players, so there has to be some reason why she is asking me to do this. So, being open and asking myself, "Why?" helped me adapt to it- participant AW94IM".*

In this case, the athlete is grappling with the complexity of the club-to-club transfer challenges, exploring its meaning and actively interpreting its transformative impacts. The athlete then connects the turning point to some aspect of or understanding of the self by associating it with being open-minded. The narrative is highly organized, structurally sound

and objective. Similar observations and relations can be linked to good life stories, with the athlete showing the extent to which the club-to-club transfer challenge makes sense. There is also characterization of the club-to-club transfer-successful where compelling plots with the coach build up tension to a climax after a resolution is achieved.

In reporting on the lower scores within the complex club-to-club transfers (Mean = 1.29, SD = 0.49) and linking it back to the contamination and communion dimension, the following raw data example gives insight into the club-to-club transfer challenges experienced by the athlete.

*"Adapting to the new coaching style was not easy. I felt like they were always asking for much more than just effort. It wasn't just your physical but also at school, your grades had to be good, what else? His main thing was grades, not even grades, he was just horrible (the coach). Culturally, he was like different. I thought he didn't want to work with me at all. I felt like he was against me, honestly. He wasn't flexible with my schedule. And that's why it was too much at some point, and i had to quit the team- participant CD94IF".*

As concerns the context above, the communion component captures problems of interpersonal connection, expressing desires for love, friendship, and community which the athlete lacks. Additionally, the contamination component, which involves moving from good to bad, led to a negative transformation, hence the athlete quitting the team.

*"I went through the hardest summer holidays training myself correctly, so, when i joined the club, in the beginning, i wasn't playing, then later i would sometimes play, but it wasn't regular. Unfortunately, i didn't have the coach's confidence, and these things happen. That wasn't easy because i had signed for two years. So, finding myself on the bench with no playtime was negative and i hard to accept the fact. I must admit that it was a lot of frustration. You arrive at the team, and you have a lot of self-confidence, you tell yourself that it will be*

*your season and that you will have fun. Unfortunately, it's the opposite. It's difficult to manage those situations- participant GL91IM".*

The above narrative is also an example of a good story but with bad episodes. The club-to-club transfer is fascinating and indicates the athlete's rapidly involved reinterpretation of this event and its meaning for the story. The story conveys a moderately negative emotional tone with conflicting motivations and feelings, suggesting a rich narrative. In terms of the good life story, it builds compelling plots leading to tension. Unfortunately, reconciliation between the conflicting forces is not achieved.

An essential function of club-to-club transfer is being able to adapt both at an individual and environmental level. The athlete should be able to openly analyse and explore internal thoughts and feelings to help with behaviour change (i.e., exploratory processing). Similarly, the club should offer a healthy environment to facilitate the enactment of CCT-successful. Therefore, since narratives constitute experiences and not competent skills, the raw data were looked at in search of the athlete's experiences, as shown in the following examples.

*"As soon as i arrived, they made a big effort to integrate me into the club. Anytime i needed help, they were always ready to help. The club management would call to determine if all was going well. All these supports helped me a lot because finally, it was not like i was alone- participant GL91IM."*

*"The structure was inferior, it was tough because there was no staff or one to talk to or approach. I remember we had to pay for taping bands for the wrists and ankles. The bus trips were long for away games since we had to make back-and-forth trips. This was tough on our recoveries- participant JP96IM."*

*"You have to expect those tough moments, those challenging times when you have to make tough decisions. You must be ready for change, which comes with how ready your mind is regarding being flexible to change- participant MM93IF."*

## DISCUSSION

This study aimed to provide an account of the psychological processes involved in CCT-successful or unsuccessful by analysing the experience of professional basketball players and how they could link to elements of good life stories. The current study is the first to document athletes' experiences using the Big Three Narrative framework and was grounded on the description of the nature of narrative regarding athlete's enaction when encountering CCT.

Overall, the participants experienced richer narratives  $t(17.08) = -1.48, p < .05$  than the general population in McLean et al. (2019) study. In comparing results from each participant with corresponding narrative component, a significant difference was reported  $V = .32, F(4, 54) = 2.56, p < .05$ . Separate outcome tests also revealed significant differences on all narrative components except on contamination  $F(19, 77) = 1.21, p > .05$ . On average, CCT-successful presented (Mean = 2.83, SD = 0.16). In contrast, CCT-unsuccessful reported low score (Mean = 1.63, SD = 0.36). Intercorrelations between level of adaptation during CCT and the narrative components also revealed positive associations with exploratory processing (54 %), meaning-making (31 %), and facts (30 %). However, contamination and communion revealed negative associations (30 % and 37 %, respectively) with the level of adaptation during CCT.

The current study results show that these club-to-club transfers impacted athletes in terms of their experiences forming narratives. The participants were able to be discriminated by the narratives and the "quality" of life stories they told. Additionally, the individual differences on how the stories about one's essential experiences were told reflected on both the enaction of CCT-successful or unsuccessful and its predictability. Thus, there are several potential reasons for this result. First, people make meaning of their lives through narratives, and each person is expected to employ characteristic strategies and procedures for meaning-making (McAdams, 2006; McAdams et al., 2006). Second, each participant draws from

experiences of their own life, a pool of autobiographical memories and images that they structure to fit their meanings (Tomkins, 1987).

In examining an array of results, it can be reported that participants in the current study experienced richer narratives as compared to the general population in the McLean et al. (2019) study: exploratory processing (Mean = 2.86, SD = 0.87 versus Mean = 1.69, SD = 0.84) and meaning-making (Mean = 2.18, SD = 0.88 versus Mean = 0.65, SD = 1.13) respectively. This finding is not surprising since sports environments involve dynamic interactions between teammates, coaches, and staff in addition to perceived club-to-club transfer challenges, barriers, resources, and high-stake performance outcomes (Diehl et al., 2020; Poczwadowski et al., 2014). First, athletes in a sporting environment must create insights from their experiences while exploring meaning and actively interpreting their transformative impacts during club-to-club transfers. Second, the current study involved elite athletes who had played at the highest levels, unlike the general population. They had been exposed to and had the opportunity to interact with critical tasks and environmental constraints that promote the enactment of exploratory behaviours. Indeed, in the best circumstances, elite sports can provide many attractive seeking opportunities that lead to adaptive behaviours. For example, elite teams organize to present the new players to the public and press. There are several processes within the teammate's managed team buildings. They consider opportunities presented in our socio-cultural practices and are related to an individual's ability to use available information to regulate and organize adaptable behaviours (Rietveld & Kiverstein, 2014). Therefore, differences between the enactment of CCT-successful and CCT-unsuccessful might be explained by these types and the quality of opportunities provided by the clubs.

The current study found an interpretable association in which club-to-club transfer narratives were positively correlated with the enactment of exploratory processing. This association suggests that when athletes engage in experimental processing, they explicitly

focus on an effort to explore, reflect on, or analyse a problematic experience with an openness to learning from it and incorporating a sense of change into the good life story. Exploring difficult experiences would mediate between those reported challenges and club transfers. In other words, athletes who described themselves as finding club-to-club transfer easy in their experiences told more exploratory stories. McLean et al. (2007) and Pals (2006) have both independently shown that people who encounter difficult experiences but narrate them in a distancing manner rather than exploratively limit their personal development.

The current study results showed that successful athletes have enacted motivations for their adaptive behaviours during CCT (e.g., flexibility). The participants narrated their club-to-club transfer challenges with openness, coherence, and credibility, which are ingredients of a good life story. Moreover, the participants exhibited flexible behaviours both at individual and organizational levels, further reflecting various levels of athlete-environment interactions (Bronfenbrenner & Ceci, 1994). These results showed how important an athlete's environment is in facilitating the enactment of CCT-successful.

The current findings also corroborate previous studies within organizational socialization, which argued that, in the face of career transitions, it is not surprising that flexibility is widely acknowledged as a key competency for today's employee (Chan & Schmitt, 2000; Griffin & Hesketh, 2003; Hill et al., 2008). Following Tharenou and Kulik (2020), it is expected that within the club, a skilled "transitioner" is presented as able to align with the club's activities, socialization process and overall workplace experience. This finding indicates that sports organizations must provide favourable environments to help athletes prepare for CCT challenges.

Interestingly, a negative association between the level of adaptation during club-to-club transfer and contamination was reported, which may be related to the athlete's inability to benefit from adverse events. This finding is hardly surprising; when a disruptive event such as



a club-to-club transfer challenge happens, athletes may be motivated to resolve the negativity or disruption by narrating the experience as a provoking insight. The current finding suggests that attempting to minimize negative emotions and avoiding thinking about them may lead to viewing CCT as challenging. However, it becomes clear that athletes who find club-to-club transfers easy can engage in negative emotions and embrace the challenges. This leads to a positive association between contamination and the level of adaptation during club-to-club transfers. In support of this finding, early results also indicate that people report more meaning-making seeking goals when talking about adverse events than positive events (King & Raspin, 2004; King et al., 2000; McLean, 2005; McLean & Pratt, 2006; McLean & Thorne, 2003; Pals & McAdams, 2004).

The current study results showed that the “fact narrative component” was positively associated with the level of adaptation during club-to-club transfer. In explaining this finding, one crucial measure of success in drawing meaning from a good life story is the structure of the personal narratives we construct about these events (Linde, 1993; Sparkes & Smith, 1999). Various studies have argued that factual narratives are associated with better memory, deeper self-understanding, more effective communication, and stronger identity (Fivush, 2008; Fivush & Nelson, 2004). Indeed, an athlete who can narrate a challenging club-to-club transfer experience with a clear recall may lead to that event becoming a crucial self-defining memory. This memory of a strengthened self is an important part of the narrative identity that is enacted and that enhances resiliency as new club-to-club transfer challenges arise (Singer et al., 2013; Singer & Salovey, 1993).

Another potentially fruitful area that could explain the athlete's CCT-successful can be borrowed from a club's proactive approach. People are not always passive recipients of environmental constraints on their behaviour, however, they enact intentionally and directly exchange their current circumstances (Crant, 2000). Therefore, proactive athletes (CCT-

successful) will always identify opportunities, which can be through exploratory processing and meaning-making, agentic and act on them while persevering until meaningful change occurs. On the other hand, less proactive individuals (CCT-unsuccessful) are passive and reactive, preferring to adapt to circumstances rather than change them. Taken together, athletes whose propensities with a bold personality may enact a responsible attitude for their career development, constantly adding new skills and taking action in advance of potentially stressful events, as reported by the participants in the current study (Hristovski et al., 2006; Seifert et al., 2014c; Withagen et al., 2012).

It has been argued that the propensities to perform successfully in a job can best be predicted by past performance in conditions that are similar to the job as possible (Chan & Schmitt, 2000; Pulakos et al., 2000). This can best be supported by the fact that life stories are internalized in becoming an experience embedded, embodied and enacted. And these evolving narrative of the self-incorporating these reconstituted past, perceived present, and anticipated future as propensities for success (McAdams, 1992, 1996). Thus, adapting to novel situations or dynamic and changing environments during club-to-club transfer requires the athlete to pull resources previously applied in similar circumstances. The athletes can explore the meaning of the previous challenging club-to-club transfer in order to understand their impacts and potential to CCT- successful. Practically, if past CCT-successful experiences can predict future CCT-successful experiences, then teams and clubs need to provide opportunities that challenge athletes to cope with the changes (i.e., in terms of athlete-environment). Therefore, athletes have to recall past performance and simultaneously anticipate future needs as concerns club transfers if they were to achieve CCT-successful.

The agency component which is concerned with the autonomy and the motivation to impact and influence others or one's life circumstances was examined. The participants in the current study reported higher agency scores (Mean = 2.20, SD = 1.48) as compared to McLean

et al., (2019) study (Mean = 1.07, SD = 1.19). However, the agency component reported no correlation with the level of adaptation during club-to-club transfer. These results could be interpreted by considering that agency component is already embedded within the sporting domain unlike the general population. Having goals and motives (e.g., agentic behaviour) has consistently been shown to enhance performance in sports (e.g., enhancing motivation and self-confidence) (Burton et al., 2010; Gould et al., 2012; Kristiansen et al., 2012).

The current results also showed that communion component was negatively related to the level of adaptation during club-to-club transfer. Indeed, it appears that the balance between athletes' level of adaptation and compliance (communion) (Lilgendahl and McAdams, 2011) was missing. Communion component demonstrates how athletes enact their inclusion in the team when moving between clubs. Moreover, because CCT-successful is partly composed by well-being and already embedded within athletes, this result is not completely surprising knowing that higher level of communion is associated with higher well-being (Adler & Hershfield, 2012; Adler et al., 2008).

## **CHAPTER 3: THE INITIAL DEVELOPMENT AND VALIDATION OF THE SOCIAL ADAPTABILITY SKILLS QUESTIONNAIRE-SASQ**

### **General overview**

In part 2 chapter 1 and 2, i identified a range of psychosocial resources known as social adaptability skills (SAS) which contributed to enacting successful or unsuccessful CCT outcomes. In addition, the two chapters identified a need for talent identification and development programs to consider and integrate the skills necessary for changing clubs and adapting to new environments. However, no existing formulated methods or established structures and tools to measure SAS in sports exist. Therefore, part 2 chapter 3 study was focused in developing and validating a questionnaire to assess the propensities of young athletes to enact SAS. Such an instrument is needed to provide regular feedback and refinement and to identify areas requiring immediate attention, improvement, or maintenance. As a result of these findings, training programs could be formulated to improve athletes' SAS performance by identifying the challenges they face and including specific training to help enhance those weaknesses. Finally, validating this questionnaire would contribute significantly to the international research community focusing on talent development. To summarize, the initial development and validation of a questionnaire designed to assess the SAS of young athletes is outlined.

## INTRODUCTION

Athletes change clubs over the course of their careers and this has led to questions about how these changes affect their career development. However, the effects of these CCT moves on a players' equilibrium and their sporting lives are not well known (Owiti & Hauw, 2021). While professional athletes may be capable of showing adequate resources required during CCT, this may not be the case with young talented athletes due to lack of psychosocial resources and some basic skills (Owiti & Hauw 2021). In part 2 chapter 1, i presented a list of psychosocial skills necessary for a CCT-successful to be achieved (example: positive thinking, goal setting skills, self-confidence skills etc). However, in talent development research programs (e.g., Collins et al., 2012; MacNamara & Collins, 2011; Martindale et al., 2010) and especially those focused on team sports where club changes are usual (Owiti & Hauw, 2021), this issue has not been taken into account. Therefore, i sought to develop an instrument to assess the psychosocial skills of young players that could be useful for future CCT-successful. It was hypothesized that this instrument could also be used to design individualised programs to assist in developing these psychosocial skills in professional team sports.

The contribution of psychological skills to athletic talent development has been increasingly examined in sport psychology. This has led to the identification of general competences such as grit (Duckworth et al., 2007), a growth mindset (Dweck, 2017), mental toughness (Jones et al., 2002), belief in achievement (Siegle et al., 2017), and general positive attitudes (Mills et al., 2012). In addition, MacNamara and colleagues drew up a list of ten key skills which they referred to as (PCDEs) and it included positive or adaptive characteristics such as goal setting, self-organization, commitment, imagery use, self-awareness and others (MacNamara et al., 2010a, b). However, all these psychosocial skills are "situated resources", meaning they are attuned to specific and typical situations like training, competing, or relationships with coach or parents (Gesbert & Hauw, 2019). I therefore saw a need for a

specific instrument that is situated, short, and quickly and inexpensively applied to measure the skills deployed during CCT.

Since it is generally expected that young athletes dispose the propensities to enact the required psychosocial skills for sports participation and the pursuit of excellence. Yet there is a need for talent development programs to also consider the skills necessary for changing clubs and adapting to new environments. In part 2 chapter 1, having identified the key psychosocial skills needed to adapt to different situations during club-to-club transfers, the next step was to develop a psychometrically sound measure of these skills with an ultimate goal of designing and testing a learning program for athletes.

In conceiving the questionnaire, four studies were carried out from the initial development stage to the final validation stage. In study 1, the questionnaire items were generated. Consequently, the process was followed by item justification from the experts, with cognitive interviews carried out on participants, and finally administering a pilot study on the first version of the questionnaire. In study 2, an exploratory factor analysis was performed with the aim of reducing the larger number of variables to smaller variable set and also to explore the underlying theoretical structure of the questionnaire. In study 3, a confirmatory factor analysis was performed to test how well measured variables represented the questionnaire constructs. In addition, a latent class analysis was performed to lend support to the confirmatory analysis results. Finally, in study 4, the Social Adaptability Questionnaire (SASQ) values were standardised by generating scores that ranked the measured factors and also providing distribution profiles in order to increase the questionnaire's reliability and generalisability.

## STUDY 1: GENERATING ITEMS

Following the findings in part 2 chapter 1 which comprised four major themes of problematic meaningful experiences athletes face during CCT (i.e., with the coach, teammates, being away from family and friends, and the club). The initial item generation was therefore based on the four major themes mentioned above and it resulted in a preliminary list of 55 items representing the 14 SAS sub-themes: (i) problematic experiences due to the coach (e.g., obeying orders, language barrier, inequality/favouritism, difficulty combining sports and other life domains, pressure to perform, and lack of structured trainings and low-level competitions (ii) problematic experiences due to teammates (e.g., respect, language barrier, and negative perception of others) (iii) problematic experiences due to the club (e.g., poor facilities and logistics and lack of support) (iv) problematic experiences due to being away from family and friends (e.g., distance and language and culture shock barrier).

### Item justification

#### *Expert panel*

An independent panel of six experts (PhD and postdoc students in sports psychology) reviewed the initial list of 55 items (Fraenkel & Wallen, 2009; MacNamara & Collins, 2011; Wiersma, 2001). The six experts formed part of a laboratory team mainly focused on talent identification and development and coaching. In addition to their expertise in psychological research, applied talent development, and coaching, most of them had taken part in publications concerning athlete's club-to-club transfers and were familiar with the SASQ aims and rationale. The 55 items were generated from the interview data which was carried out in English and formed part of the questions generated from the 14 sub-themes presented in Figure 5. Each expert rated all item's content relevance and representativeness on a scale from 1: *not at all relevant* to 5: *completely relevant*. Items that were rated 4: *relevant* or less were discussed by the whole panel (MacNamara & Collins, 2011). At the end of this stage, some of the items

were marked for deletion. The first panel review resulted in the rewording of several items ( $N = 41$ ) due to grammatical errors and comprehension issues. A total of ten items were deleted and five additional items were added. Furthermore, the five items that were added formed part of the interviews and not from the expert panel. A second expert panel was constituted and asked to follow the same procedure and this resulted in the rewording of several items ( $N = 25$ ) and deletion of several others ( $N = 14$ ). As a result of this stage, 36 items were included in the SASQ.

### *Cognitive interviews*

During the third stage, cognitive interviews were conducted to check for misunderstandings, unclear questions, inconsistencies, and inappropriate options (Conrad & Blair, 1996; Beatty & Willis, 2007). A written informed consent was obtained from all participants (and parents/guardians when participants were under 16). Six young athletes in development were interviewed, reflecting the intended target population of the questionnaire (there were two participants in each age group: 12-14 years, 15-17 years, and 18-21 years). Two participants competed nationally, whereas the remaining four competed at a regional level in their respective sport (football  $N = 2$ ; basketball  $N = 2$ ; handball  $N = 1$ , and ice hockey  $N = 1$ ).

Cognitive interviewing was conducted applying the principles developed by Beatty and colleagues (Beatty and Willis, 2007) using think aloud protocols, reinterpretations, observations with proactive and reactive verbal probing. Individual interviews were conducted with the participants while they completed the SASQ. Since this was a rather elaborate questionnaire (36 items), a short break after each page was allowed for the participants (more or less after 5 items). Participants were asked to read the items out loud, then a combination of protocols were used by the researcher to make sure that the participant fully understood the item. Questions were asked relating to explaining the meaning of certain words, giving



examples of what the item meant or asking what score they would give themselves. Answers to those questions were noted, together with observations of the behaviour of the participants while filling-in the questionnaire (hesitations, confusion expressions, skipping an answer). This process resulted in a total of 34 items out of which two items were omitted due to lexical problems (Dillman, 2000).

#### *Pilot test*

The fourth stage was a pilot test conducted using the 34-item version of the SASQ to examine the comprehensibility of the questionnaire and the ease of overall administration (Collins, 2003; Czaja et al., 2014; MacNamara & Collins, 2011).

#### Participants

The 34-item list was pilot-tested with a sample of athletes ( $N=21$ , 12 males, 9 females; age range: 12-21 years) competing in different sports (basketball,  $N=9$ ), (football,  $N=6$ ) (rugby,  $N=3$ ), and handball,  $N=3$ ). A written informed consent was obtained from all participants (and parents/guardians of the 3 participants who were under 16). Each athlete competed at a representative level (e.g., regional and national levels) in their respective sports. In order to ensure that the SASQ was suited to the range of sports and age groups, a purposefully stratified sample was selected. First, it was deemed justified to first interview the professional athletes about their problematic experiences in discovering the psychosocial skills they enacted during club-to-club transfer since no literature existed before. In addition, since the interviews were based on timeline, it can be argued that the professional athletes shared some experiences which they encountered during their development stages which corresponded to the age group (e.g., 12- 21 years) in the current study. Second, since the focus was on talent development, therefore, by interviewing senior athletes, the aim was to identify past problematic experiences regarding club-to-club transfers while also exploring how club-to-club transfer was considered within this group.

## Procedure

The pilot version of the SASQ contained 34 items using a 6-point Likert scale with a similarity response format from 1: *very unlike me* to 6: *very like me* as suggested by Lei Chang (Lei Chang, 1994; MacNamara & Collins, 2011). In choosing the appropriate scale to apply, Lei Chang (1994) while evaluating which point scale between 4 or 6 in relation to reliability and validity argued for the use of a 4-point scale. However, the authors do admit as a limitation in their study that respondent knowledge with respect to what is being measured might have affected their conclusion as to whether the 4-point scale or 6-point scale was the best choice. In addition, the authors encouraged future studies to look beyond a simple relation between number of scale points and reliability or validity for possible interaction effects between scale points and other factors such as respondent knowledge of what is being measured. Left with this choice and also support within the literature, I opted for a 6-point Likert scale (Chomeya, 2010; Lei Chang, 1994).

The 34-item list contained a mixture of negatively ( $N = 13$ ) and positively ( $N = 21$ ) worded questions to minimize the danger of acquiescence bias (Hinz et al., 2007). The pilot version took between 12 - 15 minutes to complete. After the item analysis, participants were encouraged to write comments and/or problems encountered next to the item/s. Debriefing of each item on the questionnaire was conducted and after completion, participants were encouraged to provide feedback. During the debriefing, each of the SASQ item was discussed and it involved explaining in depth the item question and what it was intended to elicit. Once the debriefing stage was finalised, the participants were encouraged to provide their feedback next to each item. Once again, each item having a comment or feedback was discussed in depth with both the panel and participants.

## Data analysis and results

Following the pilot test data analysis, the final SASQ at this stage still contained 34 items, ensuring that at least three items per sub-theme were retained (Cid et al., 2022). As a result of the first stage, the elite athletes played different roles, contributing to the retention of all items since they suggested themes focusing on their challenges during club-to-club transfers. Young athletes could identify incomprehensible or difficult questions during the pilot test study. A revised questionnaire structure was sent to two expert panel members with the request that they comment on the face validity, content validity, comprehensibility, and comprehensiveness of the SASQ in light of the proposed target population (MacNamara & Collins, 2011). This was done to ensure the 34 SASQ items adequately covered the questionnaire constructs. The questionnaire did not require any further modifications after this stage.

## **STUDY 2: EXPLORATORY FACTOR ANALYSIS**

In study 2, an exploratory factor analysis (EFA) to examine the possibility of reducing a large number of SASQ variables into manageable size while retaining as much of the original information as possible was performed (Field, 2020; Marsh & Hau, 2004; Wiktorowicz, 2016).

### Sample size

The Kaiser-Meyer-Olkin (KMO) test of sampling adequacy and the Bartlett sphericity test were used to assess the quality of the correlations to proceed (or not) with the EFA (Hill & Hill, 2005; Worthington & Whittaker, 2006).

### Participants

Two hundred and seventy-two participants (Mean age = 16.67, SD = 2.42, range: 12-21 years) completed the questionnaire (see Table 9). A written informed consent was obtained from all participants (and parents/guardians when participants were under 16). There needs to be a consensus regarding sample size calculation using EFA (DeVellis, 2003, p. 137, 2017).

**Table 9***Demographic characteristics of participants (N =272)*

<b>Participants characteristics</b>	<b>Total number</b>	<b>Frequency (%)</b>
<b>Gender</b>		
Male	172	63.24
Female	100	36.76
<b>Age</b>		
12yrs	15	5.51
13yrs	26	9.56
14yrs	20	7.35
15yrs	33	12.13
16yrs	23	9.93
17yrs	42	16.91
18yrs	50	18.38
19yrs	20	7.35
20yrs	21	7.72
21yrs	14	5.15
<b>Sport type</b>		
Basketball	75	27.57
Football	84	30.88
Volleyball	36	13.24
Unihockey	20	7.35
Handball	30	11.03
Rugby	27	9.93
<b>Talent development model</b>		
Academy	124	45.59
Not in Academy	148	54.41
<b>Level of play</b>		
National	67	24.63
Regional	205	75.37

Following considerable discussion within the literature, the current thesis followed the recommendation of DeVellis (DeVellis, 2003, p. 137, 2017), indicating 5 to 10 participants per item. Since SASQ had 34 items, the sample size ( $N = 272$ ) fulfilled the empirical rule. Participants were purposefully sampled in line with their characteristics and ability to adapt in the environmental sporting conditions for which the SASQ was designed. By virtue of their commitment and selection to formally established development environments (e.g., regional or national, and in academy or not in academy groups), they had been recruited as junior athletes with the potential to become senior elites.

#### Procedure

Self-administered paper-pencil SASQ questionnaires were distributed to the 272 participants at their respective clubs between March and May 2022. As participation was anonymous, the athletes were given coded names based on their initials and age and their parents' initials (mother then father).

#### Data analysis

The Statistical Package for Social Sciences (SPSS *version 29*) was used to examine the factor structure of the SASQ with statistical significance set at  $p < 0.05$ . Prior to the analysis, scores of negatively worded questions were reversed. Descriptive statistics were performed on the 34 items with mean, standard deviation, measures of kurtosis and skewness, and the analysis of missing values. Participants could decide not to answer certain questions, therefore considering the 34 items, only 2.03 % of the values were missing. It is normally considered inconsequential when the missing data percentage is below 5% (Schafer, 1999). As a result, the exclude cases listwise method for the descriptive statistics was applied.

In addition to allowing significant items to be retained and interpreted, the emerging factor structure provided insight into the latent factors underpinning the SASQ. The specific approach utilized Exploratory Factor Analysis (EFA) extraction. An oblique with direct

oblimin rotation was selected to improve the interpretation of the data since the factors were likely to be correlated.

The criteria used to determine the number of factors to be extracted included the scree plot (Cid et al., 2022; Khan, 2006). Kaiser's criterion, which advocates for retention of factors with an eigenvalue (EV)  $\geq 1.0$  was applied since low unit values reflect instability in the factor (Hair, 2017). Further consideration was given to the communalities and factor loadings (Kahn, 2006; Tabachnick et al., 2019; Worthington & Whittaker, 2006).

## RESULTS

The response distribution in Table 10 indicates that the respondents scored high points on all the items (i.e., *very like me* rather than *very unlike me*) with the lowest score for item 7 (Mean: 2.26, SD: 1.15) and the highest score for item 6 (Mean: 5.90, SD: 0.38). The skewness and kurtosis coefficients were also examined. Item 6 did not follow the normal distribution and as such, a Box-cox normality plot was applied to find a transformation that approximately normalised the data. In addition, this process was verified by computing the correlation coefficient of a normal probability plot.

The KMO static value was 0.835, which is above the minimum criterion of 0.6. Moreover, all the KMO values for individual items were greater than 0.75. The Bartlett's test of sphericity had a Chi-square approximation of 1179.27 and was significant at  $p < 0.001$ . Based on the KMO and Bartlett's sphericity tests, the EFA method was suitable for use in the current research (Cid et al., 2022; Hair, 2017; Tabachnick et al., 2019).

A combination of approaches that preserve the content validity and psychometric properties of a questionnaire was applied (Goetz et al., 2013; Hair, 2017; Kahn, 2006; Tabachnick et al., 2019; Worthington and Whittaker, 2006), and the results indicated that items with high factor loadings were maintained. During the initial stage, an EFA was run on the 34 items and due to the exploratory nature of the analysis, a total of 13 items were deleted leaving

the SASQ with only 21 items. Thirteen of the items were dropped due to low communalities below 0.3 (item 2, 4, 5, 7, 8, 11, 15, 16, 19, 20, 21, 23, and 32). Therefore, the following results are based on the remaining 21 items (Table 10).

**Table 10**

*SASQ item profile and corresponding descriptive statistics (N = 272)*

	<b>Mean</b>	<b>SD</b>	<b>Missing value</b>	<b>Kurtosis</b>	<b>Skewness</b>
Item 1	4.57	1.25	0	-0.71	-0.07
Item 2	4.40	1.22	0	-0.46	-0.47
Item 3	4.42	1.26	5	-0.65	-0.02
Item 4	3.82	1.51	4	-0.23	-0.99
Item 5	5.15	1.00	0	-1.51	2.86
Item 6	5.90	0.38	6	-5.77	45.01
Item 7	2.26	1.15	7	0.81	0.12
Item 8	5.03	1.06	0	-1.24	1.65
Item 9	5.17	0.98	2	-1.20	0.98
Item 10	5.42	0.86	0	-2.16	6.34
Item 11	4.81	1.15	3	-0.49	-0.55
Item 12	5.10	0.96	7	-1.16	1.30
Item 13	4.77	1.30	0	-0.78	-0.06
Item 14	5.09	1.03	2	-1.02	0.82
Item 15	4.69	1.23	1	-1.12	0.64
Item 16	4.92	1.41	0	-1.46	2.77
Item 17	5.12	0.98	3	-1.00	0.64
Item 18	4.68	1.55	1	-1.30	1.89
Item 19	5.16	1.01	0	-0.90	0.48
Item 20	5.16	1.02	4	-1.50	2.45
Item 21	4.97	1.19	6	-1.52	1.90

Studies have suggested that after performing the extraction, the communalities must be greater than 0.30 for good validity to be assumed (Cid et al., 2022; Hair, 2017; Siembida et al., 2018; Tabachnick et al., 2019). The SASQ met most of this criterion, except for items 1 (0.246), 3 (0.273), 4 (0.264), and 14 (0.281), which were eliminated, leaving the SASQ with a total of 17 items. The scree plot revealed that four factors could be retained and this was consistent with the previous findings (Owiti & Hauw, 2021). Further, the SASQ initial items were grouped into four factors and rotated factor loads varied between 0.338 and 0.715 (Table 11). The four factors explained 56.71% of the total variance in the 17-item SASQ version. It should

be noted that the club factor contained only two items contrary to the standard requirement of at least three items per sub-theme (Cid et al., 2022).

**Table 11**

*Grouping of the 21 items into four factors with rotated factor loads*

<b>Item</b>	<b>F1 Coach</b>	<b>F2 Teammates</b>	<b>F3 Family/Friends</b>	<b>F4 Club</b>
8. I always feel stimulated whenever my trainer/coach puts pressure on me to reach my sporting goals.	0.715			
9. Whenever the coach gives me orders/advice, i am able to listen and respect his/her decision without difficulties.	0.610			
12. I have difficulties listening to coaches/trainers that i don't know.	0.576			
3. I can't tolerate it when trainer/coach favours certain players more than others.	0.556			
17. I find it normal that play time can vary whenever trainers/coaches change	0.541			
13. I always feel paralysed whenever my trainer/coach puts pressure on me to reach my sporting goals.	0.535			
7. I feel capable of carrying out my training despite the coach's behaviour (pressure, support, or indifference).	0.526			
18. In my life, i have always found solutions to satisfy all my sporting and non-sporting interests (performance, studies, friends, family life...)	0.512			
6. I don't support when my coach reduces my play time during matches	0.501			
11. Whenever i have teammates from a different cultural background, i feel at ease communicating with them.		0.661		



<b>Item</b>	<b>F1 Coach</b>	<b>F2 Teammates</b>	<b>F3 Family/Friends</b>	<b>F4 Club</b>
20. I find that relations between teammates are not usually spontaneous but always interesting.		0.639		
2. I don't like having foreign teammates.		0.577		
22. I find it difficult to get recognition from people i don't know well.		0.498		
10. Whenever i have teammates from different ethnic and cultural backgrounds, i don't feel comfortable communicating with them.		0.487		
15. I don't encounter any particular difficulties whenever i am away from my family (for example, during internships or camps away from home).			0.672	
14. I don't see myself living far from my family in the future.			0.462	
5. I always feel lost when i am away from my family (for example, during internships or camps away from my family).			0.349	
16. I see myself living away from my family in the future			0.510	
4. I wouldn't accept to play in a club whose training facilities are not of high quality.				0.338
21. I know how to train seriously on my own even when the sporting facilities are not satisfactory.				0.589
1. I find it acceptable to play at a club regardless of the state of the facilities.				0.541
<b>% variance</b>	<b>33.85</b>	<b>10.39</b>	<b>6.93</b>	<b>5.54</b>

*Extraction method: Exploratory Factor Analysis (EFA)*

*Rotation method: oblimin with Kaiser normalization*

*a rotation converged in 15 iterations*

To determine whether the final four-factor solution was adequate, the determinants of the 21-item correlation matrix and reproduced matrices were used to evaluate the model fit

(Pett et al., 2003). The reproduced correlations were also close to the original correlations, and values in the residual correlation matrix were small, indicating good model fit (Table 12)

**Table 12**

*Reproduced correlation matrix*

	I-1	I-2	I-3	I-4	I-5	I-6	I-7	I-8	I-9	I-10	I-11	I-12	I-13	I-14	I-15	I-16	I-17	I-18	I-19	I-20	I-21	
<b>I-1</b>	<b>.524a</b>																					
<b>I-2</b>	.380	<b>.511a</b>																				
<b>I-3</b>	.178	.258	<b>.417a</b>																			
<b>I-4</b>	.215	.392	.249	<b>.368a</b>																		
<b>I-5</b>	.126	.328	.160	.346	<b>.368a</b>																	
<b>I-6</b>	.122	.272	.390	.228	.124	<b>.409a</b>																
<b>I-7</b>	-.146	-.022	-.298	-.060	-.001	.374	<b>.449a</b>															
<b>I-8</b>	.329	.371	.172	.313	.293	.406	-.173	<b>.418a</b>														
<b>I-9</b>	.280	.176	.112	.148	.132	.316	.105	-.083	<b>.347a</b>													
<b>I-10</b>	.196	.382	.239	.391	.393	.270	-.003	-.183	.235	<b>.246a</b>												
<b>I-11</b>	.365	.295	.367	.242	.151	.336	.183	-.080	.343	.183	<b>.439a</b>											
<b>I-12</b>	.170	-.019	.204	.043	.023	.302	.271	-.354	.272	.259	.247	<b>.458a</b>										
<b>I-13</b>	.117	.213	.132	.279	.323	.306	.015	-.420	.127	.263	.097	.339	<b>.507a</b>									
<b>I-14</b>	.153	.114	.097	.178	.216	.202	.013	-.117	.280	.209	.358	.189	.207	<b>.380a</b>								
<b>I-15</b>	.135	.117	.025	.234	.301	.193	-.066	-.201	.240	.255	.259	.219	.327	.340	<b>.372a</b>							
<b>I-16</b>	.027	-.004	.146	.117	.155	.261	-.111	-.064	.283	.233	.323	.135	.203	.384	.367	<b>.427a</b>						
<b>I-17</b>	.448	.288	.215	.234	.193	.348	-.025	-.287	.142	.205	.201	.214	.388	.308	.353	.304	<b>.408a</b>					
<b>I-18</b>	-.084	.058	.110	.214	.294	.391	.048	-.300	.359	.373	.278	.429	.408	.299	.370	.322	.299	<b>.574a</b>				
<b>I-19</b>	.014	.265	.359	.372	.378	.370	-.021	-.139	.172	.138	.315	.102	.232	.388	.347	.377	.383	.185	<b>.492a</b>			
<b>I-20</b>	.425	.215	.233	.160	.099	.293	.286	-.218	.246	.124	.434	.278	.196	.376	.272	.283	.321	.198	.440	<b>.605a</b>		
<b>I-21</b>	.216	.221	-.092	.184	.233	.305	-.158	-.361	.288	.348	.189	.434	.441	.220	.320	.231	.282	.544	.177	.142	<b>.549a</b>	

**I** = Item

a) *Reproduced communalities*

b) *Residuals are computed between observed and reproduced correlations. There are 20 (9.0%) nonredundant residuals with absolute values > 0.05*

## **RELIABILITY ANALYSIS**

### Internal consistency

The scale demonstrated good reliability in terms of internal consistency (Cronbach alpha) for the aggregate score ( $\alpha = 0.898$ ) and good to excellent reliability for the independent scores (coach = 0.921, teammates = 0.864, family = 0.875, and club = 0.801) (Kline, 2016; Koo & Li, 2016). The correlations between each item and the total questionnaire score were reliable (above 0.3) except for item 1 (0.282), 3 (0.273), 4 (0.264) and 14 (0.281), which were finally deleted. The Cronbach alpha values, if deleted, were also calculated and were expected not to exceed 0.898 (Field, 2020). To ensure that the factor structure had not been affected by deleting the four items, the factor analysis was run again.

## **STUDY 3: CONFIRMATORY FACTOR ANALYSIS**

The four-factor, 17-item SASQ model identified in the EFA was examined using Confirmatory Factor Analysis (CFA), with the intention to configure the final instrument. As a result of this second-order analysis, the hierarchical structure of the instrument and the relationships between variables in the EFA were validated (Abraham et al., 2019; Cid et al., 2022). In addition, acknowledging that predictive validity is one of the most important forms of validity, i similarly evaluated the association between SASQ items using Latent Class Analysis (LCA) method. The combination of these two methodologies constituted an exploratory sequential mixed methodology design approach to integrate social adaptability skills during athletes' club-to-club transfers. Similar mixed methodology has been previously applied with success in determining the internal and predictive validity of psychometric instruments (Golay et al., 2016).

## **Method**

### **Participants**

A total of three hundred and three participants from different team sports who ranged in age from 12 to 21 years (Male = 207, Female = 96; Mean = 16.59, SD = 2.42) agreed to participate in this study (Table 13). A written informed consent was obtained from all participants (and parents/guardians when participants were under 16 years of age). There is no consensus regarding sample size calculation using CFA: empirical rules vary from 5 to 10 subjects per item (DeVellis, 2003, p. 137, 2017). Since the SASQ had 17 items, the sample size ( $N = 303$ ) fulfilled the empirical rule. Participants were purposefully sampled in line with their characteristics and ability to adapt in the environmental sporting conditions for which the SASQ was designed.

### **Procedure**

Participants were recruited using the authors informal and professional network (i.e., clubs and sport centers). Coaches at these clubs were informed regarding the study details (purpose and methodology) and identified any athlete who may have met the eligibility criteria of potential study participation (i.e., between 12 to 21 years and currently a member of a sports club and participating in a team sport). The study details were explained to the eligible participants, and they signed informed consent agreeing to participate. Personal data were hidden and all participants names anonymized. The ethical acceptance was obtained from the ethical committee. Self-administered paper-pencil SASQ- 17 item were distributed to the three hundred and three participants at their respective clubs. It took averagely 5 to 10 minutes to complete the questionnaire.

**Table 13***Demographic characteristics of participants*

<b>Participants characteristics</b>	<b>Total number</b>	<b>Frequency (%)</b>
<b>Gender</b>		
Male	207	68.32
Female	96	31.68
<b>Age</b>		
12yrs	37	12.21
13yrs	46	15.18
14yrs	32	10.56
15yrs	24	7.92
16yrs	32	10.56
17yrs	35	11.55
18yrs	32	10.56
19yrs	27	8.91
20yrs	18	5.94
21yrs	20	6.60
<b>Sport type</b>		
Basketball	100	33.00
Football	93	30.69
Volleyball	41	13.53
Unihockey	31	10.23
Handball	23	7.59
Rugby	15	4.95
<b>Talent development model</b>		
Academy	131	43.23
Not in Academy	172	56.77
<b>Level of play</b>		
National	79	26.07
Regional	224	73.93

## Data analysis

The Statistical Package for Social Sciences (SPSS *version 29*) was used to screen data for missing values, outliers and to test for normal distribution (Tabachnik & Fidel, 2013). Prior to the analysis, scores of negatively worded questions were reversed. In cases where skewness and kurtosis of the scores presented substantial deviations from the normal distribution, appropriate transformations using a Box-cox normality plot was applied to find the transformation that approximately normalised the data. This was further verified by computing the correlation coefficient of a normal probability plot.

The CFA analysis was conducted using AMOS *version 27* software. The CFA is presented in route diagrams where the circles represent latent variables and the squares represent the observed variables (Abraham et al., 2019; Kline, 2016; Koo & Li, 2016). Two-headed arrows indicate covariance between the four latent variables, and single-headed arrows indicate the assumed direction of influence (Rodrigues et al., 2019). The CFA model was evaluated according to the following fit indices; the chi-square test ( $X^2$ ), the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR).

The following guidelines for both absolute and incremental fit indices were applied: Normalized chi-square values of  $(X^2/df) < 0.3$  indicate reasonable adjustment (Arbuckle, 2013, Hair et al., 2019), SRMR values  $\leq 0.08$  indicate good fit (Hu and Bentler, 1999), RMSEA values  $\leq 0.06$  indicate an adequacy of the model (Hu and Bentler, 1999). Incremental fit such as CFI and TLI indicate good values when  $\geq 0.95$  (Hu and Bentler, 1999). However, several authors (Marsh et al., 2004; Worthington and Whittaker, 2006; Brown, 2015, Kline, 2006) point to values  $\geq 0.90$  as acceptable. Furthermore, some authors have criticized the arbitrariness of these limit values, showing that by applying them to simulated data according to a given

structure, these values sometimes fail to confirm the underlying structure (e.g. Lance et al., 2006; Sharma et al., 2005); they thus consider a threshold of 0.80 acceptable for CFI.

## RESULTS

The response distribution in Table 14 indicates that the respondents scored high points on all the items (i.e., *very like me* rather than *very unlike me*) with the lowest score for item 16 (Mean: 2.41, SD: 1.25) and the highest score for item 12 (mean: 5.83, SD: 0.65). The skewness and kurtosis coefficients were also examined. Item 13 did not follow the normal distribution and as such, appropriate transformation to normalise the data was performed. In total, only 0.95 % of the 17 SASQ item values were missing and was therefore considered inconsequential (Schafer, 1999).

**Table 14**

The descriptive statistics of the SASQ- 17 items ( $N = 303$ )

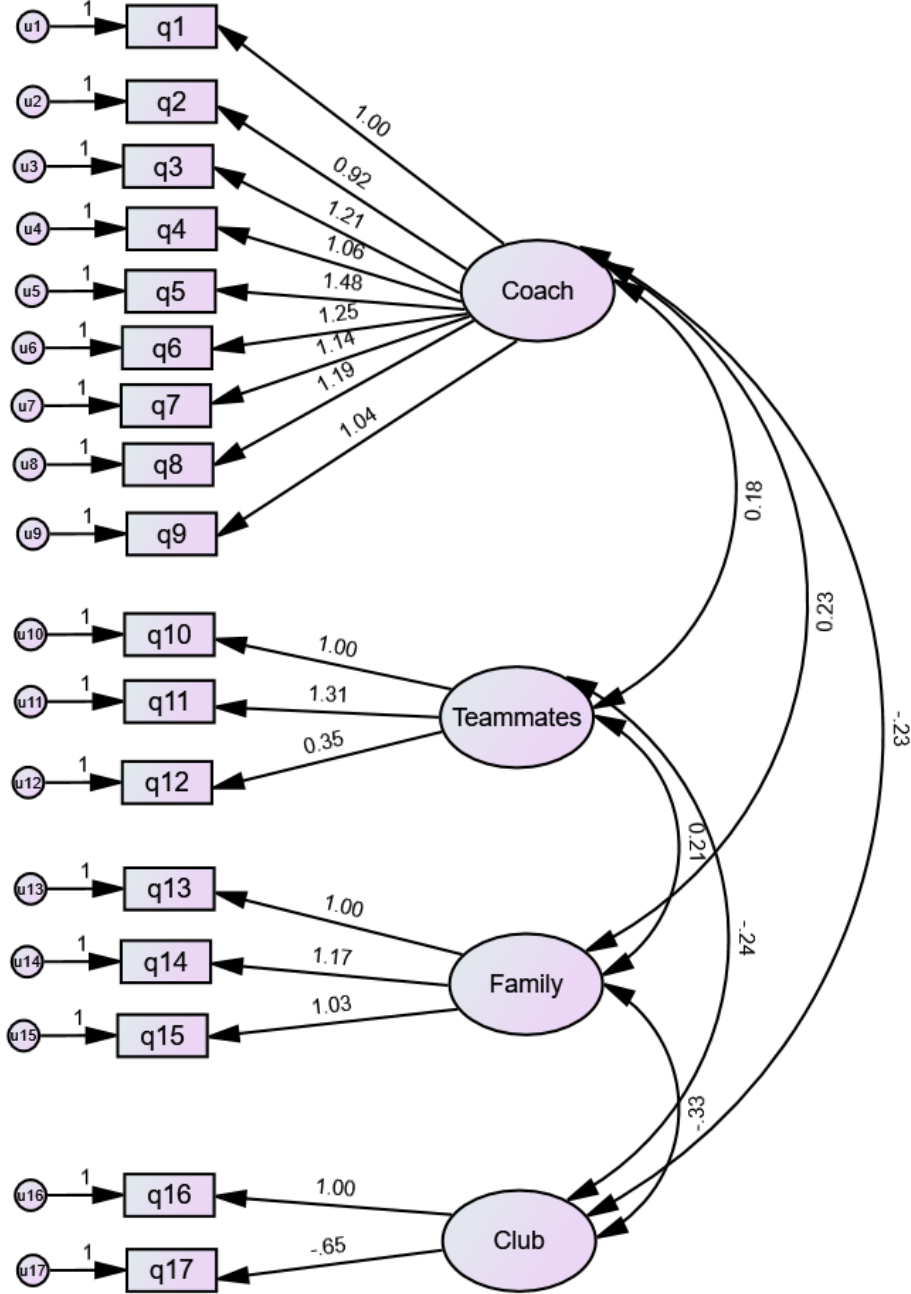
	Mean	SD	Missing value	Kurtosis	Skewness
Item 1	4.22	1.22	1	-0.15	-0.92
Item 2	4.97	1.18	4	-0.39	-0.32
Item 3	5.23	1.06	4	-1.22	1.02
Item 4	4.99	1.05	0	-1.71	3.15
Item 5	5.02	1.13	1	-1.13	1.17
Item 6	5.06	1.04	4	-1.32	1.67
Item 7	5.38	0.82	0	-1.16	1.06
Item 8	4.99	1.14	6	-1.50	2.85
Item 9	5.33	0.83	0	-1.37	1.92
Item 10	4.36	1.30	5	-1.25	1.44
Item 11	4.55	1.27	1	-0.59	-0.41
Item 12	5.83	0.65	6	-0.75	0.06
Item 13	5.23	0.94	7	-5.44	33.77
Item 14	4.89	1.40	0	-1.20	0.91
Item 15	4.95	1.14	3	-1.40	1.12
Item 16	2.41	1.25	3	-1.06	0.65
Item 17	5.30	0.75	4	0.79	-0.02

The CFA evidenced a good fit for the model: model fit:  $X^2$  (df) = 235.860 (113),  $p < 0.000$ , CFI = 0.889, TLI = 0.901, RMSEA = 0.057, and SRMR = 0.07.



Figure 7

Confirmatory Factor Analysis standardized weight estimates



Finally, the latent variables for the four subscales of the SAS had nine (coach), three (teammates), three (family), and two (club) items each (see Figure 7). According to the route diagram, all items show acceptable factor weights (standardized values) ranging from -0.65 to 1.48, except for question 12 which had a value of 0.35. Nine elements of the coach construct had factorial weights between 0.92 and 1.48, as did the three elements of the teammates construct, which had factorial weights between 0.35 and 1.31. The three elements of the family construct ranged from 1.00 to 1.17, and the last two elements of the club construct ranged from -0.65 to 1.00.

## **LATENT CLASS ANALYSIS**

### **Participants and Data analysis**

The same data used in part 2 chapter 3 study (i.e., EFA- 272 participants) and study 2 (i.e., CFA - 271 participants) both totaling 543 participants was reused to classify the Social Adaptability Skills (SAS) into meaningful groups using latent class analysis (LCA) (Magidson & Vermunt, 2004). According to Nylund and colleagues (Nylund et al., 2007), LCA models are used to “uncover unobserved heterogeneity in a population and to find substantively meaningful groups of people that are similar in their responses to measured variables” (p. 536). The current study settled on LCA because it transcends other conventional parametric analyses by relaxing the assumptions of homogeneity of variance, skewness, normal distribution, and linearity that cannot be analysed using the same conventional parametric clustering techniques (Magidson & Vermunt, 2016). The analysis was performed on Latent Gold® 6.0 (Magidson & Vermunt, 2016) with the maximum likelihood method for parameter estimation. The LCA in the present study comprised:

- (i) building and classification of a cluster model.
- (ii) bootstrapping to confirm the optimum fit model.
- (iii) predicting the precision of the optimal model using classification statistics.

The optimal model was determined by comparing the fit statistics of three models (Fraley, 1998), namely: (i) Akaike Information Criterion (AIC), a measure of relative fit or quality of the model of the data, which considers model parsimony (the number of parameters). AIC is estimated based on log-likelihood squared ( $L^2$ ) and LL. In either case, lower AIC indices indicate a better fit (Vrieze, 2012), (ii) Consistent AIC (CAIC) based on LL, and (iii) Bayesian Information Criterion (BIC) based on LL: A better fit is indicated by low BIC indices when comparing different models. Furthermore, BIC imposes a more substantial penalty on the number of parameters than AIC. Therefore, when AIC and other fit statistics differ, the former is usually prioritized when assessing model fit (Vrieze, 2012).

It should be noted that, during the analysis, the competing models were nested with the optimal model to preserve the same number of latent classes and variables on each model. An examination of the statistical significance ( $p$ -value) of the conditional bootstrapping analysis determined the amount of improvement in fit. If the  $p$ -value generated in conditional bootstrapping is statistically significant ( $p < 0.05$ ), then the competing model provides a statistically significant improvement in model fit, even though it might compromise inferior AIC, BIC, and CAIC (Booth et al., 1992; Vermunt & Magidson, 2005). Finally, in estimating the effect size, an entropy  $R^2$  was computed using the sample size, posterior probabilities, and the number of classes (Vermunt & Magidson, 2005). According to Kaplan and colleagues (Kaplan and Keller, 2011), high entropy  $R^2$  values indicate high precision in the classification and the prediction of the emerging latent classes.

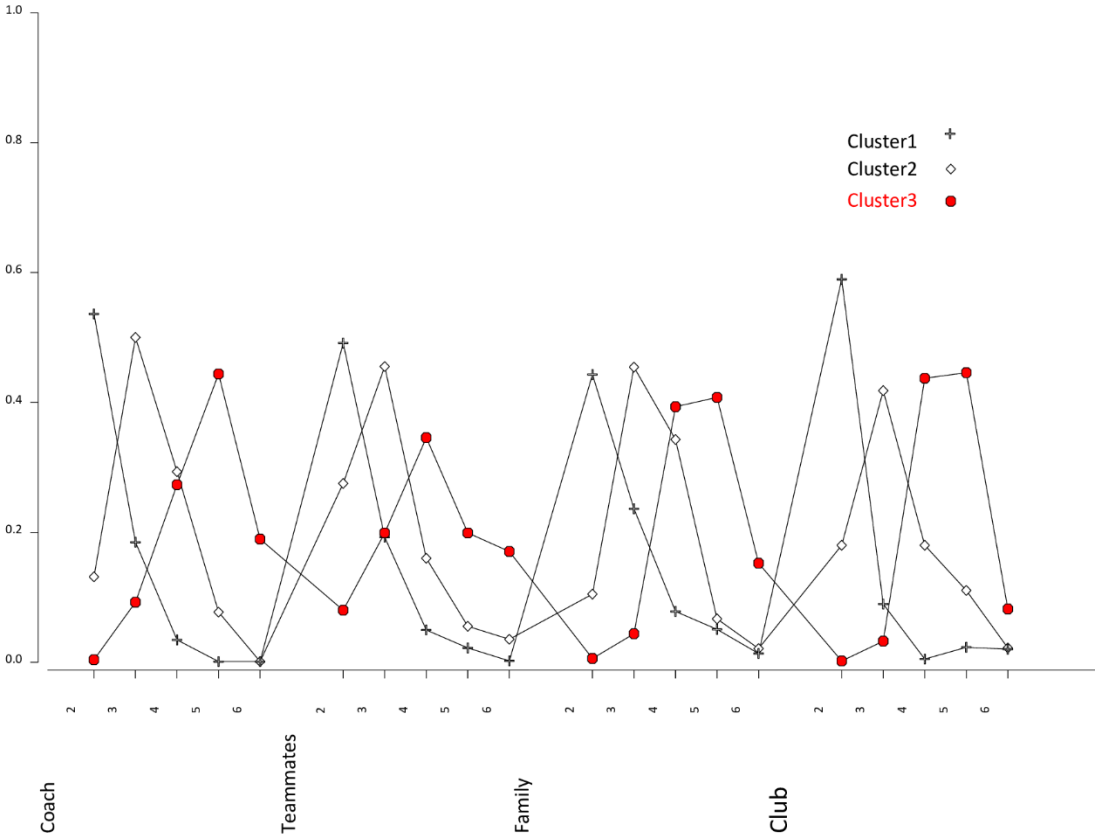
## **RESULTS**

Figure 8 illustrates the conditional probabilities of the three classes on a profile graph (Allen et al., 2021). On the graph, four significant variables are displayed on the horizontal axis against probability values on the vertical axis, making it easier to observe and interpret the comparison between latent classes. In addition, class three obtained the highest rating on each

corresponding dimension (coach, teammates, family, and club), with a maximum score of six on all items. Class one obtained the lowest rating on each corresponding dimension's score, while class two obtained average ratings on each corresponding dimension.

**Figure 8**

*Profile plot for the three-class model*



Following the LCA analysis, the SASQ 17- items that significantly contributed to discriminating participants were determined. Table 15 demonstrates the loadings indicating “how well” the indicator is explained by the model (Vermunt & Magidson, 2005, p. 113), and mean scores of the item across the three groups, alongside their *p* values estimated based on Wald statistics. The loading indices are the magnitude of the contribution of the variable to measuring the construct. All items had higher loadings ( $\geq 0.5$ ) except for item Q22R which reported a loading of 0.489.

**Table 15***Classification of the SASQ items in three class model*

<b>Item</b>	<b>Loading</b>	<b>Wald</b>	<b>High Achievers (Mean)</b>	<b>Average Achievers (Mean)</b>	<b>Low Achievers (Mean)</b>	<b>p value</b>
Q5	0.563	72.452	<b>75.047</b>	54.711	53.655	<i>p</i> < .05
Q11	0.501	53.404	5.352	11.630	<b>13.772</b>	<i>p</i> < .05
Q12R	0.575	59.789	<b>12.300</b>	8.433	11.758	<i>p</i> < .05
Q7	0.703	69.770	18.784	<b>19.031</b>	11.643	<i>p</i> < .05
Q8R	0.582	59.642	<b>12.571</b>	12.423	10.756	<i>p</i> < .05
Q10	0.511	50.489	<b>16.136</b>	7.248	8.606	<i>p</i> < .05
Q13	0.609	59.441	<b>12.799</b>	5.122	12.375	<i>p</i> < .05
Q18	0.526	61.481	13.436	8.845	<b>13.491</b>	<i>p</i> < .05
Q22R	0.489*	82.751	19.379	8.800	<b>22.827</b>	<i>p</i> =0.07*
Q23	0.715	66.203	<b>16.354</b>	8.680	16.350	<i>p</i> < .05
Q25	0.612	65.467	<b>17.229</b>	12.339	11.119	<i>p</i> < .05
Q26	0.506	55.277	<b>17.202</b>	12.031	8.116	<i>p</i> < .05
Q29R	0.502	52.191	12.405	12.538	<b>13.538</b>	<i>p</i> < .05
Q30	0.519	63.891	<b>16.047</b>	2.261	10.876	<i>p</i> < .05
Q31	0.513	53.476	6.904	7.162	<b>13.104</b>	<i>p</i> < .05
Q32R	0.531	50.573	9.224	<b>11.697</b>	5.966	<i>p</i> < .05
Q33	0.509	56.970	11.315	11.968	<b>13.245</b>	<i>p</i> < .05

*Note: Areas marked (\*) indicates non-significance*

*Bold print indicates highest mean scores.*

The three groups of participants were differentiated based on the SASQ 17-item questions. For example, high achievers had the highest mean (75.047) for item Q5 followed by

average achievers (54.711) and finally low achievers (53.655), meaning that the response of high achievers as regards item Q5 was significantly higher than responses generated by participants in average and low achievers' group. Similarly, response concerning item Q25 reported that high achievers ( $M = 17.229$ ) were significantly higher than those of average and low achievers' groups ( $M_{1,2} = 12.339, 11.119$ ) ( $p < 0.05$ ).

Four models were fitted to the data and as demonstrated in Table 16, a three-class model differentiating between three different groups (low achievers, average achievers, and high achievers) had an optimal fit to the data (BIC = 4172.964; AIC = 3437.369; CAIC = 3642.426). Although the model had a higher AIC index than that of a four-class model, however, since it had lower BIC and CAIC, a smaller number of parameters to estimate (161; more parsimonious), and a significant conditional bootstrapping  $p$  value, there was evidence for its optimal fit. Finally, the effect sizes computed by the entropy  $R^2$  index were 0.8658 (two class), 0.9184 (three class), and 0.9738 (four class), which translated into 87 %, 91 %, and 97 % respectively of accuracy in classifying the participants into three latent classes and the prediction of their SASQ test scores.

**Table 16**

*Comparative Fit Statistics of the LCA models*

MC				Npar	$L^2$	df	Entropy		$P_{cond.Boot}$
	BIC	AIC	CAIC				R	$R^2$	
One	6790.451	6524.145	6586.145	62	656.1892	480	0.7706		
Two	5753.671	4327.642	4659.642	332	3566.915	210	0.8908	0.8658	
Three	<b>4172.964</b>	3481.426	<b>3642.426</b>	161	3159.426	381	1	0.9184	$p < .05$
Four	4824.74	<b>3437.369</b>	3760.369	323	2791.369	219	0.7671	0.9738	$p > .05$

*Note: BIC = Bayesian Information Criterion; AIC = Akaike Information Criterion*

*CAIC = Consistent Akaike Information Criterion MC = Model Class*

*Bold print indicates the lowest fit index.*

## INTERNAL RELIABILITY

Once the CFA and LCA validated the SASQ factorial structure with 17 items, a reliability analysis to measure the internal consistency was performed using the composite reliability. This was due to the limitations of Cronbach's alpha ( $\alpha$ ) which are well known (Yanyun and Green, 2011), including the assumptions of uncorrelated errors, tau-equivalence and normality. Therefore, the current study analysed the internal consistency using composite reliability, which provided a better option (Table 17). Raykov's formula was used to calculate the composite reliability (Raykov, 1997). An acceptable threshold for composite reliability falls between 0.6 to 0.7 but should not be above 0.95 (Tabachnick et al., 2019). This means that the underlying SASQ factors presented acceptable internal consistency and can be used reliably in future research or real-world applications.

Raykov's composite reliability equation:

$$CR = \frac{(\sum \lambda_i)^2}{(\sum \lambda_i)^2 + (\sum \epsilon_i)}$$

Whereby,  $\lambda$  (lambda) is the standardized factor loading for item  $i$  and  $\epsilon$  is the respective error variance for item  $i$ . The error variance ( $\epsilon$ ) is estimated based on the value of the standardized loading ( $\lambda$ ) as:

$$\epsilon_i = 1 - \lambda_i^2$$

The item  $r^2$  value is the percent of the variance of item  $i$ , explained by the latent variable. It is estimated based on the value of the standardized loading ( $\lambda$ ) as:

$$r^2 = \lambda_i^2 = 1 - \epsilon_i$$

**Table 17***Composite reliability of the four factors*

	<b>Teammates</b>	<b>Coach</b>	<b>Family</b>	<b>Club</b>
Composite reliability value	0.76	0.76	0.72	0.68

**Test re-test reliability**

In order to evaluate the SASQ reliability, a test-retest analysis was carried out (Buckworth et al., 2013; Cid et al., 2022; Nideffer and Sagal, 2001; Vallerand, 1989), with the same subject measured at two different times (always in conditions of similar application) (Hill & Hill, 2005; Nideffer & Sagal, 2001; Vallerand, 1989).

**Participants**

One hundred and seventy-four athletes (males  $N = 94$  and females  $N = 80$ ) performing their sport at the regional ( $N = 120$ ) or national ( $N = 54$ ) level participated in this study. The mean age was 17.01 years (age range: 12-21;  $SD = 1.79$ ). All participants took part in team sports (football  $N = 48$ , 27.6%; basketball  $N = 67$ , 38.5%; volleyball  $N = 25$ , 14.4%; rugby  $N = 10$ , 5.7%; and unihockey  $N = 24$ , 13.8%) respectively. Initially, 189 participants took part during the first administration of the SASQ; however, only 174 participants participated in both administrations. Since SASQ had a total of 17 items, the sample size ( $N = 174$ ) met the empirical rule of the 5 – 10 :1 participant-items ratio recommended in the literature (DeVellis, 2017; Cid et al., 2022).

**Procedure**

Procedures were explained to the participants who subsequently gave their written consent, along with their parents or guardians if they were under 16 years of age. Between August and October 2022, paper-pencil SASQ questionnaires were distributed to the participants. During the first administration, participants were assigned a code name based on their initials, age, and their parents' initials (mother and father). Scale reliability was assessed



by completing the questionnaire again, with code names to ensure correspondence between results at times 1 (T<sub>1</sub>) and 2 (T<sub>2</sub>). The SASQ instrument was administered twice at 4-week intervals.

Descriptive statistics were performed on the SASQ 17 items with means, standard deviations, skewness and kurtosis measures, and missing values analysis. The Intraclass Correlation (ICC) (two-way mixed effects, absolute agreement) and a paired sample *t*-test was performed to compare the factors between measurement times in the test-retest reliability analysis. Koo and colleagues (Koo & Li, 2016) defined ICC values less than 0.5 to indicate low reliability; between 0.5 and 0.75, moderate; between 0.75 and 0.90, good; and above 0.90, excellent. All data were analysed using SPSS version 27.

## Results

The descriptive statistics, internal reliability and interclass correlation are presented in Table 18. Additionally, the scale reliability was supported by test-retest data.

**Table 18**

*Descriptive statistics, internal reliability and intraclass correlation (N = 174)*

	T <sub>1</sub>	T <sub>2</sub>	Paired <i>t</i> - test		T <sub>1</sub>	T <sub>2</sub>	ICC
	<i>M(SD)</i>	<i>M(SD)</i>	<i>t(173)</i>	<i>P</i>	<i>α</i>	<i>α</i>	
Coach	4.14 (.79)	4.13(.76)	0.168	0.871	0.910	0.940	0.983
Teammates	5.17(.50)	5.19(.72)	-.089	0.937	0.890	0.910	0.842
Family	4.73(.26)	4.90(.15)	-2.350	0.143	0.750	0.790	0.786
Club	4.99(.15)	5.33(.06)	-5.154	0.122	0.680	0.710	0.606

In general, participants presented moderate to high scores on the factors at T<sub>1</sub> (mean: 4.14 -5.17) and T<sub>2</sub> (mean: 4.13 - 5.33), with corresponding similar standard deviations: T<sub>1</sub> SD = 0.15 - 0.79) and T<sub>2</sub> SD = 0.06 - 0.76, respectively. According to the ICC scores, the coach factor showed “excellent reliability” between T<sub>1</sub> and T<sub>2</sub> and teammates and family factors

showed “good reliability”. However, the ICC scores for the club factor indicated “moderate reliability”. Cronbach’s alpha varied minimally between T<sub>1</sub> and T<sub>2</sub> on all the four factors. A paired *t*-test indicated no significant difference between the two administrations.

### **DISCRIMINANT VALIDITY ANALYSIS**

According to Hair, discriminant validity ensures that a construct measure is empirically unique and represents phenomena of interest that other measures in a structural equation model do not capture (Hair, 2010). Essentially, discriminant validity requires that test results are not highly correlated with measures from which they are supposed to differ (Campbell, 1960). In the current study, the heterotrait-monotrait ratio of correlations (HTMT) was proposed as a new approach to assess discriminant validity in variance-based Structural Equation Modeling (SEM) (Henseler et al., 2015). This is due to the fact that recent research suggests that the routinely used Fornell-Larcker criterion is not effective under certain circumstances of discriminant validity testing (Henseler et al., 2014).

Since there are two ways of using the HTMT to assess discriminant validity: (i) as a criterion or (ii) as a statistical test, the former involves comparing it to a predefined threshold with the exact threshold levels of the HTMT being debatable (Clark & Watson, 1995; Kline, 2016). Therefore, i chose to perform the statistical test to assess the HTMT. This was carried out by applying a bootstrapping procedure to construct confidence intervals for the HTMT in order to test the null hypothesis ( $H_0: HTMT \geq 1$ ) against the alternative hypothesis ( $H_1: HTMT < 1$ ). A Confidence Interval (CI) containing the value one (i.e.,  $H_0$  holds) indicates a lack of discriminant validity. Conversely, if the value 1 falls outside the interval’s range, this suggests that the two constructs are empirically distinct. The advantage of using CI is that it provides more information by highlighting the direction and magnitude of the difference, or, if the hypothesis is not rejected, the power of the procedure can be assessed by the width of the interval (Shaffer, 1995).

## Results

The computations yielded values between (0.661 and 0.849) (Table 19). Upon comparing if the CI result value (one) falls outside the interval range, it can be reported that all the four constructs are empirically distinct.

**Table 19**

*Heterotrait-Monotrait-HTMT results*

	<b>Coach</b>	<b>Teammates</b>	<b>Family</b>	<b>Club</b>
<b>Coach</b>				
<b>Teammates</b>	<b>.733</b> CI <sub>900</sub> (0.713; 0.754)			
<b>Family</b>	<b>.676</b> CI <sub>900</sub> (0.653; 0.699)	<b>.849</b> CI <sub>900</sub> (0.803; 0.895)		
<b>Club</b>	<b>.742</b> CI <sub>900</sub> (0.719; 0.765)	<b>.766</b> CI <sub>900</sub> (0.748; 0.784)	<b>.661</b> CI <sub>900</sub> (0.633; 0.689)	

## CONVERGENT VALIDITY

In view of confirming to what extent the measures capture the common SASQ constructs, a convergent validity analysis was performed. It involved calculating the average factor loading for all the measures in each SASQ construct (i.e., the sum of the squared loadings divided by the number of measures). Convergent validities above  $r = .70$  are recommended, whereas those below  $r = .50$  should be avoided (Carlson & Herdman, 2012). However, research evidence suggests that actual levels of convergent validity in psychology research still vary widely (Carlson & Herdman, 2012). Therefore, without more specific guidance, researchers reach logically inconsistent conclusions, arguing that a convergent validity as low as  $r = .28$  (e.g., Larraza-Kintana et al., 2007) indicates the measures converge, whereas others report convergent analysis as high as  $r = .75$  (e.g., Podsakoff et al., 2018) signalling high convergence.

## Results

Results in Table 20 indicated that the measures of coach and teammates constructs (0.732 and 0.761) respectively reported high convergent validity. In contrast, both the measures of family and club constructs (0.657 and 0.631) respectively reported average or modest convergent validity.

**Table 20**

*Convergent validity results*

<b>Measures</b>	<b>Average factor loading (<i>r</i>)</b>
Coach	<b>0.732</b>
Teammates	<b>0.761</b>
Family	0.657
Club	0.631

## STUDY 4: SASQ STANDARDIZATION

During the fourth study, SASQ values were standardized by generating scores that ranked the measured factors in order to increase the reliability and generalizability.

### METHOD

#### Participants

The dataset in part 2 chapter 3 study (EFA and CFA respectively) were again used to standardize the SASQ scores. In total, the standardization analysis involved 543 participants (Mean age: 16.67, SD: 2.42, range: 12-21 years).

#### Data analysis

Once descriptive analyses were performed on the raw scores, focus was put on standardizing the SASQ scores. This was carried out using the *R* statistical software package, with the raw scores transformed into *Z*-scores. Three distribution groups were formed (i.e., low-achievers, average achievers, and high achievers) using a percentile score of 33.3 % for each of

the four SASQ dimensions (Figure 9). The following commands were entered into the *R* statistical software:

```
count_below_p33.3 <- sum(sample_data <= quantiles_values[1])
```

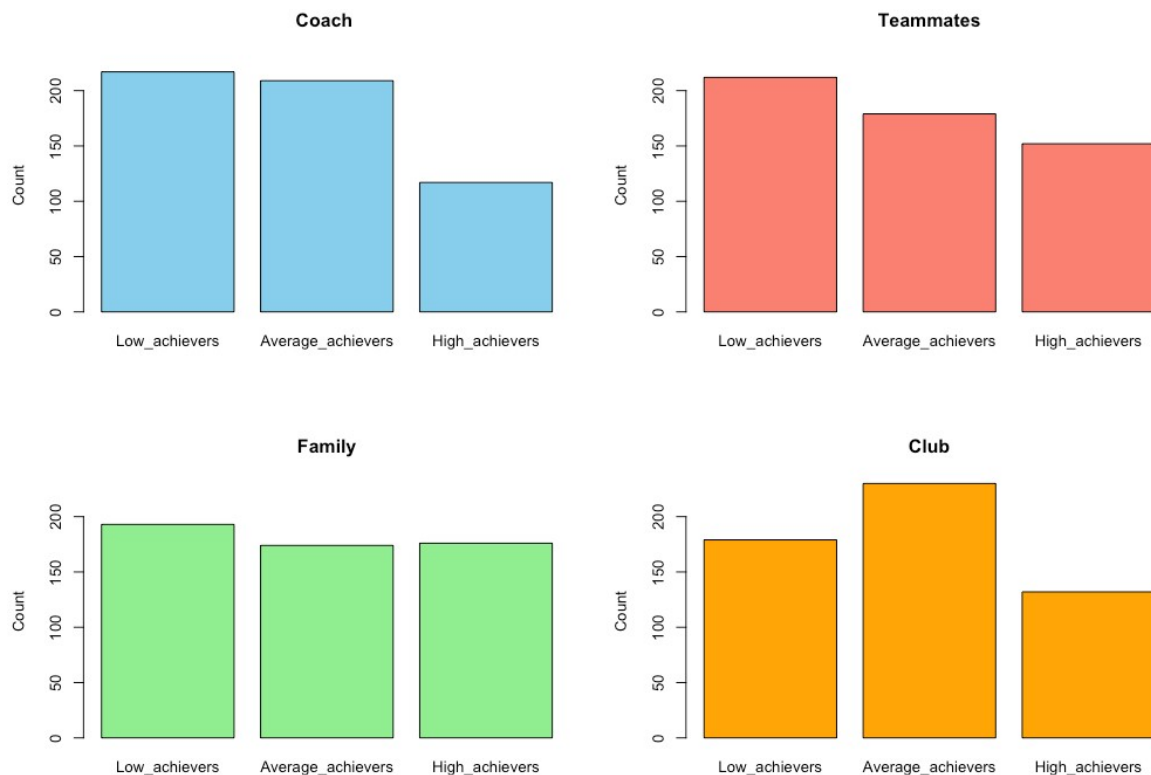
```
count_between_p33.4_p66.7 <- sum(sample_data > quantiles_values[1] & sample_data <= quantiles_values[2])
```

```
count_between_p66.8_p100 <- sum(sample_data > quantiles_values[2] & sample_data <= quantiles_values[3])
```

Scores between (1- 33) designated low achievers, scores between (34 – 66) designated average achievers, and finally, scores between (67 – 100) designated high achievers. For ease of interpretation, high achievers were described as athletes who were able to deploy the necessary SAS to deal with problematic experiences during club-to-club transfers. In contrast, low achievers were described as athletes who were not able to deploy SAS skills when confronted with problematic experiences during club-to-club transfers. Finally, average achievers were those athletes who could deploy some but not all of the SAS whenever faced with problematic experiences during club-to-club transfers.

**Figure 9**

*Group distribution/ranks of each of the four SASQ dimensions*



## RESULTS

For the coach dimension, most of the scores indicated low achievers with 41 % of the total score. In contrast, average and high achievers respectively represented 36 % and 23 % of the total score. In general, these results indicated that most of the athletes encountered problematic situations concerning the coaching dimension. For the teammates dimension, the low achiever group represented the highest percentage of the total score with 51 %, followed by high achievers at 26 % and average achievers at 23 %. The club dimension indicated that average achievers were the majority, with 45 % of the total score as opposed to 32 % and 23 % for the low and high achievers, respectively. A different situation was observed for the family dimension in that low achievers represented 38 % of the total score, while the average and high achievers each represented 31 %. In general, apart from the club dimension, for which the average achievers were the majority, low achievers were the majority in the remaining three

dimensions, clearly indicating that within the general French-speaking Swiss youth athlete population, most do not enact or deploy the SAS skills whenever faced with problematic experiences during club-to-club transfers.

For example, Alex, a footballer, obtained the following scores: coach: 20, teammates: 15, family: 9, and club:10, for a total SASQ score of 54. Using Table 21, Alex is an average achiever for the score on the coach dimension, part of 66.7 % of the general French-speaking Swiss population. Thus, 33.3 % of this general population had higher scores than Alex. The scores on the teammates dimension indicate that he is a high achiever and has higher scores than 66.7 % of the general study population. The score of 9 on the family dimension presents Alex as an average achiever, having outscored 66.7 % of the general study population while another 33.3 % had higher scores than he did. Last, with a score of 10 on the club dimension, he was a high achiever, with a higher score than 66.7 % of our general study population. Overall, Alex’s total percentage SASQ score was 53%.

**Table 21**

*SASQ scoring guide*

<b>Dimension (max score)</b>	<b>Low achievers 1 to 33.3 %</b>	<b>Average achievers 33.4% to 66.7%</b>	<b>High achievers ≥ 66.8 to 100%</b>
Coach (54)	≤ 17	18 to 36	≥ 37
Teammates (18)	≤ 6	7 to 12	≥ 13
Family (18)	≤ 6	7 to 12	≥ 13
Club (12)	≤ <u>4</u>	5 to 8	≥ <u>9</u>

As a result of creating a SASQ distribution profile as per the four dimensions, same dataset in part 2 chapter study 3 study (EFA and CFA respectively) was reused. Moreso, it involved a total of 543 participants (Mean age: 16.67, SD: 2.42, range: 12-21 years).

An examination of each of the three groups' (Mean, SD) reported that most individuals rated on the SASQ were classified as low achievers on all of the three dimensions (i.e., coach teammates, and family) except on club dimension which was represented mostly by average achievers (Table 22). These results indicate that, in general, most participants lacked the enactment and deployment of SAS and that only a few individuals could enact and/or deploy the necessary SAS during club-to-club transfers.

**Table 22**

*SASQ distribution profile as per dimension (Mean, SD)*

	<b>Low</b>	<b>Average</b>	<b>High</b>	<b>Total SASQ Score per</b>
<b>Dimension</b>	<b>Achievers</b>	<b>Achievers</b>	<b>Achievers</b>	<b>dimension</b>
Coach	<b>16.2 (1.09)</b>	11.08 (1.01)	8.54 (0.65)	54
Teammates	<b>5.82 (0.96)</b>	4.14 (0.06)	5.04 (1.11)	18
Family	<b>5.35 (1.85)</b>	3.21 (1.03)	3.00 (0.76)	18
Club	3.96 (0.77)	<b>5.04 (0.86)</b>	3.00 (0.54)	18

*Note:* Bold print indicates highest mean scores.

## **DISCUSSION**

The aim of the current chapter was to outline the initial development and validation of a questionnaire designed to assess the SAS levels of young athletes in talent development. In addition to providing regular feedback and refinement, SASQ instrument was also expected to identify areas that needed immediate attention, improvement or maintenance.

The current chapter demonstrated acceptable internal consistency when compared with previous studies and reference instruments, such as the Psychological Characteristics of Developing Excellence (PCDEQ) questionnaire (MacNamara & Collins, 2011) or the Talent Development Environment Questionnaire (TDEQ) (Martindale et al., 2010). More specifically,



given that the data from EFA analysis presented a general reliability of  $\alpha = 0.876$  and the reliability for each of the items ranging from  $\alpha = 0.865$  to  $\alpha = 0.875$ , SASQ should be considered a reliable instrument.

According to previous research (Owiti and Hauw, 2021), the 17 items spread over four factors were also satisfactory. Since the objective of the current study was to develop and validate an easily understandable instrument that measured relevant dimensions of the problematic experiences encountered by athletes during club-to-club transfers, a 17-item instrument was deemed important. The fact that the SASQ instrument retained the previously proposed four-factor model increases its value.

The structural equation modeling (SEM) results indicated that, in general, the SASQ model was adequate for validating the constructs. The EFA was able to reduce the number of SASQ items from 34 to 17 with four dimensions by selecting items that represented better psychometric properties. Consequently, substantial correlations indicated excellent validity, as confirmed by CFA yielding four stable factors. The construct validity of the SASQ agreed with the findings of Owiti and colleague (Owiti and Hauw, 2021), who also reported a four-factor model related to coach, teammates, family and friends, and club. In this sense, the dimensions of the resulting scale encompass all possible levels of the social adaptability skills that athletes require during club-to-club transfers.

Regarding the model fit of the CFA, various criteria in validating the fit indices were considered. According to several studies (Cid et al., 2022; Fabrigar et al., 1999; Field, 2020; Peugh & Feldon, 2020; Yuan et al., 2016), RMSEA values greater than 0.1 indicate poor performance, between 0.08 and 0.10, acceptable, and less than 0.05 indicate acceptable performance. The current study reported a RMSEA value of 0.057 indicating an acceptable fit index. Similarly, the TLI value of 0.901 in the current study presented an acceptable value (Arbuckle, 2013; Biddle, Markland et al., 2001; Hu & Bentler, 1999; Marsh, Hau et al., 2004;

Peugh & Feldon, 2020; Yuan, Chan et al., 2016). The SRMR values of  $\leq 0.08$  indicate good fit (Hu & Bentler, 1999) therefore, the current study reported a SRMR value of 0.07. The Chi-square result was significant, and it has been suggested that this value is sensitive to the sample size. It was therefore normalized and had an acceptable result of below 3 (Bentler, 1990; Hoyle, 2013; Rodrigues et al., 2019). Based on these indices, this sample fits a four-factor model reasonably well.

The computational yield for the discriminant validity in the current study reported the following results: (Coach and Teammates = 0.733; Coach and Family = 0.676; Coach and Club = 0.742; Family and Teammates = 0.849; Club and Family = 0.661; Teammates and Club = 0.766). Comparing these results with the threshold values as defined in HTMT (Carlson & Herdman, 2012) suggested that discriminant validity had been established. Further test of convergent validity which reflects the extent to which measures capture common constructs reported the following results: (Coach = 0.732; Teammates = 0.761; Family = 0.657; Club = 0.631). Convergent validity range ( $r = .70$  and above) being recommended whereas range ( $r = 0.5$  and below) is to be rejected (Carlson & Herdman, 2012).

The results of the LCA for predicting SAS enactment and deployment by athletes replicated findings of the CFA underlying the benefits of combining these two methodologies. In applying the predictive validity of the SASQ items, the existence of three specific participant profiles that could be differentially related to SAS during club-to-club transfer was confirmed. Results of the LCA suggested that the SASQ could discriminate participants into three characteristic profiles (example: low achievers, average achievers, and high achievers). In line with the LCA approach, athletes could be clustered into meaningful and relatively homogenous classes on the basis of the SASQ-17 item scores.

According to the current study findings, categories established on the basis of the SASQ 17-items were associated with distinct outcomes such as a participant being either in a low,

average, or high achiever group. It highlighted the possibility to perform SASQ scores-based predictions through a process of group categorization. In this case SASQ data could be collected as part of routine psychosocial skills training within talent and development programs. Indeed, and in line with the results of the present study, SASQ items could be used as a first step to identify specific subgroups when athletes transfer from one club to another. In a second step, specific profile membership and its association with important variables could be used to inform the coach and club decisions.

## **CHAPTER 4: SOCIAL ADAPTABILITY SKILLS EDUCATIONAL SESSION WITHIN A TEAM SPORT CONTEXT**

### **General overview**

In part 2 chapter 1 and 2, a range of psychosocial resources known as SAS which contributes to enacting successful or unsuccessful club-to-club transfers were identified. They comprised of seven psychosocial skills which were later grouped in mental skills, learning methods, and interpersonal skills. Consequently, in part 2 chapter 3, a psychometric measure (SASQ) to assess the propensities of young athletes to enact SAS was developed. The SASQ appears to be a promising psychometric instrument of potential usefulness for education and program reviews in applied setting and a measurement tool in talent development research. As a follow up to the preceding three chapters, part 2 chapter 4 study was concerned with a SAS educational session intervention to assist the athletes develop the propensities to enact the necessary SAS required during club-to-club transfer. In addition, an Acceptance and Commitment Therapy (ACT) was carried out simultaneously with the SAS educational intervention to aide in reinforcing the development of the psychosocial skills.

## INTRODUCTION

There is a growing use of psychological interventions in sport thanks to their positive influence on the psychological well-being (Breslin et al., 2017; Golby and Wood, 2016) and in sports performance (Brown & Fletcher, 2017; Gross et al., 2018; Moore, 2009). In addition, psychological intervention training has been reported to help improve several psychological variables such as motivation, concentration, self-confidence, or activation level (Beckmann and Elbe, 2015, Olmedilla and Domínguez-Igual, 2016), as well as the acquisition of psychological skills and resources to manage sport practice and competition (McCormick et al., 2018; Simonsmeier & Buecker, 2017). In part 2 chapter 1 study, it was reported that athletes require several psychosocial skills to overcome the challenges of club-to-club transfers (e.g., goal-setting, self-discipline, self-organisation, interpersonal skills, motivation and confidence, positive thinking, and autonomy). Although these psychosocial skills may not provide increment of the athlete's performance on their own, they can assist athletes (in conjunction with other physical, technical, and tactical training) with achieving excellence (Macnamara et al., 2010; Martindale et al., 2010).

Therefore, an educational intervention session to train the young athletes on how to develop and enact the SAS required during club-to-club transfer was designed. The educational intervention session was administered concurrently with a modern psychological training program called Acceptance and Commitment Therapy (ACT) to offer a reinforcing effect. This is in contrast to a majority of interventions that have used traditional Psychological Skills Training (PST) based on cognitive techniques and principles (Gustafsson et al., 2017).

During the past decade, there has been considerable interest in the development of psychological interventions designed to improve athletic performance. A majority of these interventions have applied traditional Psychological Skills Training (PST) based on cognitive techniques and principles (Gustafsson et al., 2017). In PST, cognitive-behavioural techniques

are employed to enhance athletic performance through the control, elimination and replacement of negative thoughts and emotions. In contrast, there is a growing body of evidence supporting interventions that emphasize acceptance rather than cognitive-behavioural control techniques (Hayes et al., 1999; Roemer & Orsillo, 2002; Segal et al., 2002). As a result of the new method, one can attain greater athletic performance through strategies and techniques that target the development of mindful present-moment acceptance of internal experiences such as thoughts, feelings, valued goals, enhanced attention to external cues, and responses (Gardner, 2009; Gardner & Moore, 2004; Lindsay & Cresswell, 2017; Moore, 2009). The following paragraphs examine both traditional and new methodologies as well as the underlying effects of new methods on athletes' performance.

Theoretical assumptions underlying PST foundation procedures have been questioned. A key principle of PST is the belief that, a reduction of negative emotions and bodily states, and associated increases in positive cognitions and confidence levels are directly related to an “*ideal performance state*” which in turn is directly related to optimal athletic level (Hardy & Callow, 1999). Researchers have studied the mechanisms reinforcing the effects of traditional PST programs but have not been able to substantiate the assumptions underlying PST principles. A clear conclusion of these studies has indicated that striving for mental control in an attempt to get rid of unwanted emotional and mental content ends up not only being unsuccessful but may paradoxically even be counterproductive (Burton, 1989; Daw & Burton, 1994; Holm., 1996; Lundgren et al., 2020; Maynard et al., 1995; Murphy & Woolfolk, 1987; Roemer et al., 2015; Weinberg et al., 1981). This assumption is supported by the theory of “*ironic mental processes*”, which states that struggling to control or suppress a certain thought may often lead to an increasing engagement in the very thought one tries to avoid (Feldner et al., 2003; Wegner, 1994; Wenzlaff & Wegner, 2000; Masters & Maxwell, 2008).

A growing number of literatures have recently challenged the assumption that "negative" experiences invariably lead to negative behavioural outcomes (Hayes et al., 1999). Adapted from clinical research regarding Mindfulness and Acceptance Based Interventions (MABI) (Khoury et al., 2013), Gardner and Moore (2004, 2012) introduced the Mindfulness-Acceptance-Commitment (MAC) protocol, specifically designed to enhance athletic performance. With its foundation in Acceptance and Commitment Therapy (ACT; Hayes et al., 1999), the MAC approach offers athletes an alternative way to enhance their performance that challenges well-established principles of PST. The MAC approach suggests that when an individual has a negative emotional response to an external stimulus (example: anxiety due to coach expectations), and then directly thinks about the stimulus (example: I can't keep up), it is in the interest of the athlete to accept the negative stimulus as a way of surpassing the challenge.

As opposed to controlling or reducing internal experiences, emerging approaches to psychological interventions emphasize mindful awareness and acceptance of in the moment-cognitive, affective, and sensory experiences without passing neither a positive nor a negative judgement (e.g., without assessment). As part of human existence, internal experiences are seen as naturally occurring events that come and go. Consequently, human difficulties are attributed to a tendency for individuals to "fuse" their internal experiences such as thoughts, feelings, and other self-evaluations which in turn triggers behavioural choices (Hayes & Fieldman, 2004; Hayes et al., 1999). Thus, rather than engaging in a way that reflects commitment to valued goals, competitive choices and behaviours are often used to avoid and limit unacceptable or uncomfortable internal experiences.

Various researchers have tried to identify the most effective coping strategies (e.g., task-oriented, goal-oriented and emotion focused) that could enable athletes manage stressors during their development (Gaudreau & Blondin, 2004a, 2004b; Gaudreau et al., 2002; Nicholls et al.,

2016; Stanton et al., 2020). The closest coping strategy which aligns with the ACT approach is the emotion focused coping strategy which is meant to regulate emotional response to stressors. It consists of two primary components including *emotional processing*, the acknowledgment, understanding, and acceptance of one's emotions, and *emotional expression*, the verbal or nonverbal disclosure of one's emotions (Juth et al., 2015; Stanton et al., 2000; Santo & Low, 2012). However, it should be noted that changing the way an athlete copes does not instantly fix the stressor/challenge(s) since it may require time and effort on the part of both the athlete and the coach. Nevertheless, making decisions on the type of coping approach to adapt could be beneficial in overcoming the stressors/challenges (Nicholls et al., 2016).

A skill development approach was incorporated into both the ACT and PST educational intervention sessions in an effort to help young athletes develop and enact the necessary SAS whenever faced with CCT challenges. This approach was based on the academic work of Collins and colleagues (Collins et al., 2010) which introduced a four-letter process (i.e., develop- challenge- refine- retest colloquially referred to as teach- test- tweak- repeat- Collins et al., 2016b). It involved offering educational intervention sessions to the young upcoming athletes to develop and enact SAS through both ACT and PST methods in assisting them counter roadblocks during CCT. Through the use of the teach- test-tweak- repeat cycle, the developing athletes got used to handling CCT challenges, accepting temporary setbacks while simultaneously building a long-term approach. Consequently, there is emerging evidence that the skills such as SAS can be taught, with consequential impact on performer's ability to cope with developmental challenges (Collins et al., 2010). For example, the Developing the Potential of Young People in Sport (DPYPS- Collins et al., 2010) which formally taught, encouraged, modeled, and refined, then transferred the PCDE's using a variety of means. Results showed that young participants were able to apply PCDE's to a wide range of challenges, from both



within and outside their sporting environment helping them maintain progress and development.

Therefore, the main objectives of the current study were two-fold; (i) to administer the SAS educational session within a talent development program in order to assist young athletes develop and enact psychosocial resources required during CCT, and (ii) to determine which of the two methods (e.g., ACT or PST) provided an optimal reinforcing effect when implemented in conjunction with SAS intervention.

### **Hypotheses for the current study**

H<sub>1</sub> - At the end of both post-test and retention period, participants in ACT-group A will have higher scores in SASQ as compared to both PST-group B & active Control-group C indicating the effectiveness of the SAS educational intervention.

H<sub>2</sub> - At the end of both the post-test and the retention test, participants in PST-group B will have higher scores in ACSIQ than participants in ACT-group A and active Control-group C.

H<sub>3</sub> - At the end of both post-test and the retention test, ACT-group A will have higher scores in AMSQ than both PST-group B and active Control-group C indicating that both ACT in conjunction with SAS works well as opposed to PST on its own.

## **METHOD**

### **Design**

Letters including a presentation of the current study and an inquiry to let their athletes participate in a repeated measure study were emailed to the respective club's president and coaches. Clubs interested in participating were invited to meetings where the study was explained in depth. In addition, permission to present the study to the athletes was given by representatives (i.e., club president and coaches). All participants received written information about the study and were asked to sign an informed consent form. Consequently, participants

were informed that the data would be kept confidential and that they could withdraw from the study at any time.

**Inclusion and exclusion criteria**

Only those participants enrolled in their respective academy clubs' and nearing the end of their professional careers participated in the current study. Players who were about to transition to the professional level were selected since they provided rich data on the enactment and deployment of SAS during club-to-club transfers. (CIES, 2019). The SASQ was developed to measure the propensities of young athletes who are about to transition into professional stage. Having identified the necessary psychosocial skills required during club-to-club transfers (CCT), these skills could be integrated into existing TID models so that young athletes learn them at an early stage during their development. This approach justified the inclusion of young athletes in development. Prior experience in mindfulness and acceptance-based practices was accessed on a nominal scale (Yes-No) and open follow-up questions where the participants were asked to specify the type of practice (see Table 23).

**Table 23**

*Descriptive statistics of previous experiences of meditation-related practices*

	Participants
<i>N</i>	104
Prior experience of meditation-related practice	2
Relaxation	0
Meditation	0
Yoga	0
Pilates	0

Only participants with no experience in mindfulness and acceptance-based techniques were recruited for the study. Similar nominal scales of Yes or No answers have been successfully applied in research (Josefsson et al.,2019).

### Participants

One hundred and two participants (85 men and 17 women; age range 15 – 21; Mean = 18.38, SD = 1.09; sports type 69 % played basketball while 31 % played unihockey) were recruited for this study. A G\* power statistical analysis program (Faul et al., 2007) for repeated measure, within-between interaction indicated that the minimum sample size to yield a statistical power of at least 0.8 with an alpha of 0.05 and a medium effect size ( $d = 0.5$ ) was a minimum of 27 participants per intervention group. Two participants were excluded from the current study due to previous experiences in meditation and mindfulness practices. The overall means and standard deviations for educational intervention attendance rates (a maximum of between 3-4 sessions depending on the group) were Mean = 2.53 (SD = 0.31) and Mean = 3.45 (SD = 0.64), respectively.

### Procedure

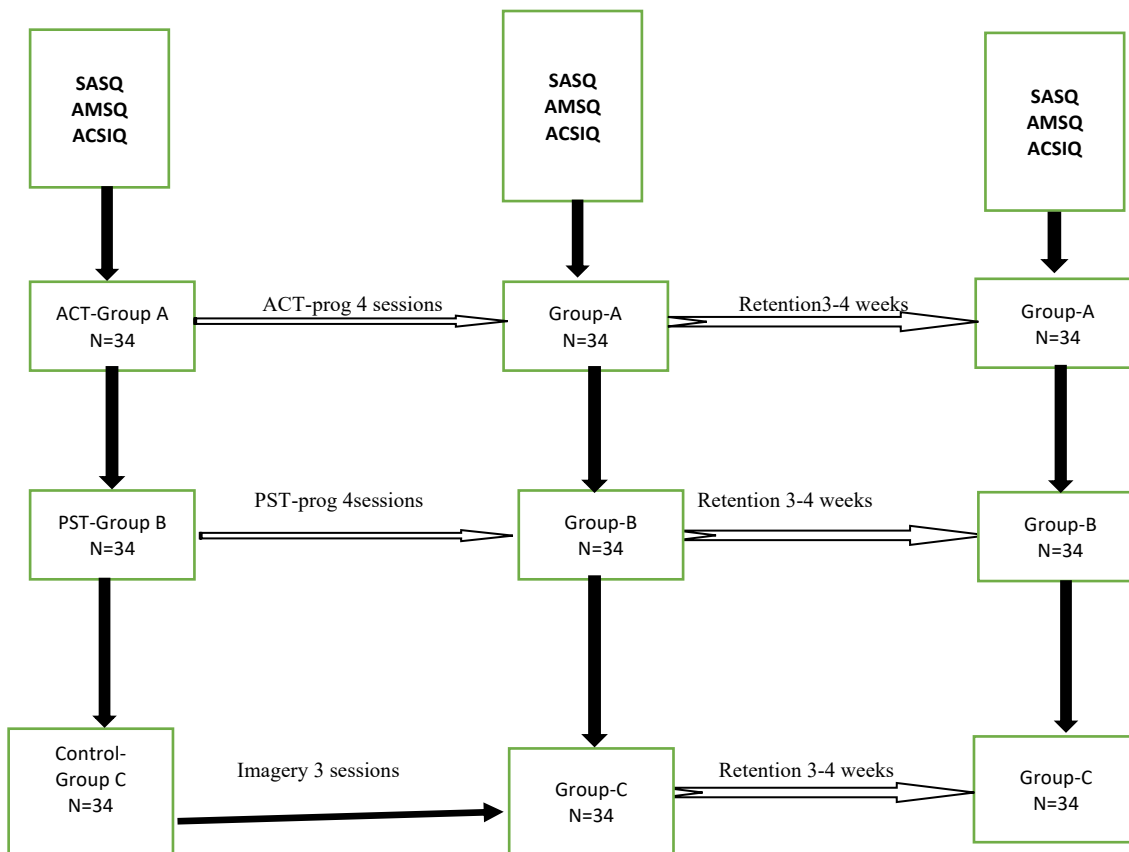
The participants gave their written informed consent after which self-administered paper-pencil questionnaires (Social Adaptability Skill Questionnaire- SASQ, Athlete Mindfulness Skills Questionnaire- AMSQ, and Athletic Coping Skill Inventory Questionnaire- ACSIQ) were distributed to the 102 participants.

Using the SASQ scoring guide results at pre-test, participants were grouped into either of the three categories (e.g., low achievers, average achievers, and high achievers). Taking into account the three groups, all the high achievers were assigned to an active Control group (CG). Consequently, in forming two homogeneous groups, the score range of participants who scored low (low achievers) was used to randomly assign them to either the new methodology group of the Acceptance and Commitment Therapy (ACT group) or the Psychological Skills Training

(PST group). The same procedure was performed for participants who average scores (average achievers) by randomly assigning them to either ACT group or PST group. In summary, the current study intervention had three groups: ACT group ( $N = 34$ ), PST group ( $N = 34$ ), and active Control Group ( $N = 34$ ) (See Table 24).

**Table 24**

*Intervention protocol diagram*



Social Adaptability Skills Questionnaire = SASQ

Athlete Mindfulness Skills Questionnaire = AMSQ

Athletic Coping Skill Inventory Questionnaire = ACSIQ

ACT-prog = Acceptance & Commitment Theory Training Program

PST-prog = Psychological Skills Training- program

Imagery shooting skill session

The intervention procedure involved administering the SASQ, AMSQ, and ACSIQ at three points (pre-test, post-test, and retention-test). After pre-test, the ACT group was administered four sessions of the ACT intervention program while the PST group received four sessions of the PST intervention program all lasting four weeks. On the contrary, the active

control group received an imagery shooting skill program during three sessions within a duration of three weeks. Once all the sessions were done, the three groups were tested again (post-test using SASQ, AMSQ, and ACSIQ). A period of between 3-4 weeks was observed and the three groups tested again (retention-test using SASQ, AMSQ, and ACSIQ). In summary, the first data collection (pre-test) was administered prior to the first session, the second data collection prior to the third or fourth educational session, and the third data collection after the last educational session. Thus, the interval was approximately three to four weeks between each data collection.

### **The ACT-Program Manual (see Appendix J for a detailed program)**

The sessions were done weekly, thereby leaving 6 to 7 days between session 1 and session 2. A time difference of 6 – 7 days was viewed as a good timing to enable the participants integrate the learnings from the educational sessions. Mindfulness literature suggests that the different terms applied within ACT might be challenging during interventions. For example, Grossman and colleague (Grossman and Van Dam, 2011) argue that although mindfulness questionnaires have shown positive psychometric properties, these questionnaires have been criticized for several reasons: the understanding of keywords frequently used in measures e.g., “*paying attention*”, “*awareness*”, “*acceptance*”, “*judging*” is dependent on previous experience and/or familiarity with mindfulness practice. Additionally, the concordance between how a mindful person thinks he/she is and his/her true level of mindfulness may not necessarily be sufficiently accurate (Grossman & Van Dam, 2011). Therefore, to “minimise” such risks and also being aware of the participants age group (young developing athletes), it was necessary to explain in detail what the ACT terminologies meant. The mindfulness terminologies were explained with an intention of minimising the risk of misunderstanding the terms and their application (*see glossary*).

### Session 1: Acceptance (25 minutes)

Introduction and setting overall aims of session 1 educational session (5 minutes).

The session started by setting out the introduction and the overall aims of the first educational class. This was followed by an introduction of what “Acceptance” meant and how it related to the challenges athletes faced when they encounter CCT.

*The fisherman’s analogy in building a flexible mind (20 minutes- involved participants commenting and discussing the analogy) (Haww, 2023)*

Take the example of the fishhook. Imagine you’re a fish swimming along the shore where fishermen are trying to catch you. You have four possibilities. First you could take the risk of getting caught and “fight” the fisherman like in the battle of the blue marlin during big-game fishing: you fight, resist, dive, jump and sometimes manage to come off the hook...or not. Another solution is “flight” toward other parts of the sea. The third option is to become immobile (freeze) until the fishermen goes home. The fourth solution is surprising: look carefully at the fishhooks and then don’t get caught! Continue swimming between them, seeing the dangers but remaining confident because you know the problems are there but also that you are able to avoid them. After the fisherman analogy, the participants commented and discussed on the topic before being asked if they had any questions or remarks to make. The educational session came to an end at this point.

### Session 2: Commitment (25 minutes)

Introduction and setting overall aims of session 2 educational session (5 minutes).

The session started by setting out the introduction and the overall aims of the second educational class. This was followed by an introduction of what “Commitment” meant and how it related to the challenges athletes face when they encounter club-to-club transfers. Continuing from the previous educational session, an introduction and definition of what a stressor meant in the current context was provided.

### Exercise 1: 10 minutes

The participants were then asked to note down all the stressors (using the fisherman's analogy) they encountered during club-to-club transfers. For example; difficulties with being away from family and friends (feeling home-sick), having less play time, difficulties with teammates, not satisfied with the club's support and logistics, difficulties with unstructured trainings etc.

#### The Importance of having a flexible mind (5 minutes)

This part started by the author educating the participants on how important it is to have a flexible mind. The following is an excerpt of the speech *“A key point is to build a flexible mind, meaning one that is not blocked or focused and obsessed with negative emotions. A flexible mind means having the capacity to use positive experience for your own concerns, the capacity to accept negative aspects as normal and as challenges for future development, and the capacity to develop presence in a situation. Rather than struggling and trying to control stressful situations that decrease your confidence, accepting these situations as normal facets of sporting life will help you in working on your confidence”*.

### Exercise 2: 5 minutes

In applying the fisherman's analogy, the participants were requested to note down the type of approach they would use against the stressors they mentioned in exercise 1. In addition, the participants were required to write down the reason/s why they chose that specific approach. The author reinstated the acceptance attitude at the end of the exercise with the following sentence *“The attitude of acceptance means refusing to engage in immediate reactive behaviors but instead keeping in mind a commitment to personal values that direct you to more thoughtful behavior. Personal values are important in your sport practice as well as in the directions you pursue. Values are not the outcome (the goals), but the reasons why you set the goals”* The

participants were asked if they had any questions or remarks to make before ending the second educational session.

### Session 3: Present moment (25 minutes)

#### Introduction and setting overall aims of session 2 educational session (5 minutes)

The author started by setting out an introduction and the overall aims of the third educational class. This was followed by an introduction of what being in the “present moment” meant and how it related to the challenges athletes encounter during club-to-club transfers.

#### Exercise 1: Practice on breathing exercise (10 minutes)

At first, breathing exercise was introduced to the participants. The aim was to train the participants to become increasingly aware of their thoughts, emotions, and feelings (e.g., being in the present moment), and continue to change their focus so that they actively direct attention to, and act effectively towards improving the value of why they participate in sports. This exercise was performed by requiring the participants to take slow deep breath inhaling through the nose followed by breathing out (exhaling) through the mouth.

#### Exercise 2: Breathing out the stressor exercise (10 minutes)

The participants were requested to choose a stressor, for example: “taking an example of when they were having difficulties adjusting to coach expectations”. Participants had to identify five positive things that helped them overcome the obstacle(s), in contrast, they also had to choose five things that acted as an obstacle(s). They were asked to get themselves into a comfortable position, using the breathing technique practiced at the beginning, taking five positive things to inhale deeply followed by five negative things to exhale”. Participants were encouraged to repeat the same exercise while applying different challenges. Following the second exercise, participants were asked a series of questions concerning their "value" in participating in sports. For example, “*If you encounter problems with your coach or if you change from one club to the other, what are your values?*” The follow up question involved



being in the present moment, for example “*after transferring from your present club to another club, you encounter a problem(s) with your teammates, are you able to handle the challenge?*”

In conclusion, the third educational session ended with the participants being asked if they had any questions or remarks.

#### Session 4: Summary & ACT-program evaluation (25 minutes)

##### Introduction and setting overall aims of session four educational session (5 minutes)

The author started by setting out an introduction and the overall aims of the fourth educational class. It involved making a summary of the previous three sessions (acceptance, commitment, and being in the present moment).

##### Participant comments (10 minutes)

Participants were encouraged to ask questions concerning the topics discussed during the previous three sessions. Furthermore, they were asked if there were any specific exercises already covered (e.g., practicing breathing) they would like the author to discuss in detail. In addition, they were encouraged to apply the lessons/skills they learned during the ACT program all throughout their professional careers. Finally, participants were given an opportunity to ask any question(s) or make any remark(s). Season four program came to an end followed by an ACT-program evaluation.

##### Evaluation of ACT program (5 minutes)

An adapted version of the credibility/expectancy questionnaire (Deville and Borkovec, 2000) was used to evaluate the feasibility of the ACT-program. The following questions were asked:

- (i) Was the ACT intervention program important for you as an athlete?
- (ii) Did the ACT intervention program help you develop skills needed to overcome obstacles?
- (iii) Would you recommend the ACT intervention program to other athletes?

Items 1 and 2 were rated on a 1 – 4-point scale (1= not at all, 2= a little bit, 3= much, 4= very much) while item 3 was rated as either yes or no.

### **The PST-Program Manual**

Session 1: Goal-setting (25 minutes)

Introduction and setting overall aims of first educational session (5 minutes)

The author started by setting out an introduction and the overall aims of the first educational class. This was followed by an introduction of what “Goal-setting” meant (short and long-term goals) and how it related to the challenges athletes face when they encounter club-to-club transfers.

What are “SMART” goals? (10 minutes)

The author explained the meaning of the “SMART” acronym and how it related to the goals athletes set (e.g., *Specific, Measurable, Achievable, Relevant, and Time-bound*).

Exercise: (15 minutes)

Participants were asked to choose any challenge(s) they had encountered during club-to-club transfer(s). Moreover, they were required to write down how they overcame the said challenge(s). Once the participants had written down the skill(s) they deployed to overcome the challenge(s), additionally, they were required to set goals for overcoming the said challenge. Finally, participants were advised to apply “SMART” in evaluating whether their goals matched the acronym. For example, a player frustrated by the coach’s decision of not having enough play time indicated the challenge as “frustration due to less play time.” The player suggested that in order to gain the coach’s confidence, he/she had to work extra hard on their areas of weakness (e.g., extra training in shooting exercises). In applying the acronym, the participant evaluated the set goals and verified if they had set SMART goals. Finally, participants were asked if they had any question(s) or remark(s) to make, after which the educational session ended at this point.

## Session 2: Coping (25 minutes)

### Introduction and setting overall aims of second educational session (5 minutes)

The author started by setting out an introduction and the overall aims of the second educational class. This was followed by an introduction of what coping meant in the current context.

### Coping strategies (10 minutes)

The author presented a “problem-focused strategy” as one of the skills applied in coping. It included all the active efforts applied to manage stressful situations in eliminating the source of stress via individual behaviour change. For example, athletes who felt homesick by being away from their family and friends might improve their social relationships by going out more, calling friends etc.

### Exercise: 10 minutes

The participants were asked to write down some of the challenge(s) they had encountered during club-to-club transfers. Next to each challenge, they were also required to write the problem-focused coping strategies they applied in overcoming the challenge(s). Participants willing to share their experiences were encouraged to do so with the group. The participants were asked if they had any questions or remarks to make. The educational session came to an end at this point.

## Session 3: Self-Confidence (25 minutes)

### Introduction and setting overall aims of 3rd educational session (5 minutes)

The author started by setting out an introduction and the overall aims of the third educational class. This was followed by an introduction to what “self-confidence” meant within the current context and how it related to the challenges athletes encountered during club-to club transfers.

### Developing Self-confidence (10 minutes)

The author provided several ways of developing self-confidence, for example, surrounding oneself with positive and supportive people, focusing on positive qualities, using positive self-affirmations, challenging oneself, practising self-care, and recognizing what you are good at (i.e., I can do this...) to build self-confidence.

### Exercise: (10 minutes).

Participants were required to write down their challenges during club-to-club transfers. In addition, next to each written point, they were asked to indicate whether they valued and perceived themselves based on their beliefs and opinions that they would overcome the challenge. Participants willing to share the experiences they had written down were encouraged to do so with their colleagues. In conclusion, participants were asked if they had any questions or remarks to make after which the educational session came to an end at this point.

### Session 4: Summary & PST-program evaluation (25 minutes)

#### Introduction and setting overall aims of session fourth educational session (5 minutes)

The author started by setting out an introduction and the overall aims of the fourth educational class. It involved summarizing the previous three sessions (goal-setting, coping, and self-confidence).

### Participant comments (10 minutes)

Participants were encouraged to ask questions about the topics discussed during the previous three sessions. In addition, they were also required to indicate if there were any specific exercises (i.e., making SMART goals) already covered that they felt needed further discussion. Participants were requested to continue applying the lessons/skills they learnt during the PST program throughout their professional lives. Finally, the participants were asked if they had any question(s) or remark(s) to make, after which the educational session ended at this point followed by an evaluation of the PST program.

Evaluation of PST program (5 minutes)

An adapted version of the credibility/expectancy questionnaire (Deville and Borkovec, 2000) was used to evaluate the feasibility of the PST program. The following questions were asked:

- (i) Was the PST intervention program important for you as an athlete?
- (ii) Did the PST intervention program help you develop skills to overcome obstacles?
- (iii) Would you recommend the PST intervention program to other athletes?

Items 1 and 2 were rated on a 1 – 4 scale (1 not at all, 2 a little bit, 3 much, 4 very much), while item 3 was rated as either yes or no.

### **Imagery Shooting Skill Program Manual (active Control Group)**

Session 1: Imagery skill (20 minutes)

Introduction and setting overall aims of first imagery session (5 minutes)

The author started by setting out an introduction and the overall aims of the first education class. This was followed by an introduction to imagery skill and how it can be applied in sports context to improve basketball shooting skills.

An example of an athlete who has practiced imagery use (10 minutes)

The author gave an example below to show the participants how athletes from junior to elite level deploy imagery skill during practice and competition. For instance, an example of Brazilian footballer Ronaldinho describing how he employs imagery for game preparation and strategy purposes was provided:

*“When i train, i concentrate on creating a mental picture of how best to deliver the ball to a teammate, preferably leaving him alone in front of the rival goalkeeper. So, what i do, always before a game, always, every night and every day, is try and think up things, imagine plays, which no one else will have thought of, and to do so always bearing in mind the particular strength of each teammate to whom i am passing the ball. When i construct*

*those plays in my mind, i take into account whether one teammate likes to receive the ball at his feet or ahead of him, if he is good with his head, and how he prefers to head the ball, if he is stronger on his right or his left foot. That is my job. That is what i do. I imagine the game”.*

The participants were asked to note whether they had ever practiced imagery use in their lives and also to indicate under what circumstances. The group discussed their responses, focusing mostly on how the deployment of imagery was used and whether it was necessary. The participants were asked if they had any question(s) or remark(s) to make after which the educational session came to an end at this point.

#### Session 2: Introducing PETTLEP- the 7 key element (20 minutes)

During this session, the author started by setting out an introduction and the overall aims of the first educational class. The previous discussion concerning imagery (first session) was reviewed. Consequently, the PETTLEP carrying out the seven critical factors of imagery use were explained:

**Physical** – image the relevant physical characteristics. For example, a basketballer would imagine being dressed in their kit while holding the basketball in their hands.

**Environment** – if possible, the image in the background where the performance occurs, e.g., a basketball court.

**Task** – try to image details relevant to the task (e.g., attentional demands) and image at the appropriate level of expertise for the performer (i.e., a novice basketballer should avoid imagining an elite-level player as it is not as functionally equivalent).

**Timing** – the most functionally equivalent approach is to image in “real-time”, but “slow motion” imagery can be used to emphasize and perfect more difficult aspects of a skill (Jenny & Hall, 2009). For example, a basketballer may wish to “slow motion” image a particularly tricky piece of shooting.

**Learning** – the imagery should be continually adapted and reviewed over time to match changing task demands and the athlete's experience level. For example, as novice basketballer progresses and masters a skill, they should adapt the imagery to reflect their performance improvement.

**Emotion** – include the same images that would be felt in the physical situation. However, try to avoid debilitating emotions (e.g., fear, panic). For example, a player imaging taking a three-point shot would include feelings of confidence and adrenaline rushes.

**Perspective** – the imagery perspective can be first person (through your eyes) or third person (like watching yourself on video). However, one view may be more advantageous depending on the task characteristics. A first-person perspective (or internal visual imagery) may be more beneficial for tasks including open skills and with a focus on timing (e.g., tackling). On the other hand, a third-person perspective (or external visual imagery) is preferred for tasks where form and positioning are essential, such as heading the ball or kicking technique (Gould et al., 2014; Hardy & Callow, 1999).

The participants were asked if they had any questions or remarks to make. The educational session came to an end at this point.

*Session 3: (Imaging a shooting skill using PETTLEP as a guide) (25 min).*

As usual, the author started by setting out an introduction and the overall aims of the second educational class. A review of the previous class concerning PETTLEP as a guide to imagery use was done.

*Exercise: How to improve a shooting skill using imagery*

The participants were required to use the PETTLEP as a guide in creating an imagery scene of a perfect shot (Holmes & Collins, 2001). The following example was given: The participants were required to include all the relevant physical characteristics in their imagination for the letter **Physical**. It had the participant imaging fully dressed up, standing in

a shooting position with the ball or bat held in his hand. The participants were asked to do the same with the remaining PETTLEP letters. At the end of the exercise, there was a general discussion on how effective the participants felt about imagining themselves taking the shoot. At this point, individual discussions were also encouraged with the author. The participants were also asked to continue using imagery in sporting areas they wanted to improve.

Finally, the participants were asked if they had any questions or remarks to make, after which an imagery use evaluation was given. The assessment included the following questions:

*Evaluation of Imagery skill use program (5 minutes)*

An adapted version of the credibility/expectancy questionnaire (Deville and Borkovec, 2000) was used to evaluate the feasibility of the imagery skill use program. The following questions were asked:

- (i) Was the imagery intervention program important for you as an athlete?
- (ii) Did the imagery intervention program help you develop your shooting skills?
- (iii) Would you recommend the imagery intervention program to other athletes?

Items 1 and 2 were rated on a 1 – 4-point scale (1 not at all, 2 a little bit, 3 much, 4 very much) while item 3 was rated as either yes or no (see Table 25 for results).

**Table 25**

*Evaluation summary results of the three intervention programs*

Question	ACT		PST		Shooting	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
1. Was the intervention program important for you as an athlete?	3.68	0.58	3.67	0.66	3.77	0.49
2. Did the intervention program help you develop skills needed to overcome obstacles?	3.78	0.65	3.89	0.56	3.88	0.45
3. Was the intervention program important for you as an athlete?	98 % Answered Yes		100 % Answered Yes		97 % Answered Yes	



## PSYCHOMETRIC MEASUREMENTS

The following three psychometric measurements were used in measuring the participants during the intervention sessions longitudinally (e.g., pre-test, post-test, and retention-test).

### Social Adaptability Skills Questionnaire (SASQ) (see Appendix C)

The SASQ is a recently developed 17-item questionnaire (Owiti and Hauw, 2023), using a 6-point Likert scale (1 = *very strongly disagree*, 2 = *strongly disagree*, 3 = *mildly disagree*, 4, *mildly agree*, 5 = *strongly agree*, and 6 = *very strongly agree*), designed to assess enactment and deployment of social adaptability skills in sport context during club-to-club transfers. It consists of 4 subscales: adapting to coach (example: *I have difficulties listening to coaches/trainers that i don't know*), adapting to teammates (example: *I find that relations between teammates are not usually spontaneous but always interesting*), adapting to being away from family and friends (example: *I don't encounter any particular difficulties whenever i am away from my family (for example, during internships or camps away from home)*), and adapting to the club (example: *I wouldn't accept to play in a club whose training facilities are not of high quality*). Initial analysis indicates good validity and reliability. Higher scores indicate greater dispositional and deployment of social adaptability skills during club-to-club transfers. In the present study, the reliability coefficients were = 0.85 (pre-test), = 0.89 (post-test), and = 0.88 (retention test).

### Athlete Mindfulness Skills Questionnaire (AMSQ) (see Appendix D)

The AMSQ is a 16-item questionnaire developed using a 5-point Likert scale (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Neither agree nor disagree*; 4 = *Agree*; 5 = *Strongly agree*) (Zhang et al., 2017). The scale was designed to measure the dispositional mindfulness in a sport context and consists of three subscales: present-moment attention (example: *when i find myself distracted, i gently bring my attention back to my training*), awareness (example: *I*

*am aware of the changes inside my body during competition, for example when my heart beats faster or when my muscles become tense*), and acceptance (example: *Even though some thoughts and feelings during training and competition may be unpleasant or miserable, i can get along with them peacefully*). Initial analysis indicates good reliability and validity (Zhang et al., 2017). Higher scores indicate greater dispositional athletic mindfulness. Initially, the original AMSQ was translated into French version which was then submitted to an independent translator blind to the original questionnaire. The independent translator performed a back translation that resulted in minor changes on some of the items. In the present study, the reliability coefficients of the AMSQ were = 0.87 (pre-test), = 0.86 (post-test), and = 0.88 (retention test).

#### Athlete Coping Skills Inventory Questionnaire (ACSIQ-28) (see Appendix E)

The Athletic Coping Skills Inventory (Smith et al., 1995) is a 28-item highly validated psychology assessment that measures an athlete's psychological coping skills in seven key areas: coping with adversity, confidence and achievement motivation, goal-setting and mental preparation, peaking under pressure, concentration, and freedom for worry. However, in the current study, i only chose to measure three key subscales: (i) goal-setting and mental preparation)- example: *I set my own performance goals for each practice*, (ii) coping with adversity- example: *I maintain emotional control regardless of how things are going for me*, and (iii) confidence and achievement motivation- example: *I get the most out of my talent and skill*). The choice of only three subscales of ACSIQ was arrived at due to the fact that the original version was perceived to be too long, especially when used in conjunction with a battery of other instruments. Therefore, the three subscales chosen had four questions each leading to a total of twelve questions. The questionnaire was based on a 4-point Likert scale (*0 = almost never; 1 = sometimes; 2 = often; 3 =almost always*).

The French translation of the original ACSIQ-28 was done by the author of the present study followed by an independent translator blind to the original questionnaire performing a back translation that resulted in minor changes on some of the items. The reliability coefficients of the ACSIQ-28 in the present study were = 0.85 (pre-test), = 0.89 (post-test), and = 0.87 (retention test).

#### Data Analysis

Descriptive and normality tests were analysed on the data using *SPSS version 27*. Skewness and Kurtosis scores were transformed into *Z*-scores to test whether the values were significantly different from normal distribution. Absolute values greater than 1.96 were significant at  $p < 0.05$ , above 2.58 at  $p < 0.01$ , and above 3.29 significant at  $p < 0.001$  (Field, 2020). It should be noted that larger sample tests can be significant even when the scores are only slightly different from a normal distribution (Field, 2020).

In order to test if the variances in each group were equal, Levene's test was performed with significant scores ( $p < 0.05$ ) indicating that the assumption of homogeneity had been violated while non-significant scores ( $p > 0.05$ ) showed non-violation of the assumption. In cases where homogeneity of variance test had been violated, readings were taken from adjusted corrections. However, violating the homogeneity assumption only matters if there are unequal group sizes which was unlike case in the current study (Zimmerman, 2004).

Visual analysis presentation of rain cloud plots was performed using the R studio (*R version 4.2.2*). Consequently, a linear mixed-effects analysis using *lme4* package (version 1.1-23; Bates et al., 2015a, b) in *R* (version 4.2.1- 2022-23ucrt) was conducted to investigate the effect of intervention on groups and time of participants' propensity to enact SAS across three measurement periods. Model parameters were estimated by maximum likelihood estimation using bobyqa algorithm wrapped optimx package (*version 2020 - 4.2*); Nash and Varadhan, 2011) as optimizer. The model included fixed factor for group, time, and their interaction, as

well as random factor for individual participants to account for the repeated measures design. In cases where the assumptions of homogeneity of variances and normal distribution were not met, the robustness of the linear mixed-effects analysis is supported by the use of appropriate *post hoc* tests (Field, 2013; Glass et al., 1972). The following example of *R* syntax was applied for the analysis:

Random intercept SAS: `lme(enactment ~ Group * Time + (1 | Participant))`

Random slope: `lme(enactment ~ Group * Time + (Group| Participant))`

## RESULTS

Table 26 shows the descriptive statistics of the different tests on each group: Mean, SD, Minimum and maximum values, skewness and kurtosis and their respective Z-scores. The results presented values of asymmetry with both kurtosis and skewness.

**Table 26**

*Group information and corresponding descriptive statistics*

SASQ	Mean	SD	Min- Max Score	Skewness	Kurtosis	Z-score Skewness	Z-score Kurtosis
<b>ACT-</b>							
<b>group</b>							
Pre-test	51.85	7.14	34 - 60	-1.234	0.445	1.008	0.364
Post-test	86.56	10.14	55 - 100	-1.269	1.871	0.730	1.076
Retention- test	94.79	4.07	85 - 100	-0.577	-2.296	0.826	1.182
<b>PST-</b>							
<b>group</b>							
Pre-test	52.68	6.00	38 - 60	-1.21	0.597	1.069	0.527
Post-test	55.94	8.59	37 - 74	-0.469	0.04	0.318	0.023
Retention- test	56.82	8.11	38 - 72	-0.495	0.408	0.356	0.293

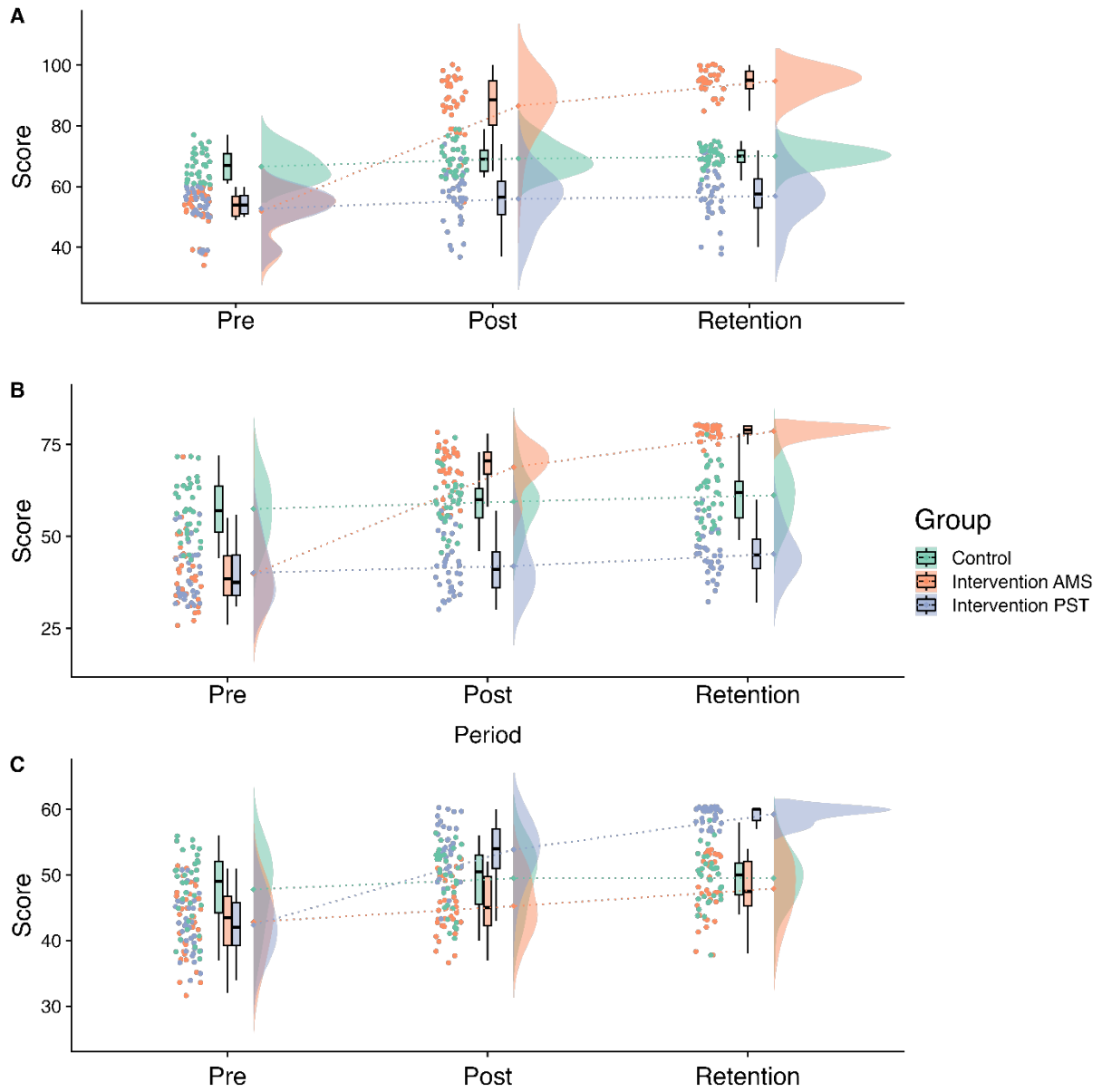
<b>SASQ</b>	<b>Mean</b>	<b>SD</b>	<b>Min- Max Score</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Z-score Skewness</b>	<b>Z-score Kurtosis</b>
<b>Control-</b>							
<b>group</b>							
Pre-test	66.59	4.76	61 - 77	0.455	-0.912	0.557	1.117
Post-test	69.23	4.67	63 - 79	0.57	0.57	0.703	0.703
Retention- test	70.02	2.97	62 - 75	-0.444	0.206	0.872	0.405
<b>AMSQ</b>							
<b>ACT-</b>							
<b>group</b>							
Pre-test	39.82	9.48	26 - 72	1.252	2.608	0.770	1.603
Post-test	68.82	5.77	56 - 78	-0.954	0.297	0.480	0.300
Retention- test	78.59	1.73	73 - 80	-1.418	2.082	0.713	1.047
<b>PST-</b>							
<b>group</b>							
Pre-test	40.15	7.00	31 - 56	0.697	0.683	0.528	0.518
Post-test	41.94	7.65	30 - 57	0.486	-0.825	0.492	0.247
Retention- test	45.18	6.40	32 - 60	0.351	0.000	0.355	0.000
<b>Control-</b>							
<b>group</b>							
Pre-test	57.47	7.99	44 - 72	0.074	-0.944	0.054	0.689
Post-test	59.47	7.31	46 - 77	0.207	0.085	0.151	0.062
Retention- test	61.21	7.19	49 - 78	0.197	-0.627	0.144	0.458

<b>SASQ</b>	<b>Mean</b>	<b>SD</b>	<b>Min- Max Score</b>	<b>Skewness</b>	<b>Kurtosis</b>	<b>Z-score Skewness</b>	<b>Z-score Kurtosis</b>
<b>ACSIQ</b>							
<b>ACT- group</b>							
Pre-test	42.82	5.15	32 - 51	-0.388	-0.716	0.439	0.811
Post-test	45.23	4.27	37 - 52	-0.041	-0.96	0.046	1.087
Retention- test	47.91	4.59	38 - 54	-0.478	-0.61	0.607	0.775
<b>PST- group</b>							
Pre-test	42.38	4.40	34 - 51	0.195	-0.594	0.259	0.788
Post-test	53.85	4.18	43 - 60	-0.494	0.075	0.655	0.874
Retention- test	59.23	1.16	57 - 60	-1.116	-0.412	0.931	0.344
<b>Control- group</b>							
Pre-test	47.79	5.51	37- 56	-0.480	-0.847	0.508	0.896
Post-test	49.47	4.67	40 - 56	-0.55	-0.869	0.582	0.919
Retention- test	49.50	3.99	38 - 58	-0.39	1.002	0.570	1.464

An effective data visualisation approach was used to present maximal statistical information using rain cloud with box plots (Allen et al., 2021) (see Figure 10). Part A represents the SASQ results from the three groups. It can be seen that the ACT-group had the highest score compared to both the PST-group and the active Control-group. In the same vein, part B indicates the results from AMSQ and from the rain cloud box plots, the ACT-group scored higher points than both the PST-group and active Control-group. However, part C indicates the results from ACSIQ and it can be seen that the PST-group had the highest scores as compared to both ACT-group and the active Control-group.

**Figure 10**

*The rain cloud plot representing each intervention group scores*



*Note: A =SASQ    B = AMSQ    C =ACSIQ*

Table 27 presents the homogeneity of variance test which tested the assumption if the spread of scores was roughly equal in different groups. Significant values indicate violation of the homogeneity of variance.

**Table 27***Results for equal variance test (Levene's test)*

<b>SASQ</b>	
Pre-test	$F(2, 99) = 1.048, p = .354$
Post-test	$F(2, 99) = 4.758, p = .439$
Retention-test	$F(2, 99) = 10.916, p = .000^*$
<b>AMSQ</b>	
Pre-test	$F(2, 99) = .130, p = .878$
Post-test	$F(2, 99) = 1.40, p = .249$
Retention-test	$F(2, 99) = 19.085, p = .000^*$
<b>ACSIQ</b>	
Pre-test	$F(2, 99) = 1.325, p = .270$
Post-test	$F(2, 99) = .757, p = .472$
Retention-test	$F(2, 99) = 17.203, p = .000^*$

*Note:* Readings marked with \* violated the homogeneity assumption.

The likelihood ratio test for ACT group was significant ( $p < 0.05$ ) further justifying retaining the random slope (*see* Table 28). Parameter estimates for the random slope effects are presented in table 29. The main effect of the ACT group was found to be significant  $F(1, 80.50) = 41.59, p < 0.001$ , indicating differences in the propensity to enact SAS between the three groups. The main effect of period was also significant  $F(2, 203.17) = 286.07, p < 0.001$ , suggesting that the propensity to enact SAS varied across the three measurement periods. Additionally, there was a significant interaction between intervention group and period  $F(2, 203.17) = 160.78, p < 0.001$ , indicating that the effect of period on propensity to enact SAS varied between the three groups. Pairwise differences of ACT group versus PST group were statistically significant ( $p < 0.001$ ), however, there were no significant statistical pairwise differences between ACT group versus aCG group ( $p = 0.111$ ) (*see* table 30). Further exploration of this interaction revealed that ACT group showed a significant increase in



propensity to enact SAS from T<sub>2</sub> to T<sub>3</sub> ( $p = 0.024$ ), whereas PST group and aCG group did not show significant changes over time. *Post-hoc* comparisons revealed that ACT group (Mean = 62.4) had significantly higher mean levels for enacting SAS as compared to PST group (Mean = 42.4) and aCG group (Mean = 59.4) (see table 31).

**Table: 28**

*Likelihood ratio test results for ACT group*

Model	npar	AIC	BIC	LogLink	Deviance	$X^2$	Df	Pr(> $X^2$ )
Intercept	8	2204.2	2234.0	-1094.1	2188.21			
Slope	10	2187.2	2224.4	-1083.6	2167.95	20.950	2	< 0.001

**Table: 29**

*Random slope results for ACT group*

Effect	df	<i>F</i> -value	<i>p</i> -value
Group	1, 80.50	41.59	< 0.001
Period	2, 203.17	286.07	< 0.001
Group*period	2, 203.17	160.78	< 0.001

**Table: 30**

*Pairwise differences between ACT, PST, and aCG group*

Group	Estimates	df	<i>t</i> -ratio	<i>p</i> -value
ACT versus PST	19.99	1.49	13.379	0.001
ACT versus aCG	3.03	1.49	2.028	$p = 0.111$
PST versus aCG	-16.96	1.49	-11.352	0.001

**Table: 31***Post hoc comparison results between ACT, PST, and aCG group*

Group	Emean	SE	DF	Lower CL	Upper CL
Intervention ACT	62.4	1.06	99	60.3	64.5
Intervention PST	42.4	1.06	99	40.3	44.5
active Control Group	59.4	1.06	99	57.3	61.5

The likelihood ratio test for PST group was not significant ( $p = 0.427$ ) suggesting that the more complicated model was not justified even though both models converged just fine, the (uncorrelated) random slope could be removed from the model intercept (see table 32). Parameter estimates for the random intercept effects are presented in table 33. The main effect of the PST group was found to be significant  $F(2, 99) = 103.995, p < 0.001$ , indicating differences in developing the learned psychological skills between the three groups. The main effect of period was also significant  $F(2, 198) = 358.546, p < 0.001$ , suggesting the development of the learned psychological skills varied across the three measurement periods. Additionally, there was a significant interaction between treatment group and period  $F(4, 198) = 199.147, p < 0.001$ , indicating that the effect of developing the learnt psychological skills varied between the three groups. Pairwise differences of PST group versus aCG group were statistically significant ( $p < 0.001$ ) (see table 30). Further exploration of this interaction revealed that PST group showed a significant increase in developing the learned psychological skills from T<sub>2</sub> to T<sub>3</sub> ( $p = 0.024$ ), whereas the aCG group did not show significant changes over time.

**Table: 32***Likelihood ratio test results for PST group*

npars	AIC	BIC	LogLink	Deviance	X <sup>2</sup>	Df	Pr(>X <sup>2</sup> )
8	1882.727	1912.515	-933.363	1866.727			
10	1885.027	1922.263	-932.513	1865.027	1.699	2	0.427

**Table: 33***Random intercept results for PST group*

Effect	Sum squares	Mean squares	NumDF	DenDF	F-value	p-value
Group	3891.636	1945.818	2	99	103.995	0.001
Period	13417.26	6708.63	2	198	358.546	0.001
Group*period	14904.7	3726.175	4	198	199.147	0.001

The likelihood ratio test for aCG group was not statistically significant ( $p = 1$ ) suggesting that the more complicated model was not justified even though both models converged just fine, the (uncorrelated) random slope could be removed from the model intercept (see table 34). Parameter estimates for the random intercept effects are presented in table 35. The main intervention effect of the aCG group was found to be significant  $F(2, 99) = 25.513$ ,  $p < 0.001$ , indicating differences between the three groups. The main effect of period was also significant  $F(2, 198) = 218.98$ ,  $p < 0.001$ , suggesting the groups varied across the three measurement periods. Additionally, there was a significant interaction between group and period  $F(4, 198) = 75.899$ ,  $p < 0.001$ , indicating that the intervention effect varied between the three groups.

**Table: 34***Likelihood ratio test results for aCG group*

npar	AIC	BIC	LogLink	Deviance	X <sup>2</sup>	Df	Pr(>X <sup>2</sup> )
8	2223.457	2253.245	-1103.728	2207.457			
10	2227.739	2264.975	-1103.869	2207.739	0	2	1

**Table: 35***Random intercept results for aCG group*

Effect	Sum sq	Mean sq	NumDF	DenDF	F-value	p-value
Group	381.469	190.735	2	99	25.513	0.001
Period	3274.124	1637.062	2	198	218.98	0.001
Group*period	2269.66	567.415	4	198	75.899	0.001

Random intercepts for individual participants were estimated to have a variance of 0.32 (SE = 0.08), indicating significant variability in the propensity to enact SAS between participants. The overall fit of the model was assessed using the Akaike Information Criterion (AIC), which was found to be 1885.027 (see table 28). Diagnostic plots showed no evidence of violation of model assumptions.

Overall, these results suggested that the intervention administered to the ACT group simultaneously with an ACT program and taking into account the period had significant effects on participants' propensity to enact SAS whenever they were faced with CCT challenges. Group differences were observed, with ACT group exhibiting higher propensity to enact SAS compared to the PST and aCG group. Additionally, the propensity to enact SAS varied across the three measurement conditions, with a general increase over time observed for ACT group only.

## DISCUSSION

The current study had two general aims; (i) to provide propensities through SAS educational intervention sessions for athletes to enact club-to-club transfers, and (ii) to propose the reinforcing effects of changes in SAS propensities and enactment between ACT or PST intervention models. Overall, and consistent with the current study's hypotheses, the findings showed the potential effectiveness of SAS educational intervention sessions in addition to confirming that both ACT intervention in conjunction with SAS was successful as opposed to PST intervention on its own.

As expected, the ACT-group obtained greater improvements in enacting and deployment of SAS required during club-to-club transfers: pre-test (Mean = 51.85, SD = 7.14), post-test (Mean = 86.56, SD = 10.14), and retention-test (Mean = 94.79, SD = 4.07). These findings were corroborated by the results from Linear Mixed Model analysis using the likelihood ratio test indicating significant differences between groups at all periods of the educational intervention. A *post hoc* test also revealed a significant difference between the three groups (i.e., ACT, PST, and aCG). Consequently, results from the ACT within group test revealed significant differences at separate periods indicating that the educational intervention was successful in assisting the participants develop and enact SAS whenever they encountered CCT challenges.

In summary, the following results confirm that the SAS educational intervention sessions were effective in aiding the athletes with the propensities to develop and enact successful club-to-club transfers. These results are supported by previous findings which argued that athletes require SAS for successful club-to-club transfers (Owiti et al., 2021; Owiti & Hauw, 2021). Consequently, Owiti and colleagues (Owiti & Hauw, 2021) argued that athletes who were in transition of transferring from one club to another needed the following seven key social adaptability skills (i.e., self-discipline, goal-setting, positive thinking, motivation and

confidence, self-organization, interpersonal skills, and autonomy) if they were to achieve excellence.

In accordance with earlier predictions regarding the usefulness of mindfulness and acceptance-based procedures for optimal athletic performance (Gardner and Moore, 2004, 2007), the current study found statistically significant between-group difference of SAS in favour of ACT intervention compared to both PST intervention and the imagery shooting skill intervention. These findings are consistent with those of Goodman et al. (2014), who studied a five-week ACT intervention program. The study reported statistically significant differences in dispositional mindfulness between groups in favour of ACT interventions compared to inactive control group. Similarly, Gross, Moore et al., (2016) reported that participants in the ACT intervention group scored significantly higher than the PST intervention group on dispositional mindfulness. Furthermore, the study also found significant within-group effect showing improvements in sport performance for the ACT intervention group.

The current findings lend support to several researchers who have critically discussed the effectiveness of PST intervention (control strategies) citing that athletes do seem to report difficult experiences while employing PST related techniques as opposed to ACT techniques (Birrer et al., 2012; Gardner & Moore, 2007; Moore, 2009). This finding can be explained by a substantial body of research that has clearly indicated that striving or mental control (as reported in PST interventions) in an attempt to get rid of unwanted emotional and mental content ends up not only being ineffective but may paradoxically even be counterproductive (Gardner & Moore, 2007; Josefsson et al., 2014, 2017, 2019). The ironic mental process theory suggests that controlling or suppressing an unwanted thought can lead to an increased engagement in the very thought that one is trying to resist (Masters & Maxwell 2008; Wegner 1994; Wenzlaff & Wegner 2000). In contrast, the ACT based intervention (mindfulness strategy) which targets optimal performance through enhanced present-centered, awareness of

inner and outer stimuli has been supported by the current findings in enhancing athletes SAS when transferring between clubs.

As concerns the current findings, it is worth highlighting that further difference between PST and ACT as methods of intervention revolves around whether the situation(s) to be dealt with are either specific or general. The PST as a form of intervention is mostly geared towards targeting challenging situations holistically (e.g., with a general approach involving several skills to help overcome the challenge(s)). Contrastingly, the ACT intervention is specific at the beginning (changes with commitment which is general) since acceptance and commitment refers to personal value(s). For example, what is important for the person in general and in particular. Values generally tend to help persons adapt by making it possible to manage specific situations. As such, a person first accepts a specific situation and with commitment work towards adapting to the challenge (i.e., commitment is both general and specific). Therefore, when a person practices ACT, they first focus on the specific challenge (i.e., targeting a specific hook/challenge) but if they stop the ACT at this level, then the work is not completely done. In fact, they should continue with all the specific hooks they encounter and thereafter generalize the approach for every threat.

The current study examined the reinforcing effects of ACT and PST on social adaptability skills in a longitudinal mindfulness-based sport specific intervention enabling for causal inferences to be made. Additionally, athletes' dispositional mindfulness was assessed using a sport-related mindfulness measure (AMSQ; Zhang et al., 2015), in which mindfulness has been operationalized as a multidimensional concept consisting of present-moment attention, awareness and acceptance. Given that almost all the published studies within the literature investigating dispositional mindfulness in a sport context had previously used measures that are not specifically designed for athletes. The current study is in line with the suggestion of Josefsson et al. (2017) who argued that it would be more appropriate and credible

to use sport-specific mindfulness questionnaires which are more “situated” rather than general mindfulness measure when studying dispositional mindfulness in athlete populations.

In considering the breathing as a self-regulating technique that might have aided the participants to accept CCT challenges, I present the following arguments; First, research shows that the ability to self-regulate the quality of feeling and emotion of a person’s in the moment experience is closely linked to the physiology and the reciprocal interactions among physiological, cognitive, and emotional systems (McCraty & Zayas, 2014). These interactions form the basis of information processing networks in which communication between systems occurs through the generation and transmission of rhythms and patterns of activity. Second, it has been reported that self-induced positive emotions increase the coherence in bodily processes, which can be reflected in the pattern of the heart’s rhythm ((McCraty & Zayas, 2014; McCraty et al.,2009b). Therefore, a shift in the heart rhythm in turn plays an important role in facilitating higher cognitive functions, creating emotional stability and facilitating states of calm. The coherence model suggests that the amount of heart rate variability that is mediated by efferent vagal fibers, reflects self-regulatory capacity of a person (McCraty et al.,2009b; McCraty et al., 1995; Tiller et al., 1996). Consequently, it is associated with a different subjective inner state that is achieved through techniques such as paced breathing which increases cross-coherence between breathing and heart rhythms via brainstem centers in the medulla.

In summary, with practice, an athlete is able to use the breathing technique to shift into a more coherent physiological state before, during and after challenging or adverse situations (i.e., during CCT), thus optimizing mental clarity and emotional composure and stability. In challenging situations, breathing is one of the techniques advanced to “help take the intensity out” or “turn down the volume” of the reaction. It has also been argued that, since human beings have conscious control over breathing and can easily slow the rate and increase the depth of the



breathing rhythm, we can take advantage of this physiological mechanism to modulate efferent vagal activity and thus the heart rhythm (McCraty et al.,2009b). The mechanism involves increasing the vagal afferent nerve traffic thereby increasing the coherence (stability) in the patterns of vagal afferent nerve traffic which influences the neural systems involved in regulating sympathetic outflow, informing emotional experience, and synchronizing neural structures underlying cognitive processes (McCraty et al.,2009b).

Since one of the aims of the current study was to examine the reinforcement effect of SAS following the ACT and PST interventions. It was difficult to compare or even detect unique mindfulness effects with previous studies because majority of research examining multi-modal MABI effects mostly used inactive control groups (MacCoon et al., 2012). In line with the current study, to accurately examine effects of MABI's as well as specific mindfulness effects, not only was it necessary to deploy an active control group but also one that was structurally equivalent to the experiment condition. Thus, the active control group in the current study also performed meaningful session activities that were expected to have positive athletic outcomes excluding any ACT-specific ingredients (Baskin et al., 2003; MacCoon et al.,2012; Mohr et al., 2009).

**PART 3**  
**GENERAL DISCUSSION**

This current section discusses the results of the empirical studies in their order of presentation in part 2 of the current thesis. Having defined the ontological positioning which presented the philosophical umbrella covering all the empirical studies on how they were designed and analysed. I went further in highlighting the three elements which constituted the ontological framework, for example, the 4ES approach, a focus on the interaction with the environment, and a multilevel approach of human personality. Considering the importance of rigor and relevance, i also highlighted the practical requisition of the methodological framework as was applied in the current thesis.

The empirical studies presented in the current thesis could have aspects of direct practical implication for those individuals working with athletes (i.e., coaches, sport psychology practitioners, club management etc). In addition, the findings were expected to lead to recommendations aimed at optimising and developing the psychosocial skills necessary during club-to-club transfers. These recommendations represent a genuine consideration for sports organizations/academies to apply the findings in order to maintain existing and/or develop new resources to effectively assist players and support them overcome challenges during club-to-club transfers.

# CHAPTER 1: EPISTEMIC AND METHODOLOGICAL CONTRIBUTIONS

## Conceiving the SSI as a “sense-making” process

The results of the inductive content analysis from the SSI showed that athletes dealt with various problematic experiences whenever they encountered club-to-club transfers (i.e., with coach, teammates, family/friends, and the club), suggesting that they had to develop resources in order to better adapt to the constraints experienced. To do this, they shared concerns arising from issues that emerged during their day-to-day practice, thus highlighting part of the worlds they enacted during club-to-club transfers. Therefore, this concern provided a first level of understanding of the salient elements that characterise problematic experiences encountered by athletes during club-to-club transfers (Owiti et al., 2020). However, as Ayachi et al. (2015) argued while investigating how the notion of comfort is conveyed by enthusiast cyclists, they found out that people seem to report more on experiences that cause them problems than on positive experiences. Of the SSI that were analysed, only problematic experiences were extracted using four categories (i.e., teammates, coach, family, and club). Therefore, for researchers interested in exploring problematic experiences that people face, conducting SSI can provide access to such information.

A detailed analysis of the problematic experiences has shown that by employing a blend of closed and open-ended questions often accompanied by follow-up “*why*” or “*how*” questions (Adams, 2015), makes SSI superbly suited for analysing such experiences. Additionally, when conducting the SSI, the conversation could expand easily around other topics on the agenda. In this case, SSI characterises the typical interactions that emerge from the exchange between the interviewer and the interviewee. From this perspective, it would seem that the problematic experiences that the athletes shared, encouraged the interaction between them in relation to the situation. This activity, could be considered as “*sense-making*” and refers to description of a

problematic experiences that is part of an enactive epistemology (Hauw, 2018). The concept of “*sense-making*” considers that during interviews or other interactions, the activity generates meanings that underpin the construction of a particular world of one's own in which and through which the individual acts, thinks, feels emotions or interacts with others (Van Der Schyff et al., 2016). Therefore, enaction is viewed as constructing meanings (i.e., *sense making*) and a person's activity only emerges by discovering that person's perspectives, perspectives that are distinct from a physical world or a world perceived by an outside observer (Varela, 1997; Weber & Varela, 2002). The SSI, therefore gave the athletes an opportunity to express their experiences “*sense-making*” most of which were problematic during club-to-club transfers.

### **Methodological consideration for SSI analysis**

In part 2 chapter 1 study, during the data analysis, the aim was to identify the adaptation process and the experience(s). This led to splitting the data into two parts; (i) what was meaningful (i.e., “*I had to show them that i was the best player*”), and (ii) the events or examples that took place in that situation (i.e., “*..at this point it was weird, since i joined the team few weeks after...*”). This type of analysis allowed for the identification of the adaptation process (e.g., Hauw et al., 2003; Hauw & Durand, 2007, 2008). In part 2 chapter 2 study, an inductive content analysis was applied to identify the salient themes of athletes’ problematic experiences during club-to-club transfers. This methodology has frequently been applied with success in previous studies making it possible to delimit the content of the interviews (Hauw, 2018; Hauw et al., 2003; Hauw & Bilard, 2017; Hauw & Durand, 2007, 2008; Rochat et al., 2017, 2018). The inductive content analysis allowed for these three processes to be carried out; (i) first step involved clustering raw data themes (i.e., identifying quotes that defined the athletes experience- example “*that was the worst coach i ever had*”) (ii) second step implied clustering the first order themes by comparing and contrasting each quote with all other quotes and also uniting quotes with similar meanings, and splitting quotes from different meanings. The process

above, enabled for characterisation of possible fields of experience as narrated by the athletes, and lastly (iii) the third step allowed for the identification of second order and general dimensions with the analysis continuing until no further underlying uniformities to create higher level themes could be located. Taken as a whole, the two approaches (i.e., of analysing the adaptation process and inductive content analysis) have proved that this type of analysis can be combined into an integrative research program since it addresses methodological concerns relating to rigor and relevance.

### **Analysis of athletes' problematic experiences**

Part 2 chapter 1 set out a study which analysed the problematic experiences faced by athletes during club-to-club transfers. Four problematic meaningful experiences emerging from coach, teammates, club, and family/friends using the 4ES framework were identified. The following discussion focuses on the analysis of these results and their relevance in understanding the problematic experiences athletes face during club-to-club transfers.

The study findings reported that club-to-club transfers subject players to a set of perturbations that affect their microsystem, mesosystems, and essential psychosocial balance or equilibrium. More specifically, the results suggested that these perturbations affect the players' experience(s) because they create a discrepancy with the player's habits, knowledge or expectations. Additionally, the study identified specific actions and skills players develop to enable them achieve successful club-to-club transfers. These skills were split into three groups; (i) general mental strategies to face constraining environment (i.e., goal-setting, motivation, and focused attitude), (ii) skills that target learning methods (i.e., self-discipline, self-organization), and (iii) interpersonal skills.

In the following section, each of the four general categories that were reported to cause problematic experiences during club-to-club transfers are discussed. As concerns the players problematic experiences with the coach, the analysis revealed that players' perception of

satisfaction with basic psychological needs generally mediated their relations with the coach. Fundamentally, players' perception of the transfers between clubs and how accurate (or otherwise) this is may have determined their perceptions' and influenced on whether the club-to-club transfer was successful or not. If the players perceived the change(s) to be more problematic than it is or underestimated the challenge(s) they were experiencing, this may have led the athletes to experience a more problematic process.

The results further revealed that, indeed a reduced interpersonal interaction between teammates challenged and to a greater extent strained the athletes' club-to-club transfer experience. The athletes who did not experience problematic experiences adapted by seeking out opportunities and solutions to achieve successful club-to-club transfers through good relationships with their teammates. Consequently, the findings reported that, in general, the way athletes felt or perceived the club-to-club transfer challenges encompassed whether it led to problematic experience or not. In summary, any level of uncertainty impaired the club-to-club transfer experience as perceived by the athletes. The current findings were also highlighted by the fact that the athlete's environment played a bigger role in the way they perceived the club experience. Lastly, it has been argued that human development occurs within a cultural system that constitutes the context and the reality of the person and how they interact (Tonyan et al., 2013). Therefore, it could be reported that those athletes who had either problematic experience(s) or not of being away from their family and friends had cultural values which either facilitated or presented challenges whenever they encountered club-to-club transfers.

#### **Contribution of the 4ES approach in the current thesis**

The current thesis results have made important contribution to the sports science research. First, it has provided a detailed analysis of the 4ES framework in analysing the problematic experiences athletes encounter during club-to-club transfers. In particular, the approach sought to combine the perceptions, actions, and commitments that characterise

athletes' problematic experiences. In this case, the experiences generated meanings that underpin the construction of a particular world of one's own in which and through which the athlete acts, thinks, feels emotions or interacts with others (Van Der Schyff et al., 2016). More specifically, from a theoretical point of view, the results were able to document enactive approach and its underlying hypotheses with scientific evidence from sports field. Indeed, the enactive analysis of problematic experiences encountered by athletes during club-to-club transfers were produced through "*sense-making*" process. In support of this finding, Hauw, (2018) and Rochat et al. (2017) showed the relevance of "*sense-making*" by offering new ways of understanding the process therefore enriching research in the sporting domain. The various perceptions, actions, and commitments (i.e., loss of self-confidence, feeling motivated, loss of self-esteem, etc) that were reported in the current thesis support the hypothesis that activity is embodied and the different embodied elements that were also identified proved significant for the athletes in overcoming the club-to-club transfer challenges (e.g., being autonomous, self-confident, etc). In addition, these embodied elements are linked to situated dimensions of their activity in the sense that the athletes participated in the construction of the problematic experiences during each club-to-club transfer. In this case, enaction was viewed as enabling the athletes to construct meanings "*sense-making*" and their activity only emerged by discovering their perspectives that are distinct from the physical world, or a world perceived by an outside observer (Varela, 1997; Weber & Varela, 2002).

### **Methodological considerations of studies in part 2**

Several methodological limitations should be acknowledged within the empirical studies in part 2 highlighting questions that remain unresolved, and defining potential directions for future research. First, the results in part 2 chapter 1 study did not allow for the generalisation of the findings due to the sample size, gender and population choice. The study focused exclusively on basketball players at an elite level of sport and as a limitation does not inform



the readers about the nature of adaptability in other sports or levels in addition to gender imbalance. The results are context-specific and need to be tested in different contexts, with larger samples and various sports and levels, and gender balanced to increase the scope. Further limitation along this line was due to many studies coding narratives in different ways as was reported in part 2 chapter 2 study. As such, comparison across studies is challenging because it is empirically difficult to establish whether certain narrative coding components relate to one another (e.g., exploratory processing, positive self-event connections, and positive emotions) or are measuring the same theoretical construct. Therefore, in general, it remains of interest as to whether studies with bigger samples show similar outcomes.

A second limitation is linked to the retrospective nature of the enactive interviews which contains the risk of memory bias. Since there were no representative sampling for the participants, athletes were not inclined to narrate the truth or might have down played their problematic experiences during club-to-club transfers. In order to reduce the risk of memory bias, first, the enactive interview statements were treated critically and with some distance. Second, an adaptive questioning to counteract serious attempts of self-presentation by the participants was developed. Third, the interview data was cross checked with other external information (i.e., literature review articles) and also with the interviews of other participants.

A third limitation involved interpreting problematic experiences which vary in several ways within each individual and may have profoundly affected the narration of club-to-club transfer concerns. Thus, it could be interesting for future research to examine how varying difficult experiences and their severity affect individual narrative identity.

Lastly, a fourth limitation involved the conversion of the narratives into numbers since it is not easy to translate human experiences and feelings into scores. However, our aim was to uncover at what level of narratives the relation exists while ensuring that the existing correlations were not artificial.

## **Contribution of narratives in discriminating between CCT-successful or unsuccessful**

Part 2 chapter 2 set out a study whose aim was to provide an account of the psychological processes' individuals in CCT-successful or CCT-unsuccessful enact by analysing the experience of team sports athletes and how they could link to the elements of good life stories. As a result, each athletes' narrative experience was analysed using the Big Three narrative framework. As previously discussed in part 1 chapter 3 methodological framework, the Big three narrative framework comprises the following; (i) Autobiographical Reasoning- AR (i.e., exploratory processing, meaning-making, and change connections) and is concerned mainly with changes in the self, (ii) Motivational and Affective Themes- MAT (i.e., contamination, affective tone, agency, and communion) which captures goal like orientations about broad based general life concerns and emotions, and (iii) Structure- S (i.e., facts, chronological coherence, and contextual coherence). Therefore, the following sections present the findings and how the results led to discriminating between CCT-successful and CCT-unsuccessful.

The current thesis results showed that club-to-club transfers impacted athletes in terms of their experience forming narratives. The participants were able to be discriminated on the basis of the narratives and the "quality" of good life stories they told. In addition, it could be argued that individual differences on how the stories about one's important experiences were told reflected on both CCT- successful and CCT-unsuccessful and their predictability. Therefore, two potential reasons for this result are offered; (i) people make meaning of their lives through narratives and it is expected that each person employs the characteristic strategies and procedures for meaning making (McAdams, 2006; McAdams et al., 2006), and (ii) each participant draws from experiences of their own life, a pool of autobiographical memories and images which they structure to fit their own meanings (Tomkins, 1987). Considering these two points, it can be argued that athletes who encountered CCT-successful were able to create

insights from their experiences while exploring meaning and actively interpreting their transformation impacts during club-to-club transfers. In contrast, this was not the case with those athletes who faced situations of CCT-unsuccessful since they were unable to create insights from their experience during club-to-club transfers.

The current study results also found interpretable association in which club-to-club transfer narratives were positively correlated with exploratory processing. This association suggests that, when athletes engage in exploratory processing, they explicitly focus in an effort to explore, reflect on, or analyse a difficult experience with an openness to learning from it and incorporating a sense of change into the good life story. Therefore, athletes who encountered difficult experiences during CCT (CCT-unsuccessful) told less exploratory stories. On the contrary, athletes who encountered CCT-successful narrated their club-to-club transfer experience with openness and credibility, all of which are ingredients of good life stories.

Further analysis of the narratives revealed a negative association between the level of adaptation during club-to-club transfer and contamination. It could be argued that the negative association between the level of adaptation during CCT and contamination could be related to athletes' inability to find benefit in negative events. Indeed, it has been reported that when a disruptive event such as club-to-club transfer challenge occurs, athletes may be motivated to resolve the negativity or disruption by narrating the experience as provoking insight. It is therefore suggested that, the athletes who experienced CCT-unsuccessful might have attempted to minimise negative emotions and avoided thinking about them. Contrastingly, athletes who experienced CCT-successful were able to engage in negative emotions and embraced the club-to-club transfer challenges leading to negative association between contamination and the level of adaptation.

The current findings also reported that the "Fact" narrative component was positively associated with the level of club-to-club transfer experience. This finding can be explained by

positing that the athletes who experienced CCT-successful were able to construct personal challenges while drawing successful meanings from good life stories. Lastly, the analysis reported that previous experiences in similar situations could have also assisted the athletes to encounter CCT-successful. This can be explained by the fact that life stories are intertwined and evolving narrations of the self that incorporates the reconstituted past, perceived present, and anticipated future (McAdams, 1996). Therefore, athletes who encountered CCT-successful were able to pull resources previously applied in similar circumstances in adapting to new situations or dynamic and changing environments.

### **Narrative identity versus personality pathology in explaining CCT-unsuccessful**

In this section, associations between narrative identity and personality pathology within corresponding dimension in explaining CCT-unsuccessful is reported. Narrative identity and personality pathology originate from different fields of studies. Only recently, these fields have moved towards each other, this is despite studies having shown that narrative identity characteristics are indispensably associated with personality pathology (Adler & Clark, 2019; Lind, 2021). These associations emphasize the value of personality pathology characteristics as an additional and alternative perspective on describing and understanding narrative identity (Lind, 2021; McCrae & Costa, 2021). Therefore, there is an emphasised need for the integration of these two separate fields of studies (Adler & Clark, 2019; Lind et al, 2020) of which the current thesis will provide support to. Based on previous studies, people with higher levels of personality pathology (i.e., impairments in personality functioning, and/or a categorical personality disorder- PD) are expected to have corresponding results with cases of CCT-unsuccessful.

In comparing the results of motivational affective themes (MAT) dimensions from personality pathology field, youths with anti-social personality disorder (ASPD) characteristics seem to narrate about situations/experiences with a more negative affective valence than youths

without these characteristics (Vanwoerden et al., 2019). In the same vein, adults with borderline personality disorder-BPD appeared to narrate life events more negatively than adults without these classifications (Botsford & Renneberg, 2020; Lind, et al., 2020; Vanderveren et al., 2021). These observations correspond to the current thesis findings in discriminating between CCT-successful or CCT-unsuccessful.

The results of autobiographical reasoning (AR) dimensions from a personality pathology field were compared repeatedly and it showed that narratives of adult BDP patients revealed evidence of negative self-event connections (Jørgensen et al., 2012; Lind et al., 2020). The study went further to report that self-event connections were related to personality dysfunction and negative connectivity concurrently. The findings of the current thesis concerning change connections, exploratory processing, and meaning making dimensions are in support of the above results.

Lastly, the structure (S) element of narratives was compared from a personality pathology angle. The elements of S narratives such as temporal and orientational order of the context (i.e., contextual and chronological coherence in narrative identity field) (McLean et al., 2019) with low levels of narrative coherence were associated with BPD characteristics in adolescents diagnosed with BPD (Lind et al., 2019). The study reported that lack of narrative coherence was related to poor mentalisation and attachment insecurity (Lind et al., 2020). Further lower levels of narrative coherence were related to ASPD features in a community young adult sample (Bendstrup et al., 2021; Vanderveren et al., 2021). Once again, and in support of these findings, the current thesis study also reported that athletes who encountered CCT-successful narrated their good life stories in a coherent way. Therefore, having highlighted the possibility of comparing both the components of narrative identity and personality pathology, I argue that further studies should pursue the development of the hypotheses raised in the current thesis.

## **CHAPTER 2: PRACTICAL IMPLICATIONS**

This chapter discusses the practical implications with specific considerations based from the results and discussions of the empirical studies presented earlier in part 2 chapter 1, 2, 3, and 4. In addition, i offer recommendations aimed at developing and enacting the SAS necessary during club-to-club transfer. I believe that this information will provide insights into the SAS players must enact and deploy whenever they encounter club-to-club transfers.

### **From identification to development in pursuit of excellence**

The importance of talent identification and development programs have grown in popularity and are seen as avenues to maximise athletes' potential in achieving success (Anshel & Lidor, 2012). For professional clubs, training future generations of athletes is crucial to ensuring both athletic talent and financial success (Bennett et al., 2019; Gesbert et al., 2021). It is generally recognized that talent identification and development consist of developmental stages throughout the career of an athlete. This coupled with the fact that it is highly unlikely for an athlete to finish his or her whole career in the same club. The need to come up with the psychosocial skills (i.e., SAS) which are meant to assist the players adapt to new teammates, new coaches, new training forms and new cultures and geographical settings arose. Therefore, in the following paragraphs, i present the practical implications based on the findings of the current thesis.

In this section, i argue that individuals working with athletes' (i.e., coaches, physicians, club management etc.) should identify and monitor the SAS that a player requires during the development stages. Getting all the psychosocial skills and attributes that are required for world class success into place takes a lot of time, effort and learning. As such, it is easy to miss the fact that underpinning this effective development are important psychosocial skills and attributes such as those found in SAS; self-discipline, goal setting, motivation/confidence, self-organization, interpersonal skills, positive thinking, and autonomy. It would appear obvious

that motivation is absolutely paramount to successful development at all levels of an athlete's life, and if we are to improve, develop and succeed over time, athletes must have the desire to do so. Indeed, Ericsson (2003, p 63) argues that "most amateurs do not improve their performance only because they have reached (in their minds) an acceptable level". Furthermore, learning autonomy is an important aspect too of successful development, and is underpinned by strategies such as taking active control over the thinking processes involved in learning (i.e., adopting a meta-cognitive overview), planning, monitoring, self-evaluation and a mixture of attitudes, such as curiosity, persistence and confidence (Freeman 1995). As such, it is all of these SAS that would assist athletes' overcome club-to-club transfer challenges. Therefore, those working with the athletes should identify and monitor closely the SAS necessary during club-to-club transfer and the athlete (s) should show commitment and motivation when faced with such encounter.

The ultimate achievement for any coach or organisation interested in high level performance is to nurture their athletes effectively, enabling them to realise their full potential and succeed at world class level. In this type of excellence, athletes' immediate environment must be carefully managed to foster the development of adaptability skills that will help athletes overcome club-to-club transfer challenges. It is thus important to grasp the features of the TDE because this environment is the most controllable dimension in the TD process (Gesbert et al., 2021; Martindale et al., 2005; Mills et al., 2014). Although the literature on the role of the environment in athletes' development is extensive (Ivarsson et al., 2015; Sarmiento et al., 2018), however, athletes' environment can encompass a very great number of factors, including birthplace, socio-economic status, sporting policy, support from parents, family, siblings or peers, coaches and staff, and training/development programs. From a coach's perspective, understanding the player's worldview in order to safeguard his or her well-being, creating a player-driven environment to promote self-responsibility (e.g., encouraging their

ideas/feedback), and establishing explicit pathways to the senior level with a focus on long-term education and development are considered developmental catalysts that distinguish good and less good TID academies (Martindale et al., 2013; Mills et al., 2014). Therefore, if individuals working with the athlete's neglect to design and structure coherent and appropriate experiences within their environments, aspiring athletes cannot be automatically transformed into world-class performers (Collins et al., 2016; Webb et al., 2016).

Having previously argued for identification and continuous monitoring of the necessary psychosocial skills necessary during club-to-club transfers. The SASQ is an important tool with sound psychometric properties developed to facilitate measuring the SAS. Its ability to categorise athletes into three groups; low achievers, average achievers, and high achievers allows it to be used to identify athletes along different categories. This process could be done at the beginning when athletes encounter early club-to-club transfers. During identification stage, regular discussions with the athletes as concerns club-to-club transfer challenges may be examined since they could provide early indicators for an athlete who might be struggling with the changes. Further determination could be established as concerns areas where the athlete feels or experiences challenges (for example; could it be due to adapting to coach? adapting to teammates? adapting to being away from family and friends? or adapting to the club?). Once these concerns are established, continuous monitoring using SASQ should be encouraged in finding out if the concerned athlete is improving, stagnating, or declining his/her propensity to act and enact SAS situations.



## **GENERAL CONCLUSION**

The aim of the current thesis was to identify the necessary psychosocial skills necessary during club-to-club transfer. On the one hand, having established a gap within the social adaptability literature, it aimed to contribute to the production of knowledge in the field of sport psychology by providing results to complement those already available and, on the other hand, provide a psychometric instrument which could be used as a monitoring tool by individuals working with athletes who experience club-to-club transfers.

This work was based on 4ES, Bronfenbrenner's ecological systems, and an integrated multilayer identity perspective of personality to characterise the problematic experiences of team sport athletes which were elicited through interviews. Taken as a whole, the empirical studies in the current thesis have enabled us to identify four main areas of problematic experiences during club-to-club transfers. Furthermore, i have included the necessary social adaptability skills (SAS) that athletes must enact and deploy during club-to-club transfers. I also suggest that the SASQ could be used to evaluate athletes whenever they encounter club-to-club transfers. The evaluation involves identification and continued monitoring of SAS to ensure that the athletes are able to enact and deploy these skills within the course of their development. However, and more specifically, SASQ should be used as a formative assessment tool (and not a selection tool) to identify, monitor and design interventions to help aspiring athletes develop SAS skills as catalyst for development.

Talent identification and development being a complex and dynamic process which influences the development of athletes in a multidimensional way with the ultimate goal of maximizing their potential. The SAS educational intervention program provided in the current thesis contributes to the implementation of sports psychology intervention geared towards maximising athletes' potential. Consequently, through the application of the 4ES approach, a crucial factor for athletes' sport development in relation to the environment was identified. This

means that environmental variables should combine into a system with the goal of improving athletes' performance and at the same time encourage their personal development. Most importantly, it encompasses a broader approach by examining the developmental context or environment in which athlete development takes place rather than focusing solely on the individual athlete.

Overall, the findings of the current thesis suggests that the dispositional mindfulness intervention (ACT) may function as an important mechanism in enhancing and/or reinforcing athletes' enactment and deployment of SAS required during club-to-club transfers. It therefore seems reasonable to consider mindfulness practice-strategies as a regular complementary to SAS educational intervention approach to athletes. In doing so, athletes can improve their social adaptability skills required during club-to-club transfers leading to enhanced athletic performance.

### **Limitations and further developments**

Several limitations should be acknowledged, highlighting unresolved questions and defining potential directions for further developments. A systematic analysis using the principles of the 4ES framework enabled for the identification of the athletes' problematic experiences, adaptability skills and how they were applied during CCT. There are, however, many limitations to qualitative studies of this kind. First, part 2 chapter 1 study, the purpose was not to verify hypotheses since no study had investigated the psychosocial skills required during CCT, but to generate new insights from the SAS enacted and deployed by the athletes, therefore, these findings are not easily generalizable. Furthermore, at the beginning, i focused exclusively on basketball players at an elite level of sport. Therefore, the findings are context-specific and should be tested in different sport contexts and with larger samples to increase the study scope. It would be interesting to find out whether studies with more extensive samples and in different sport contexts would show similar results.

A combination of interviews and/or questionnaires as methods of data collection was used in the current thesis. It meant that the participants were involved in retrospective recall and this could have led to subject memory bias or self-presentation. Given that there was no representative sampling for the participants, players who experienced problematic club-to-club transfers might not have been inclined to narrate the truth, or they might have downplayed the difficulties. Therefore, future research could recruit a larger experientially, more diverse and representative sample population to assist with cross referencing the current findings.

A further limitation concerns the standardization of the SASQ with a sample drawn from the French-speaking part of Switzerland which points to a culture-based approach. However, caution should be taken due to the Cross-Cultural Adaptation (CCA) which refers to comparing the differences between the “source” and “target” culture with the aim of maintaining a questionnaires equivalence being a methodological concern due to various reasons (Epstein et al., 2015; Herdman, 1997). First, some researchers have argued that translation can involve linguistic problems because two languages can have non-equivalent words or idiomatic expressions (Leplège et al., 1998). Second, the adaptation of the questionnaire to another culture can be a problem due to one or several items having different meaning(s) or no meaning(s) at all in a specific cultural background. Further research might focus on multicultural validation of the SASQ and in so doing, take adequate methodological strategies for adapting the questionnaire while retaining its equivalence properties.

Another limitation of the current thesis was the omission of level 1 factor (Big-five) construct in understanding the necessary SAS required during club-to-club transfers. This was due to the fact that the Big-five factor construct has been reported to provide a highly general framework for characterizing traits (McAdams & De Aubin, 1992). Each of the five factors defines an ample space in the universe of personality descriptions. Within each of the five categories, different and more specific traits may be found, and many of these traits may even

be further broken down into their parts since traits are nested hierarchies within traits. Although the three levels are interconnected in McAdams's model, each can nevertheless be analysed in isolation. Yet, it might be fruitful for future directions to develop a combined approach in determining if a dynamic relationship exists between adaptability skills and the three levels through retrospective evaluation. Additionally, research might be developed with a look at the most influential factors (levels) in determining SAS further accelerating talent development.

In my attempt to report associations between narrative identity and personality pathology, some limitations which could be addressed in future studies were identified. First, due to various studies coding narratives in different ways, as such, comparison across studies and different fields is challenging. This is due to the fact that, it is empirically difficult to establish whether certain narrative coding components in narrative identity and personality pathology relate to one another (e.g., exploratory processing, positive self-event connections, and positive emotions) or are measuring the same theoretical construct. Therefore, future studies should start integrating the narrative identity and personality pathology field but with a goal of standardising the narrative coding components to enable comparisons.

A subsequent limitation involved interpreting difficult experiences which (e.g., bad experiences with coach and teammates) vary in several ways within each individual (subjective) and may profoundly affect narration of club-to-club transfer concerns. Therefore, it could be important for future research to examine how varying difficult experiences and their severity affect individual narrative identity.

On a statistical standpoint, good practice dictates a minimum of three items per factor (Raubenheimer, 2004). Three of the SASQ factors consisted of at least three items per factor, however, the club factor had only two items which should be highlighted as a limitation of the current thesis. In retaining the club factor with only two items, the following three arguments are presented; (i) there was a strong theoretical and practical reason linked to the observation

that future athletes are already self-motivated to pursue their careers despite problematic challenges concerning the club, (ii) my decision to maintain only two items for the club factor is supported by previous research in the psychology literature suggesting that constructs that do not have a wide domain or those that are not conceptualized as multidimensional may present single-item measures (Bergkvist & Rossiter, 2007; Drolet, & Morrison, 2001; Gosling et al., 2003; Winous et al., 1997), and (iii) a factor with two items is only considered reliable when the items are highly correlated ( $r = 0.70$ ) but fairly uncorrelated with the other items as was the case with the club factor (Yong & Pearce, 2013).

Another limitation concerns the model fit index for SASQ calculated in the current study (i.e., CFI = 0.889) which was lower than the value of  $CFI \geq 0.95$  suggested by Hu and colleague (Hu & Bentler, 1999). However, it should be noted that, testing or interpreting how well structural equation model fit sample data has acknowledged a methodological challenge (Peugh & Feldon, 2020; Marcoulides & Yuan, 2017). Research has shown that model fit index values can be influenced by sample size (Mash et al., 2004),  $df$  (Chen et al., 2008), the number of variables analysed (i.e., model complexity; Kenny and McCoach, 2003), and missing data (Savalei, 2011). Despite these results and Hu and Bentler's (1999) own warnings against doing so, their cut-point values have been accepted *de facto* as the fit standard. In addition, the use of multiple fit index values such as chi-square test static and  $p$  value, CFI, RMSEA, SRMR have also been applied (Peugh & Feldon, 2020; Marcoulides & Yuan, 2017). However, these fit indices may not provide uniform evidence for a well-fitting model, leaving readers to assess the strength of such claim rather subjectively on the basis of a preponderance of often less than definitive evidence. Therefore, future practice could forego inferential tests of fit in favour of equivalence testing technique for assessing model fit that combines traditional descriptive fit indices with an inferential strategy testing in the form of confidence interval (CI) to facilitate more definitive fit conclusions (Peugh & Feldon, 2020; Marcoulides & Yuan, 2017).

The final limitation is based on the validity of the SASQ since the questionnaire was developed with a sample of mostly elite basketball players aged 20 - 36 years. However, the SASQ was validated with a sample of young athletes aged 12 – 21 years from different team sports on both male and female. Therefore, the variation in terms of team sports, age groups, and whether male or female may cast some caution on both the internal and external validity of SASQ. Future research should consider age groups and the type of team sport and whether male or female respectively in developing a more reliable scale for use in practical settings.

## REFERENCES

- Adams, W. C. (2015). Conducting semi-structured interviews. In K. E. Newcomer, H. P. Hatry, & J. S. Wholey (Eds.), *Handbook of Practical Program Evaluation* (1st ed., pp. 492–505). Wiley. <https://doi.org/10.1002/9781119171386.ch19>
- Adler, J. M., & Clark, L. A. (2019). Incorporating narrative identity into structural approaches to personality and psychopathology. *Journal of Research in Personality*, 82, Article 103857. <https://doi.org/10.1016/j.jrp.2019.103857>
- Abernethy, B., Neal, R. J., & Koning, P. (1994). Visual–perceptual and cognitive differences between expert, intermediate, and novice snooker players. *Applied Cognitive Psychology*, 8(3), 185–211. <https://doi.org/10.1002/acp.2350080302>
- Abraham, S., Mir, B. A., Suhara, H., Mohamed, F. A., & Sato, M. (2019). Structural equation modeling and confirmatory factor analysis of social media use and education. *International Journal of Educational Technology in Higher Education*, 16(1), 32. <https://doi.org/10.1186/s41239-019-0157-y>
- Adler, J. M., & Hershfield, H. E. (2012). Mixed emotional experience is associated with and precedes improvements in psychological well-being. *PLoS ONE*, 7(4), e35633. <https://doi.org/10.1371/journal.pone.0035633>
- Adler, J. M., & McAdams, D. P. (2007). The narrative reconstruction of psychotherapy. *Narrative Inquiry*, 17(2), 179–202. <https://doi.org/10.1075/ni.17.2.03adl>
- Adler, J. M., Skalina, L. M., & McAdams, D. P. (2008). The narrative reconstruction of psychotherapy and psychological health. *Psychotherapy Research*, 18(6), 719–734. <https://doi.org/10.1080/10503300802326020>
- Alfermann, D., & Stambulova, N. (2007). Career transitions and career termination. In G. Tenenbaum & R. C. Eklund (Eds.), *Handbook of Sport Psychology* (1st ed., pp. 712–733). Wiley. <https://doi.org/10.1002/9781118270011.ch32>

- Alfermann, D., Lobinger, B. H., Nesges, O., Martindale, R. J. J., & Andronikos, G. (2023). German version of the talent development environment questionnaire (TDEQ-5). *German Journal of Exercise and Sport Research*, 53(1), 59–69. <https://doi.org/10.1007/s12662-022-00850-x>
- Allen, J. B. (2003). Social motivation in youth sport. *Journal of Sport and Exercise Psychology*, 25(4), 551–567. <https://doi.org/10.1123/jsep.25.4.551>
- Allen, M. S., & Laborde, S. (2014). The role of personality in sport and physical activity. *Current directions in psychological science*, 23(6), 460-465
- Allen, M., Poggiali, D., Whitaker, K., Marshall, T. R., Van Langen, J., & Kievit, R. A. (2021). Raincloud plots: A multi-platform tool for robust data visualization. *Wellcome Open Research*, 4, 63. <https://doi.org/10.12688/wellcomeopenres.15191.2>
- Alvesson, M. (2003). Methodology for close up studies—struggling with closeness and closure. *Journal of Higher Education*. 46(2), 167–193. <https://doi.org/10.1023/A:1024716513774>
- Anderson, N., Herriot, P., & Hodgkinson, G. P. (2001). The practitioner-researcher divide in Industrial, Work and Organizational (Iwo) psychology: Where are we now, and where do we go from here? *Journal of Occupational and Organizational Psychology*, 74(4), 391–411. <https://doi.org/10.1348/096317901167451>
- Angen, M.J. (2000). Evaluating interpretive inquiry: reviewing the validity debate and opening the dialogue. *Qualitative Health Research*. 10(3), 378–395. [doi:10.1177/104973230001000308](https://doi.org/10.1177/104973230001000308)
- Anshel, M. H., & Lidor, R. (2012). Talent detection programs in sport: The questionable use of psychological measures. *Journal of Sport Behavior*, 35(3), 239–266.
- Arbuckle, J. (2013). *IBM SPSS Amo 22 User's Guide*. Armonk, NY: IBM



- Ayachi, F. S., Dorey, J., & Guastavino, C. (2015). Identifying factors of bicycle comfort: An online survey with enthusiast cyclists. *Applied Ergonomics*, *46*, 124–136. <https://doi.org/10.1016/j.apergo.2014.07.010>
- Barbier, J. M. (2013). *Vécu, élaboration et communication de l'expérience. Le travail de l'expérience*, 13-37
- Baker, J., Cobley, S., Schorer, J., & Wattie, N. (Eds.). (2017). *Routledge handbook of talent identification and development in sport* (1st ed.). Routledge. <https://doi.org/10.4324/9781315668017>
- Baker, J., Cote, J., & Abernethy, B. (2003a). Sport-specific practice and the development of expert decision-making in team ball sports. *Journal of Applied Sport Psychology*, *15*(1), 12–25. <https://doi.org/10.1080/10413200305400>
- Baker, J., Cote, J., & Abernethy, B. (2003b). Sport-specific practice and the development of expert decision-making in team ball sports. *Journal of Applied Sport Psychology*, *15*(1), 12–25. <https://doi.org/10.1080/10413200305400>
- Baker, J., & Horton, S. (2004). A review of primary and secondary influences on sport expertise. *High Ability Studies*, *15*(2), 211–228. <https://doi.org/10.1080/1359813042000314781>
- Barab, S. A., Hay, K. E., & Yamagata-Lynch, L. C. (2001). Constructing networks of action-relevant episodes: An in-situ research methodology. *Journal of the Learning Sciences*, *10*(1–2), 63–112. [https://doi.org/10.1207/S15327809JLS10-1-2\\_5](https://doi.org/10.1207/S15327809JLS10-1-2_5)
- Barab, S. A., & Kirshner, D. (2001). Guest editors' introduction: Rethinking methodology in the learning sciences. *Journal of the Learning Sciences*, *10*(1–2), 5–15. [https://doi.org/10.1207/S15327809JLS10-1-2\\_2](https://doi.org/10.1207/S15327809JLS10-1-2_2)

- Barab, S. A., & Plucker, J. A. (2002). Smart people or smart contexts? Cognition, ability, and talent development in an age of situated approaches to knowing and learning. *Educational Psychologist*, 37(3), 165–182. [https://doi.org/10.1207/S15326985EP3703\\_3](https://doi.org/10.1207/S15326985EP3703_3)
- Bates, D., Kliegl, R., Vasishth, S., Baayen, H. (2015a). *Parsimonious Mixed Models*. ArXiv: 1506.04967. <http://arxiv.org/abs/1506.04967>.
- Bates, D., Mächler, M., Bolker, B., & Walker, S. (2015b). Fitting linear mixed-effects models using lme4. *Journal of Statistical Software*, 67(1). <https://doi.org/10.18637/jss.v067.i01>
- Beatty P. C. & Willis G. B. (2007). Research synthesis: The practice of cognitive interviewing, *Public Opinion Quarterly*, vol. 71, no. 2, pp. 287–311, <https://doi.org/10.1093/poq/nfm006>
- Beamer, M., Côté, J., & Ericsson, K. A. (1999). A comparison between international and provincial level gymnasts in their pursuit of sport expertise. *Proceedings of the 10th European Congress of Sport Psychology*, Prague, Czech Republic.
- Beckmann, J., and Elbe, A. M. (2015). *Sport psychological interventions in competitive sports*. Newcastle upon Tyne, UK: Cambridge Scholars Publishing.
- Bendstrup, G., Simonsen, E., Kongerslev, M. T., Jørgensen, M. S., Petersen, L. S., Thomsen, M. S., & Vestergaard, M. (2021). Narrative coherence of autobiographical memories in women with borderline personality disorder and associations with childhood adversity. *Borderline Personality Disorder and Emotion Dysregulation*, 8(1), 1–10. <https://doi.org/10.1186/s40479-021-00159-5>
- Bennett, K. J. M., Vaeyens, R., & Franssen, J. (2019). Creating a framework for talent identification and development in emerging football nations. *Science and Medicine in Football*, 3(1), 36–42. <https://doi.org/10.1080/24733938.2018.1489141>

- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>
- Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research*, 44(2), 175–184. <https://doi.org/10.1509/jmkr.44.2.175>
- Biddle, S. J. H., Markland, D., Gilbourne, D., Chatzisarantis, N. L. D., & Sparkes, A. C. (2001). Research methods in sport and exercise psychology: Quantitative and qualitative issues. *Journal of Sports Sciences*, 19(10), 777–809. <https://doi.org/10.1080/026404101317015438>
- Birrer, D., Röthlin, P., & Morgan, G. (2012). Mindfulness to enhance athletic performance: Theoretical considerations and possible impact mechanisms. *Mindfulness*, 3(3), 235–246. <https://doi.org/10.1007/s12671-012-0109-2>
- Blijlevens, S. J. E., Elferink-Gemser, M. T., Wylleman, P., Bool, K., & Visscher, C. (2018). Psychological characteristics and skills of top-level Dutch gymnasts in the initiation, development and mastery stages of the athletic career. *Psychology of Sport and Exercise*, 38, 202–210. <https://doi.org/10.1016/j.psychsport.2018.07.001>
- Blodgett, A. T., Ge, Y., Schinke, R. J., & McGannon, K. R. (2017). Intersecting identities of elite female boxers: Stories of cultural difference and marginalization in sport. *Psychology of Sport and Exercise*, 32, 83–92. <https://doi.org/10.1016/j.psychsport.2017.06.006>
- Bloom, B. (1985). *Talent development in young people*. New York, NY: Ballantine.
- Bonett, D. G. (2002). Sample size requirements for estimating intraclass correlations with desired precision. *Statistics in Medicine*, 21(9), 1331–1335. <https://doi.org/10.1002/sim.1108>

- Boynton, P. M., & Greenhalgh, T. (2004). Selecting, designing, and developing your questionnaire. *British Medical Journal*, *328*(7451), 1312–1315. <https://doi.org/10.1136/bmj.328.7451.1312>
- Booth, J., Hall, P., & Wood, A. (1992). Bootstrap estimation of conditional distributions. *The Annals of Statistics*, *20*(3). <https://doi.org/10.1214/aos/1176348786>
- Botsford, J., & Renneberg, B. (2020). Autobiographical memories of interpersonal trust in borderline personality disorder. *Borderline Personality Disorder and Emotion Dysregulation*, *7*(1), 1–10. <https://doi.org/10.1186/s40479-020-00130-w>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Breslin, G., Shannon, S., Haughey, T., Donnelly, P., & Leavey, G. (2017). A systematic review of interventions to increase awareness of mental health and well-being in athletes, coaches and officials. *Systematic Reviews*, *6*(1), 177. <https://doi.org/10.1186/s13643-017-0568-6>
- Bronfenbrenner, U. (1974). Developmental research, public policy, and the ecology of childhood. *Child Development*, *45*(1), 1. <https://doi.org/10.2307/1127743>
- Bronfenbrenner, U. (1979). *The ecology of human development*. Experiments by Nature and Design. Cambridge, MA.
- Bronfenbrenner, U. (1981). *The ecology of human development: Experiments by nature and design*. Harvard University Press. <https://doi.org/10.2307/j.ctv26071r6>
- Bronfenbrenner, U., & Ceci, S. J. (1994). Nature-nurture reconceptualized in developmental perspective: A bioecological model. *Psychological review*, *101*(4), 568.
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (Second edition). The Guilford Press

- Brown, D. J., & Fletcher, D. (2017). Effects of psychological and psychosocial interventions on sport performance: A meta-analysis. *Sports Medicine*, 47(1), 77–99. <https://doi.org/10.1007/s40279-016-0552-7>
- Bruner, J. (1990). Culture and human development: A new look. *Human Development*, 33(6), 344–355. <https://doi.org/10.1159/000276535>
- Bruner, J. (1998). What is a narrative fact? *The ANNALS of the American Academy of Political and Social Science*, 560(1), 17–27. <https://doi.org/10.1177/0002716298560001002>
- Bruner, J. S. (2003). *Making stories: Law, literature, life* (First Harvard University Press paperback edition). Harvard University Press.
- Brunswik, E. (1955). Representative design and probabilistic theory in a functional psychology. *Psychological Review*, (62), 193–217
- Byrne, B. M. (2016). Structural equation modelling with Amos: *Basic concepts, applications, and programming* (Third edition). Routledge, Taylor & Francis Group. <https://doi.org/10.4324/9781315757421>
- Buckworth, J., Dishman, R., O'Connor, P., & Tomporowski, P. (2013). *Exercise Psychology*. Champaign, IL: Human Kinetics.
- Burton, D. (1989). Winning isn't everything: Examining the impact of performance goals on collegiate swimmers' cognitions and performance. *The Sport Psychologist*, 3(2), 105–132. <https://doi.org/10.1123/tsp.3.2.105>
- Burton, D., Pickering, M., Weinberg, R., Yukelson, D., & Weigand, D. (2010). The competitive goal effectiveness paradox revisited: Examining the goal practices of prospective Olympic athletes. *Journal of Applied Sport Psychology*, 22(1), 72–86. <https://doi.org/10.1080/10413200903403232>
- Bryman, A. (2006). Integrating quantitative and qualitative research: how is it done. *Qualitative Research* 6: 97–113. <https://doi.org/10.1177/1468794106058877>

- Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research 1*: 8–22. <https://doi.org/10.1177/2345678906290531>
- Campbell, D. T. (1960). Recommendations for APA test standards regarding construct, trait, or discriminant validity. *American Psychologist*, *15*(8), 546–553. <https://doi.org/10.1037/h0048255>
- Carless, D., & Douglas, K. (2009). ‘We haven’t got a seat on the bus for you’ or ‘all the seats are mine’: Narratives and career transition in professional golf. *Qualitative Research in Sport and Exercise*, *1*(1), 51–66. <https://doi.org/10.1080/19398440802567949>
- Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods*, *15*(1), 17–32. <https://doi.org/10.1177/1094428110392383>
- Casper, J. M., Gray, D. P., & Babkes Stellino, M. (2007). A sport commitment model perspective on adult tennis players’ participation frequency and purchase intention. *Sport Management Review*, *10*(3), 253–278. [https://doi.org/10.1016/S1441-3523\(07\)70014-1](https://doi.org/10.1016/S1441-3523(07)70014-1)
- Casper, M. O., & Artese, G. F. (Eds.). (2023). *Situated cognition research: Methodological foundations* (Vol. 23). Springer International Publishing. <https://doi.org/10.1007/978-3-031-39744-8>
- Chadwick, R. (2017). Embodied methodologies: Challenges, reflections and strategies. *Qualitative Research*, *17*(1), 54–74. <https://doi.org/10.1177/1468794116656035>
- Chan, D., & Schmitt, N. (2000). Interindividual differences in intraindividual changes in proactivity during organizational entry: A latent growth modelling approach to understanding newcomer adaptation. *Journal of Applied Psychology*, *85*(2), 190–210. <https://doi.org/10.1037/0021-9010.85.2.190>

- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. London: Sage Publications.
- Chen, F., Curran, P. J., Bollen, K. A., Kirby, J., & Paxton, P. (2008). An empirical evaluation of the use of fixed cutoff points in RMSEA test statistic in structural equation models. *Sociological Methods & Research*, 36(4), 462–494. <https://doi.org/10.1177/0049124108314720>
- CIES Observatory (2019). *International basketball migration report*. Retrieved from <http://www.fiba.basketball/documents/ibmr2019.pdf> on April 16th, 2020.
- Cid, L., Monteiro, D., Teixeira, D. S., Evmenenko, A., Andrade, A., Bento, T., Vitorino, A., Couto, N., & Rodrigues, F. (2022). Assessment in sport and exercise psychology: Considerations and recommendations for translation and validation of questionnaires. *Frontiers in Psychology*, 13, 806176. <https://doi.org/10.3389/fpsyg.2022.806176>
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment*, 7(3), 309–319. <https://doi.org/10.1037/1040-3590.7.3.309>
- Clarke, N. J., & Harwood, C. G. (2014). Parenting experiences in elite youth football: A phenomenological study. *Psychology of Sport and Exercise*, 15(5), 528–537. <https://doi.org/10.1016/j.psychsport.2014.05.004>
- Cohen, J. (1992). Statistical power analysis. *Current Directions in Psychological Science*, 1(3), 98–101. <https://doi.org/10.1111/1467-8721.ep10768783>
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences* (0 ed.). Routledge. <https://doi.org/10.4324/9780203771587>
- Cohler, B. J., & Cole, R. (2004). Studying Older Lives: Reciprocal Acts of. *Aging and biography: Explorations in adult development*, 61.

- Collins, E. C. (1992). Qualitative Research as Art: Toward a Holistic Process. *Theory Into Practice, 31*(2), 181–186. <http://www.jstor.org/stable/1476405>
- Collins, D. (2003). Pretesting survey instruments: an overview of cognitive methods. *Quality of life research, 12*(3), 229–238.
- Collins, D., Bailey, R., Ford, P. A., MacNamara, Á., Toms, M., & Pearce, G. (2012). Three Worlds: New directions in participant development in sport and physical activity. *Sport, Education and Society, 17*(2), 225–243. <https://doi.org/10.1080/13573322.2011.607951>
- Collins, D. J., Macnamara, A., & McCarthy, N. (2016). Putting the bumps in the rocky road: Optimizing the pathway to excellence. *Frontiers in Psychology, 7*(7). <https://doi.org/10.3389/fpsyg.2016.01482>
- Collins, D., & MacNamara, Á. (2012). The rocky road to the top: Why talent needs trauma. *Sports Medicine, 42*(11), 907–914. <https://doi.org/10.1007/BF03262302>
- Collins, D., MacNamara, Á., & Cruickshank, A. (2019). Research and practice in talent identification and development—Some thoughts on the state of play. *Journal of Applied Sport Psychology, 31*(3), 340–351. <https://doi.org/10.1080/10413200.2018.1475430>
- Collins, J., & Durand-Bush, N. (2010). Enhancing the cohesion and performance of an elite curling team through a self-regulation intervention. *International Journal of Sports Science & Coaching, 5*(3), 343–362. <https://doi.org/10.1260/1747-9541.5.3.343>
- Collins, D., Martindale, R., Button, A., & Sowerby, K. (2010). Building a physically active and talent rich culture: An educationally sound approach. *European Physical Education Review, 16*(1), 7–28. <https://doi.org/10.1177/1356336X10369196>
- Collins, D. J., Macnamara, A., & McCarthy, N. (2016b). Putting the bumps in the rocky road: Optimizing the pathway to excellence. *Frontiers in Psychology, 7*(7). <https://doi.org/10.3389/fpsyg.2016.01482>



- Colman, A. M., Norris, C. E., & Preston, C. C. (1997). Comparing rating scales of different lengths: Equivalence of scores from 5-point and 7-point scales. *Psychological Reports, 80*(2), 355-362. <https://doi.org/10.2466/pr0.1997.80.2.355>
- Compton, D., Love, T. P., & Sell, J. (2012). Developing and assessing intercoder reliability in studies of group interaction. *Sociological Methodology, 42*(1), 348–364. <https://doi.org/10.1177/0081175012444860>
- Conrad, F., & Blair, J. (1996). *From impressions to data: Increasing the objectivity of cognitive interviews*. In Proceedings of the section on survey research methods, annual meetings of the American Statistical Association (Vol. 1, No. 10). Alexandria: American Statistical Association.
- Corbin, J. M., & Strauss, A. L. (2015). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (4th ed.). Los Angeles: SAGE.
- Côté, J. (1999). The influence of the family in the development of talent in sport. *The Sport Psychologist, 13*(4), 395–417. <https://doi.org/10.1123/tsp.13.4.395>
- Côté, J., & Hay, J. (2002). Children’s involvement in sport: A developmental perspective. In J. M. Silva & D. Stevens (Eds.), *Psychological foundations of sport* (pp. 484–502). Boston: Allyn and Bacon.
- A. (2014). Overuse injuries and burnout in youth sports: A position statement from the American Medical Society for Sports Medicine. *British Journal of Sports Medicine, 48*(4), 287–288. <https://doi.org/10.1136/bjsports-2013-093299>
- Côté, J., Macdonald, D. J., Baker, J., & Abernethy, B. (2006). When “where” is more important than “when”: Birthplace and birthdate effects on the achievement of sporting expertise. *Journal of Sports Sciences, 24*(10), 1065–1073. <https://doi.org/10.1080/02640410500432490>

- Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management*, 26(3), 435–462. <https://doi.org/10.1177/014920630002600304>
- Crenshaw, K. (1991). Mapping the margins: Intersectionality, identity politics, and violence against women of color. *Stanford Law Review*, 43(6), 1241. <https://doi.org/10.2307/1229039>
- Creswell, JW, Plano Clark, VL, Gutman, ML, Hanson, WE (2003) Advanced mixed methods research designs. In: Tashakkori, A, Teddlie, C (eds), *Handbook of Mixed Methods in Social & Behavioral Research*. Thousand Oaks, CA: Sage. 209–240
- Creswell, JW, Plano Clark, VL (2007) *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: Sage.
- Cumming, J., and Ramsey, R. (2009). “Imagery interventions in sport” in *Advances in applied sport psychology*, (Routledge), 15–46
- Czaja, R., Blair, J., & Blair, E. (2014). *Designing surveys: A guide to decisions and procedures* (Third edition). SAGE.
- Damasio, A. (2003). Feelings of emotion and the self. *Annals of the New York Academy of Sciences*, 1001(1), 253–261. <https://doi.org/10.1196/annals.1279.014>
- D’Arripe-Longueville, F., Saury, J., Fournier, J., & Durand, M. (2001). Coach-athlete interaction during elite archery competitions: An application of methodological frameworks used in ergonomics research to sport psychology. *Journal of Applied Sport Psychology*, 13(3), 275–299. <https://doi.org/10.1080/104132001753144419>
- Davids, K., Glazier, P., Araujo, D., & Bartlett, R. (2003). Movement systems as dynamical systems: The functional role of variability and its implications for sports medicine. *Sports Medicine*, 33(4), 245–260. <https://doi.org/10.2165/00007256-200333040-00001>

- Davis, L., & Jowett, S. (2010). Investigating the interpersonal dynamics between coaches and athletes based on fundamental principles of attachment. *Journal of Clinical Sport Psychology, 4*(2), 112–132. <https://doi.org/10.1123/jcsp.4.2.112>
- Davis, L., & Jowett, S. (2014). Coach–athlete attachment and the quality of the coach–athlete relationship: Implications for athlete’s well-being. *Journal of Sports Sciences, 1–11*. <https://doi.org/10.1080/02640414.2014.898183>
- Daw, J., & Burton, D. (1994). Evaluation of a comprehensive psychological skills training program for collegiate tennis players. *The Sport Psychologist, 8*(1), 37–57. <https://doi.org/10.1123/tsp.8.1.37>
- Deem, R. (2001). Globalisation, new managerialism, academic capitalism and entrepreneurialism in universities: is the local dimension still important? *Journal of Comparative Education, 37*(1), 7–20
- Del Boca, F. K., & Noll, J. A. (2000). Truth or consequences: The validity of self-report data in health services research on addictions. *Addiction, 95*(11), 347–360. <https://doi.org/10.1080/09652140020004278>
- DeVellis R. (2003) *Scale development: Theory and applications*. 2nd edition Thousand Oaks: Sage.
- DeVellis, R. F. (2017). *Scale development: Theory and applications* (Fourth edition). SAGE.
- Devilly, G. J., & Borkovec, T. D. (2000). Psychometric properties of the credibility/expectancy questionnaire. *Journal of Behavior Therapy and Experimental Psychiatry, 31*(2), 73–86. [https://doi.org/10.1016/S0005-7916\(00\)00012-4](https://doi.org/10.1016/S0005-7916(00)00012-4)
- Diefenbach, T. (2009). Are case studies more than sophisticated storytelling? Methodological problems of qualitative empirical research mainly based on semi-structured interviews. *Quality & Quantity, 43*(6), 875–894. <https://doi.org/10.1007/s11135-008-9164-0>

- Diehl, R., Poczwadowski, A., Stambulova, N., O'Neil, A., & Haberl, P. (2020). Transitioning to and thriving at the Olympic training center, Colorado Springs: Phases of an adaptive transition. *Sport in Society*, 23(4), 678–696. <https://doi.org/10.1080/17430437.2019.1600299>
- Di Paolo, E.A.; Buhrmann, T.; Barandiaran, X.E. (2017). *Sensorimotor Life: An Enactive Proposal*. Oxford UP: New York, NY, USA.
- Dillman, D. A. (2000). *Mail and Internet surveys: The tailored design method*. New York: Wiley.
- Donald, M. (1993). *Origins of the modern mind: Three stages in the evolution of culture and cognition* (Nachdr.). Harvard University Press.
- Drasch, K., & Matthes, B. (2013). Improving retrospective life course data by combining modularized self-reports and event history calendars: experiences from a large-scale survey. *Quality & Quantity*, 47(2), 817-838. <https://doi.org/10.1007/s11135-011-9568-0>
- Drew, K., Morris, R., Tod, D., & Eubank, M. (2019). A meta-study of qualitative research on the junior-to-senior transition in sport. *Psychology of Sport and Exercise*, 45, 101556. <https://doi.org/10.1016/j.psychsport.2019.101556>
- Drolet, A. L., & Morrison, D. G. (2001). Do we really need multiple-item measures in service research? *Journal of Service Research*, 3(3), 196–204. <https://doi.org/10.1177/109467050133001>
- Duckworth, A. L., Peterson, C., Matthews, M. D., & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. *Journal of Personality and Social Psychology*, 92(6), 1087–1101. <https://doi.org/10.1037/0022-3514.92.6.1087>

- Durand, M. (2013). Human activity, social practices and lifelong education: An introduction. *International Journal of Lifelong Education*, *32*(1), 1–13. <https://doi.org/10.1080/02601370.2012.734495>
- Durand-Bush, N., & Salmela, J. H. (2002). The development and maintenance of expert athletic performance: Perceptions of world and Olympic champions. *Journal of Applied Sport Psychology*, *14*(3), 154–171. <https://doi.org/10.1080/10413200290103473>
- Durand-Bush, N., Salmela, J. H., & Green-Demers, I. (2001). The Ottawa mental skills assessment tool (OMSAT-3\*). *The Sport Psychologist*, *15*(1), 1–19. <https://doi.org/10.1123/tsp.15.1.1>
- Đurović, D., Aleksić Veljković, A., & Petrović, T. (2020). Psychological aspects of motivation in sport achievement. *Facta Universitatis, Series: Physical Education and Sport*, 465. <https://doi.org/10.22190/FUPES190515044D>
- Dweck, C. (2017). *Mindset—updated edition: Changing the way you think to fulfil your potential*. Hachette UK.
- Edwards, D. J., Edwards, S. D., & Basson, C. J. (2004). Psychological well—being and physical self-esteem in sport and exercise. *International Journal of Mental Health Promotion*, *6*(1), 25–32. <https://doi.org/10.1080/14623730.2004.9721921>
- Eimé, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for children and adolescents: Informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity*, *10*(1), 98. <https://doi.org/10.1186/1479-5868-10-98>

- Ekengren, J., Stambulova, N. B., Johnson, U., Carlsson, I.-M., & Ryba, T. V. (2020). Composite vignettes of Swedish male and female professional handball players' career paths. *Sport in Society*, 23(4), 595–612. <https://doi.org/10.1080/17430437.2019.1599201>
- Ely, G., & Ronkainen, N. J. (2021). “It’s not just about football all the time either”: Transnational athletes’ stories about the choice to migrate. *International Journal of Sport and Exercise Psychology*, 19(1), 29–42. <https://doi.org/10.1080/1612197X.2019.1637364>
- Engeström, Y., Miettinen, R., & Punamäki-Gitai, R. L. (Eds.). (1999). *Perspectives on activity theory*. Cambridge University Press
- Epstein, J., Santo, R. M., & Guillemin, F. (2015). A review of guidelines for cross-cultural adaptation of questionnaires could not bring out a consensus. *Journal of Clinical Epidemiology*, 68(4), 435–441. <https://doi.org/10.1016/j.jclinepi.2014.11.021>
- Erickson, K., & Côté, J. (2016). A season-long examination of the intervention tone of coach–athlete interactions and athlete development in youth sport. *Psychology of Sport and Exercise*, 22, 264–272. <https://doi.org/10.1016/j.psychsport.2015.08.006>
- Ericsson, K. A. (2003). The acquisition of expert performance as problem solving: Construction and modification of mediating mechanisms through deliberate practice. In J. E. Davidson & R. J. Sternberg (Eds.), *The Psychology of Problem Solving* (1st ed., pp. 31–84). Cambridge University Press. <https://doi.org/10.1017/CBO9780511615771.003>
- Eveland, W. P., Hutchens, M. J., & Shen, F. (2009). Exposure, attention, or “use” of news? Assessing aspects of the reliability and validity of a central concept in political communication research. *Communication Methods and Measures*, 3(4), 223–244. <https://doi.org/10.1080/19312450903378925>

- Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272–299. <https://doi.org/10.1037/1082-989X.4.3.272>
- Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods*, 39(2), 175–191. <https://doi.org/10.3758/BF03193146>
- Feldner, M. T., Zvolensky, M. J., Eifert, G. H., & Spira, A. P. (2003). Emotional avoidance: An experimental test of individual differences and response suppression using biological challenge. *Behaviour Research and Therapy*, 41(4), 403–411. [https://doi.org/10.1016/S0005-7967\(02\)00020-7](https://doi.org/10.1016/S0005-7967(02)00020-7)
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). SAGE Publications.
- Field, A. (2020). *Discovering statistics using IBM SPSS statistics* (5<sup>th</sup> ed.). SAGE Publications.
- Finstad, K. (2010). Response interpolation and scale sensitivity: Evidence against 5-point scales. *Journal of usability studies*, 5(3), 104-110.
- Firestone, W. A. (1987). Meaning in method: The rhetoric of quantitative and qualitative research. *Educational Researcher*, 16(7), 16-21. <https://doi.org/10.3102/0013189X016007016>
- Fivush, R., & Nelson, K. (2004). Culture and language in the emergence of autobiographical memory. *Psychological Science*, 15(9), 573–577. <https://doi.org/10.1111/j.0956-7976.2004.00722.x>
- Fivush, R. (2008). Remembering and reminiscing: How individual lives are constructed in family narratives. *Memory Studies*, 1(1), 49-58. DOI: 10.1177/1750698007083888

- Fletcher, D., & Sarkar, M. (2016). Mental fortitude training: An evidence-based approach to developing psychological resilience for sustained success. *Journal of Sport Psychology in Action*, 7(3), 135–157. <https://doi.org/10.1080/21520704.2016.1255496>
- Flickinger, M., Tuschke, A., Gruber-Muecke, T., & Fiedler, M. (2014). In search of rigor, relevance, and legitimacy: What drives the impact of publications? *Journal of Business Economics*, 84(1), 99–128. <https://doi.org/10.1007/s11573-013-0692-2>
- Fraenkel, J. R., & Wallen, N. E. (2009). *How to design and evaluate research in education* (7th ed). McGraw-Hill.
- Fraley, C. (1998). How many clusters? Which clustering method? Answers via model-based cluster analysis. *The Computer Journal*, 41(8), 578–588. <https://doi.org/10.1093/comjnl/41.8.578>
- Francis, H. M., Osborne-Crowley, K., & McDonald, S. (2017). Validity and reliability of a questionnaire to assess social skills in traumatic brain injury: A preliminary study. *Brain Injury*, 31(3), 336–343. <https://doi.org/10.1080/02699052.2016.1250954>
- Frank, A. W. (2006). Health stories as connectors and subjectifies. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine*, 10(4), 421–440. <https://doi.org/10.1177/1363459306067312>
- Franck, A., & Stambulova, N. B. (2019). The junior to senior transition: A narrative analysis of the pathways of two Swedish athletes. *Qualitative Research in Sport, Exercise and Health*, 11(3), 284–298. <https://doi.org/10.1080/2159676X.2018.1479979>
- Freeman, J. (1995). 'Where talent begins', in J. Freeman, P. Span, & H. Wagner (Eds.) *Actualising Talent: a Lifelong Challenge*. London: Cassell.
- Gallagher, S. (2017). *Enactivist Interventions: Rethinking the Mind*. Oxford University Press: London, UK.



- Gardner, F. L. (2009). Efficacy, mechanisms of change, and the scientific development of sport psychology. *Journal of Clinical Sport Psychology*, 3(2), 139–155. <https://doi.org/10.1123/jcsp.3.2.139>
- Gardner, F. L., & Moore, Z. E. (2004). A mindfulness-acceptance-commitment-based approach to athletic performance enhancement: Theoretical considerations. *Behavior Therapy*, 35(4), 707–723. [https://doi.org/10.1016/S0005-7894\(04\)80016-9](https://doi.org/10.1016/S0005-7894(04)80016-9)
- Gardner, F. L., & Moore, Z. E. (2007). *The psychology of enhancing human performance: The mindfulness-acceptance-commitment approach (Mac): a practitioner's guide*. Springer Pub.
- Gardner, F. L., & Moore, Z. E. (2012). Mindfulness and acceptance models in sport psychology: A decade of basic and applied scientific advancements. *Canadian Psychology / Psychologie Canadienne*, 53(4), 309–318. <https://doi.org/10.1037/a0030220>
- Garn, A. (2016). Perceived teammate acceptance and sport commitment in adolescent female volleyball players. *The Sport Psychologist*, 30(1), 30–39. <https://doi.org/10.1123/tsp.2015-0004>
- Gaudreau, P., & Blondin, J.-P. (2004b). Different athletes cope differently during a sport competition: A cluster analysis of coping. *Personality and Individual Differences*, 36(8), 1865–1877. <https://doi.org/10.1016/j.paid.2003.08.017>
- Gaudreau, P., & Blondin, J.-P. (2004b). Differential associations of dispositional optimism and pessimism with coping, goal attainment, and emotional adjustment during sport competition. *International Journal of Stress Management*, 11(3), 245–269. <https://doi.org/10.1037/1072-5245.11.3.245>

- Gaudreau, P., Blondin, J.-P., & Lapierre, A.-M. (2002). Athletes' coping during a competition: Relationship of coping strategies with positive affect, negative affect, and performance–goal discrepancy. *Psychology of Sport and Exercise*, 3(2), 125–150. [https://doi.org/10.1016/S1469-0292\(01\)00015-2](https://doi.org/10.1016/S1469-0292(01)00015-2)
- Gesbert, V., Crettaz Von Roten, F., & Hauw, D. (2021). Reviewing the role of the environment in the talent development of a professional soccer club. *PLOS ONE*, 16(2), e0246823. <https://doi.org/10.1371/journal.pone.0246823>
- Gesbert, V., Durny, A., & Hauw, D. (2017). How do soccer players adjust their activity in team coordination? An enactive phenomenological analysis. *Frontiers in Psychology*, 8, 854. <https://doi.org/10.3389/fpsyg.2017.00854>
- Gesbert, V., & Hauw, D. (2019). Commentary: Interpersonal coordination in soccer: interpreting literature to enhance the representativeness of task design, from dyads to teams. *Frontiers in Psychology*, 10, 1093. <https://doi.org/10.3389/fpsyg.2019.01093>
- Glass, G. V., Peckham, P. D., & Sanders, J. R. (1972). Consequences of failure to meet assumptions underlying the fixed effects analysis of variance and covariance. *Review of Educational Research*, 42, 237-288. DOI:10.3102/00346543042003237
- Glaser, B., & Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Mill Valley, CA: Sociology Press.
- Goetz, A. R., Cogle, J. R., & Lee, H. J. (2013). Revisiting the factor structure of the 12-item Disgust Propensity and Sensitivity Scale – Revised: Evidence for a third component. *Personality and Individual Differences*, 55(5), 579–584. <https://doi.org/10.1016/j.paid.2013.04.029>
- Golay, P., Basterrechea, L., Conus, P., & Bonsack, C. (2016). Internal and predictive validity of the French health of the nation outcome scales: Need for future directions. *PLOS ONE*, 11(8), e0160360. <https://doi.org/10.1371/journal.pone.0160360>

- Golby, J., & Wood, P. (2016). The effects of psychological skills training on mental toughness and psychological well-being of student-athletes. *Psychology, 07*(06), 901–913. <https://doi.org/10.4236/psych.2016.76092>
- Goodman, F. R., Kashdan, T. B., Mallard, T. T., & Schumann, M. (2014). A brief mindfulness and yoga intervention with an entire NCAA Division I athletic team: An initial investigation. *Psychology of Consciousness: Theory, Research, and Practice, 1*(4), 339–356. <https://doi.org/10.1037/cns0000022>
- Gosling, S. D., Rentfrow, P. J., & Swann, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality, 37*(6), 504–528. [https://doi.org/10.1016/S0092-6566\(03\)00046-1](https://doi.org/10.1016/S0092-6566(03)00046-1)
- Gouju, J. L., Vermersch, P., & Bouthier, D. (2007). A psycho-phenomenological approach to sport psychology: The presence of the opponents in hurdle races. *Journal of Applied Sport Psychology, 19*(2), 173–186. <https://doi.org/10.1080/10413200601185172>
- Gould, D., Dieffenbach, K., & Moffett, A. (2002). Psychological characteristics and their development in Olympic champions. *Journal of Applied Sport Psychology, 14*(3), 172–204. <https://doi.org/10.1080/10413200290103482>
- Gould, D., Flett, R., & Lauer, L. (2012). The relationship between psychosocial developmental and the sports climate experienced by underserved youth. *Psychology of Sport and Exercise, 13*(1), 80–87. <https://doi.org/10.1016/j.psychsport.2011.07.005>
- Gould, D., Voelker, D. K., Damarjian, N., & Greenleaf, C. (2014). Imagery training for peak performance. In J. L. Van Raalte & B. W. Brewer (Eds.), *Exploring sport and exercise psychology* (3rd ed.). (pp. 55–82). American Psychological Association. <https://doi.org/10.1037/14251-004>

- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis, 11*(3), 255–274. <https://doi.org/10.3102/01623737011003255>
- Greenglass, E. R., & Fiksenbaum, L. (2009). Proactive coping, positive affect, and well-being: Testing for mediation using path analysis. *European Psychologist, 14*(1), 29–39. <https://doi.org/10.1027/1016-9040.14.1.29>
- Greenhouse, S. W., & Geisser, S. (1959). On methods in the analysis of profile data. *Psychometrika, 24*(2), 95–112. <https://doi.org/10.1007/BF02289823>
- Griffin, B., & Hesketh, B. (2003). Adaptable behaviours for successful work and career adjustment. *Australian Journal of Psychology, 55*(2), 65–73. <https://doi.org/10.1080/00049530412331312914>
- Gross, M., Moore, Z. E., Gardner, F. L., Wolanin, A. T., Pess, R., & Marks, D. R. (2018). An empirical examination comparing the Mindfulness-Acceptance-Commitment approach and Psychological Skills Training for the mental health and sport performance of female student athletes. *International Journal of Sport and Exercise Psychology, 16*(4), 431–451. <https://doi.org/10.1080/1612197X.2016.1250802>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59–82. <https://doi.org/10.1177/1525822X05279903>
- Gulati, R. (2007). Tent Poles, Tribalism, and Boundary Spanning: The Rigor-Relevance Debate in Management Research. *The Academy of Management Journal, 50*(4), 775–782. <http://www.jstor.org/stable/20159889>
- Güllich, A. (2014). Many roads lead to Rome – Developmental paths to Olympic gold in men’s field hockey. *European Journal of Sport Science, 14*(8), 763–771. <https://doi.org/10.1080/17461391.2014.905983>

- Güllich, A., & Cobley, S. (2017). "On the efficacy of talent identification and talent development programmes," in *The Routledge Handbook of Talent Identification and Development in Sport*, eds J. Baker, S. Cobley, J. Schorer, and N. Wattie (London: Routledge), 80–98.
- Güllich, A., & Emrich, E. (2014). Considering long-term sustainability in the development of world class success. *European Journal of Sport Science*, *14*(sup1), S383–S397. <https://doi.org/10.1080/17461391.2012.706320>
- Gustafsson, H., Lundqvist, C., & Tod, D. (2017). Cognitive behavioral intervention in sport psychology: A case illustration of the exposure method with an elite athlete. *Journal of Sport Psychology in Action*, *8*(3), 152–162. <https://doi.org/10.1080/21520704.2016.1235649>
- Hair, J. F. (Ed.). (2010). *Multivariate data analysis* (7th ed). Prentice Hall.
- Hair, J. F. (Ed.). (2017). *A primer on partial least squares structural equation modelling* (Pls-sem) (Second edition). Sage.
- Hammond, K. R., & Bateman, R. A. (2009). Sport psychology as an instance of ecological psychology. *International Journal of Sport Psychology*, *40*, 38-49.
- Hanson, W. E., Creswell, J. W., Clark, V. L. P., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, *52*(2), 224–235. <https://doi.org/10.1037/0022-0167.52.2.224>
- Hanton, S., Neil, R., & Mellalieu, S. D. (2008). Recent developments in competitive anxiety direction and competition stress research. *International Review of Sport and Exercise Psychology*, *1*(1), 45–57. <https://doi.org/10.1080/17509840701827445>
- Hardy, L., & Callow, N. (1999). Efficacy of external and internal visual imagery perspectives for the enhancement of performance on tasks in which form is important. *Journal of Sport and Exercise Psychology*, *21*(2), 95–112. <https://doi.org/10.1123/jsep.21.2.95>

- Hauw, D. (2009). L'entrée « activité » pour l'analyse des techniques et des performances sportives des athlètes de haut niveau : *Bulletin de Psychologie*, Numéro 502(4), 365–372. <https://doi.org/10.3917/bupsy.502.0365>
- Hauw, D. (2017). Antidoping education using a lifelong situated activity-based approach: Evidence, conception, and challenges. *Quest*, 69(2), 256–275. <https://doi.org/10.1080/00336297.2016.1220320>
- Hauw, D. (2018). Énaction et intervention en psychologie du sport chez les sportifs élités et en formation. *Canadian Journal of Behavioural Science / Revue Canadienne Des Sciences Du Comportement*, 50(1), 54–64. <https://doi.org/10.1037/cbs0000094>
- Hauw, D. (2023). In Collins, D., & Cruickshank, A. (Eds.). (2022). *Sport psychology essentials*. Human Kinetics.
- Hauw, D., Berthelot, C., & Durand, M. (2003). Enhancing performance in elite athlete through situated-cognition analysis: Trampolinists' course of action during competition. *International Journal of Sport Psychology*, 34, (4), 299–321
- Hauw, D., & Bilard, J. (2012). Situated activity analysis of elite track and field athletes' use of prohibited performance-enhancing substances. *Journal of Substance Use*, 17(2), 183–197. <https://doi.org/10.3109/14659891.2010.545858>
- Hauw, D., & Bilard, J. (2017). Understanding appearance-enhancing drug use in sport using an enactive approach to body image. *Frontiers in Psychology*, 8, 2088. <https://doi.org/10.3389/fpsyg.2017.02088>
- Hauw, D., & Durand, M. (2007). Situated analysis of elite trampolinists' problems in competition using retrospective interviews. *Journal of Sports Sciences*, 25(2), 173–183. <https://doi.org/10.1080/02640410600624269>
- Hauw, D., & Durand, M. (2008). Temporal dynamics of acrobatic activity: An approach of elite athletes' specious present. *Journal of Sports Science & Medicine*, 7(1), 8–14.

- Hauw, D., Gesbert, V., & Crettaz Von Roten, F. (2023). Exploring dynamics of changes in psychological skills in the development of talented athletes. *Perceptual and Motor Skills, 130*(3), 1077–1098. <https://doi.org/10.1177/00315125231165163>
- Hauw, D., Gesbert, V., Crettaz Von Roten, F., & Rolland, J.-P. (2022). A multilayer approach for assessing the psychological needs of aspiring soccer players: Implications for overseeing talent development. *Professional Psychology: Research and Practice, 53*(2), 133–142. <https://doi.org/10.1037/pro0000438>
- Hauw D., & Lemeur Y. (2013). Organisation de l'expérience et cours de vie. In L. Albarello, E. Bourgeois, J.M. Barbier, & M. Durand (Eds.), *L'expérience au travail et en formation* (pp. 163-191). Paris: PUF. <https://doi.org/10.3917/puf.albar.2013.01.0163>
- Hauw, D., & Mohamed, S. (2015). Patterns in the situated activity of substance use in the careers of elite doping athletes. *Psychology of Sport and Exercise, 16*, 156–163. <https://doi.org/10.1016/j.psychsport.2013.09.005>
- Hayes, A. M., & Feldman, G. (2004). Clarifying the construct of mindfulness in the context of emotion regulation and the process of change in therapy. *Clinical Psychology: Science and Practice, 11*(3), 255–262. <https://doi.org/10.1093/clipsy.bph080>
- Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy* (Vol. 6). New York: Guilford press.
- Healy, L., Tincknell-Smith, A., & Ntoumanis, N. (2018). Goal setting in sport and performance. In L. Healy, A. Tincknell-Smith, & N. Ntoumanis, *Oxford Research Encyclopedia of Psychology*. Oxford University Press. <https://doi.org/10.1093/acrefore/9780190236557.013.152>
- Henriksen, K., Stambulova, N., & Roessler, K. K. (2010). Holistic approach to athletic talent development environments: A successful sailing milieu. *Psychology of Sport and Exercise, 11*(3), 212–222. <https://doi.org/10.1016/j.psychsport.2009.10.005>

- Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., Ketchen, D. J., Hair, J. F., Hult, G. T. M., & Calantone, R. J. (2014). Common beliefs and reality about pls: Comments on Rönkkö and Evermann (2013). *Organizational Research Methods, 17*(2), 182–209. <https://doi.org/10.1177/1094428114526928>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Herdman, M. (1997). 'Equivalence' and the translation and adaptation of health-related quality of life questionnaires. *Quality of Life Research, 6*(3), 0–0. <https://doi.org/10.1023/A:1026410721664>
- Hill, M., & Hill, A. (2005). *Investigacao por Questionario*, 2nd Edn. Lisbon: Edicoes Silabo.
- Hill, E. J., Grzywacz, J. G., Allen, S. M., Blanchard, V. L., Matz-Costa, C., Shulkin, S., & Pitt-Catsouphes, M. (2008). Defining and conceptualizing workplace flexibility. *Community, Work & Family, 11*(2), 149-163. doi:10.1080/13668800802024678
- Hill, A., MacNamara, Á., & Collins, D. (2019). Development and initial validation of the psychological characteristics of developing excellence questionnaire version 2(Pcdeq2). *European Journal of Sport Science, 19*(4), 517–528. <https://doi.org/10.1080/17461391.2018.1535627>
- Hinz, A., Michalski, D., Schwarz, R., & Herzberg, P. Y. (2007). The acquiescence effect in responding to a questionnaire. *Psycho-Social Medicine, 4*, Doc07.
- Höll, L., & Burnett, C. (2014). Changing relationships with significant others: Reflections of national and international level student-athletes. *South African Journal for Research in Sport, Physical Education and Recreation, 36*(2), 115-128.



- Holm, J. E., Beckwith, B. E., Ehde, D. M., & Tinius, T. P. (1996). Cognitive-behavioral interventions for improving performance in competitive athletes: A controlled treatment outcome study. *International Journal of Sport Psychology*, 27, 463-475.
- Holmes, P. S., & Collins, D. J. (2001). The PETTLEP approach to motor imagery: A functional equivalence model for sport psychologists. *Journal of Applied Sport Psychology*, 13(1), 60–83. <https://doi.org/10.1080/10413200109339004>
- Holt, N. L., & Tamminen, K. A. (2010). Moving forward with grounded theory in sport and exercise psychology. *Psychology of Sport and Exercise*, 11(6), 419–422. <https://doi.org/10.1016/j.psychsport.2010.07.009>
- Horn, T. S., & Horn, J. L. (2007). Family influences on children’s sport and physical activity participation, behavior, and psychosocial responses. In G. Tenenbaum & R.C. Eklund (Eds) *Handbook of sport psychology (3rd ed., pp, 685-711)*. Hoboken, NJ: Wiley.
- Hoyle, R. H. (Ed.). (2013). *Structural equation modeling: Concepts, issues, and applications*. SAGE Publications, Inc.
- Hoyt, D. F., & Taylor, C. R. (1981). Gait and the energetics of locomotion in horses. *Nature*, 292(5820), 239–240. <https://doi.org/10.1038/292239a0>
- Hristovski, R., Davids, K., & Araújo, D. (2006). Affordance-controlled bifurcations of action patterns in martial arts. *Nonlinear Dynamics, Psychology, and Life Sciences*, 10(4), 409–444.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling : A Multidisciplinary Journal*, 6(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Huet, B., & Saury, J. (2011). Ressources distribuées et interactions entre élèves au sein d’un groupe d’apprentissage : Une étude de cas en éducation physique et sportive. *Ejournal*

- de La Recherche Sur l'intervention En Éducation Physique et Sport -eJRIEPS*, 24.  
<https://doi.org/10.4000/ejrieps.3865>
- Hutto, D., & Myin, E. (2012). *Radicalizing Enactivism: Basic Minds without Content*. The MIT Press: Cambridge, MA, USA.
- Ivarsson, A., Stambulova, N., & Johnson, U. (2018). Injury as a career transition: Experiences of a Swedish elite handball player. *International Journal of Sport and Exercise Psychology*, 16(4), 365-381. <https://doi.org/10.1080/1612197X.2016.1242149>
- Ivarsson, A., Stenling, A., Fallby, J., Johnson, U., Borg, E., & Johansson, G. (2015). The predictive ability of the talent development environment on youth elite football players' well-being: A person-centered approach. *Psychology of Sport and Exercise*, 16, 15–23. <https://doi.org/10.1016/j.psychsport.2014.09.006>
- Jayanthi, N., & Brenner, J. (2017). Caring for the young athlete: Past, present and future. *British Journal of Sports Medicine*, 51(3), 141–141. <https://doi.org/10.1136/bjsports-2016-097326>
- Joas, H. (1996). *The Creativity of Action*. The University of Chicago Press
- Johns, R. (2010). Likert items and scales. *Survey question bank: Methods fact sheet*, 1(1), 11-28.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14–26. <https://doi.org/10.3102/0013189X033007014>
- Jolijn Hendriks, A. A., Perugini, M., Angleitner, A., Ostendorf, F., Johnson, J. A., De Fruyt, F., Hřebíčková, M., Kreitler, S., Murakami, T., Bratko, D., Conner, M., Nagy, J., Rodríguez-Fornells, A., & Ruisel, I. (2003). The five-factor personality inventory: Cross-cultural generalizability across 13 countries. *European Journal of Personality*, 17(5), 347–373. <https://doi.org/10.1002/per.491>

- Jones, G., Hanton, S., & Connaughton, D. (2002). What is this thing called mental toughness? An investigation of elite sport performers. *Journal of Applied Sport Psychology, 14*(3), 205–218. <https://doi.org/10.1080/10413200290103509>
- Jones, R. A., Mahoney, J. W., & Gucciardi, D. F. (2014). On the transition into elite rugby league: Perceptions of players and coaching staff. *Sport, Exercise, and Performance Psychology, 3*(1), 28–45. <https://doi.org/10.1037/spy0000013>
- Josefsson, T., Ivarsson, A., Gustafsson, H., Stenling, A., Lindwall, M., Tornberg, R., & Böröy, J. (2019). Effects of mindfulness-acceptance-commitment (Mac) on sport-specific dispositional mindfulness, emotion regulation, and self-rated athletic performance in a multiple-sport population: An rct study. *Mindfulness, 10*(8), 1518–1529. <https://doi.org/10.1007/s12671-019-01098-7>
- Josefsson, T., Ivarsson, A., Lindwall, M., Gustafsson, H., Stenling, A., Böröy, J., Mattsson, E., Carnebratt, J., Sevholt, S., & Falkevik, E. (2017). Mindfulness mechanisms in sports: Mediating effects of rumination and emotion regulation on sport-specific coping. *Mindfulness, 8*(5), 1354–1363. <https://doi.org/10.1007/s12671-017-0711-4>
- Josefsson, T., Lindwall, M., & Broberg, A. G. (2014). The effects of a short-term mindfulness-based intervention on self-reported mindfulness, decentering, executive attention, psychological health, and coping style: Examining unique mindfulness effects and mediators. *Mindfulness, 5*(1), 18–35. <https://doi.org/10.1007/s12671-012-0142-1>
- Jørgensen, C. R., Berntsen, D., Bech, M., Kjølbye, M., Bennedsen, B. E., & Ramsgaard, S. B. (2012). Identity-related autobiographical memories and cultural life scripts in patients with borderline personality disorder. *Consciousness and Cognition, 21*(2), 788–798. <https://doi.org/10.1016/j.concog.2012.01.010>
- Jowett, S. (2005). The coach-athlete partnership. *The psychologist, 18*(7), 412-415.

- Jowett, S. (2008). Outgrowing the familial coach–athlete relationship. *International Journal of Sport Psychology*, *39*, 20–40.
- Jowett, S., & Poczwadowski, A. (2007). Understanding the Coach-Athlete Relationship. In S. Jowett & D. Lavallee (Eds.), *Social Psychology in Sport* (pp. 3–14). Human Kinetics.
- Jowett, S. (2017). Coaching effectiveness: The coach–athlete relationship at its heart. *Current Opinion in Psychology*, *16*, 154–158. <https://doi.org/10.1016/j.copsyc.2017.05.006>
- Juth, V., Dickerson, S. S., Zoccola, P. M., & Lam, S. (2015). Understanding the utility of emotional approach coping: Evidence from a laboratory stressor and daily life. *Anxiety, Stress, & Coping*, *28*(1), 50–70. <https://doi.org/10.1080/10615806.2014.921912>
- Kahn, J. H. (2006). Factor analysis in counseling psychology research, training, and practice: Principles, advances, and applications. *The Counseling Psychologist*, *34*(5), 684–718. <https://doi.org/10.1177/0011000006286347>
- Kalina, I. G., Golubev, A. I., & Aidorov, R. A. (2016). Sports activity as a factor contributing to social adaptation of student. *Journal of Organization culture, Communication, and Conflict*, vol 20-3.
- Kaplan, D., & Keller, B. (2011). A note on cluster effects in latent class analysis. *Structural Equation Modeling: A Multidisciplinary Journal*, *18*(4), 525–536. <https://doi.org/10.1080/10705511.2011.607071>
- Kashima, Y., Gurumurthy, A. K., Ouschan, L., Chong, T., & Mattingley, J. (2007). Connectionism and Self: James, Mead, and the Stream of Enculturated Consciousness. *Psychological Inquiry*, *18*(2), 73–96. <http://www.jstor.org/stable/20447362>
- Kenny, D. A., & McCoach, D. B. (2003). Effect of the number of variables on measures of fit in structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, *10*, 333–351. doi: 10.1207/S15328007SEM1003\_1

- Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., Chapleau, M.-A., Paquin, K., & Hofmann, S. G. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review, 33*(6), 763–771. <https://doi.org/10.1016/j.cpr.2013.05.005>
- Kieser, A. (2011) Between Rigour and relevance: Co-existing institutional logics in the field of management science. *Society and Economy, 33*(2), pp. 237–247. DOI: 10.2307/41472157
- Kim, N.-G., Turvey, M. T., & Carello, C. (1993). Optical information about the severity of upcoming contacts. *Journal of Experimental Psychology: Human Perception and Performance, 19*(1), 179–193. <https://doi.org/10.1037/0096-1523.19.1.179>
- King, L. A., & Raspin, C. (2004). Lost and found possible selves, subjective well-being, and ego development in divorced women. *Journal of Personality, 72*(3), 603-632. DOI: 10.1111/j.0022-3506.2004.00274.x
- King, L. A., Scollon, C. K., Ramsey, C., & Williams, T. (2000). Stories of life transition: Subjective well-being and ego development in parents of children with down syndrome. *Journal of Research in Personality, 34*(4), 509–536. <https://doi.org/10.1006/jrpe.2000.2285>
- Kirkman, B. L., & Chen, G. (2011). Maximizing your data or data slicing? Recommendations for managing multiple submissions from the same dataset. *Management and Organization Review, 7*(3), 433–446. <https://doi.org/10.1111/j.1740-8784.2011.00228.x>
- Kirshner, D., & Whitson, J. A. (Eds.). (1997). *Situated cognition: Social, semiotic, and psychological perspectives*. L. Erlbaum.
- Kirshner, D., & Whitson, J. A. (1998). Obstacles to understanding cognition as situated. *Educational Researcher, 27*(8), 22–28.

- Kitsantas, A, Kavussanu, M, Corbatto, D & van de Pol, P. (2018). Self-regulation in sports learning and performance. in D Schunk & J Green (eds), *Handbook of self-regulation of learning and performance*. 2nd edn, Routledge, pp. 194-207.
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (Fourth edition). The Guilford Press.
- Knight, C. J., Little, G. C. D., Harwood, C. G., & Goodger, K. (2016). Parental involvement in elite junior slalom canoeing. *Journal of Applied Sport Psychology*, 28(2), 234–256. <https://doi.org/10.1080/10413200.2015.1111273>
- Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, 15(2), 155–163. <https://doi.org/10.1016/j.jcm.2016.02.012>
- Kostamo, K., Jallinoja, P., Vesala, K. M., Araújo-Soares, V., Sniehotta, F. F., & Hankonen, N. (2019). Using the critical incident technique for qualitative process evaluation of interventions: The example of the “Let’s Move It” trial. *Social Science & Medicine*, 232, 389–397. <https://doi.org/10.1016/j.socscimed.2019.05.014>
- Koz, D., Fraser-Thomas, J., & Baker, J. (2012). Accuracy of professional sports drafts in predicting career potential. *Scandinavian Journal of Medicine & Science in Sports*, 22(4). <https://doi.org/10.1111/j.1600-0838.2011.01408.x>
- Krebs, C.J. (1999) *Ecological Methodology*. Addison-Wesley Educational Publishers, Inc., Menlo Park.
- Krebs, C. J. (2009). *Ecology: The Experimental Analysis of Distribution and Abundance* (6th ed.). San Francisco, CA: Benjamin Cummings.
- Krippendorff, K. (2004). *Content analysis: An introduction to its methodology* (2nd ed.). Thousand Oaks, CA: Sage.

- Kristiansen, E., Halvari, H., & Roberts, G. C. (2012). Organizational and media stress among professional football players: Testing an achievement goal theory model. *Scandinavian Journal of Medicine & Science in Sports*, 22(4), 569–579. <https://doi.org/10.1111/j.1600-0838.2010.01259.x>
- Krosnick, J. A., & Fabrigar, L. R. (1997). Designing rating scales for effective measurement in surveys. In L. Lyberg, P. Biemer, M. Collins, E. De Leeuw, C. Dippo, N. Schwarz, & D. Trewin (Eds.), *Wiley Series in Probability and Statistics* (1st ed., pp. 141–164). Wiley. <https://doi.org/10.1002/9781118490013.ch6>
- Kupiec, J.-J., & Sonigo, P. (2000). *Ni Dieu ni Gène : Pour Une Autre Théorie De L'hérédité*. Paris: Seuil, 229.
- Lance, C., Butts, M. & Michels, L. (2006) The sources of four commonly reported cutoff criteria. What did they really say. *Organizational Research Methods* 9, 202-220. <https://doi.org/10.1177/1094428105284919>
- Lakoff, G., & Johnson, M. (2003). *Metaphors we live by: With a new afterword*. University of Chicago Press.
- Larraza-Kintana, M., Wiseman, R. M., Gomez-Mejia, L. R., & Welbourne, T. M. (2007). Disentangling compensation and employment risks using the behavioral agency model. *Strategic Management Journal*, 28(10), 1001–1019. <https://doi.org/10.1002/smj.624>
- Laureys, F., Collins, D., Deconinck, F. J. A., & Lenoir, M. (2021). Exploring the use of the psychological characteristics of developing excellence (PCDE's) in younger age groups: First steps in the validation process of the pcde questionnaire for children (PCDEQ-C). *PLOS ONE*, 16(11), <https://doi.org/10.1371/journal.pone.0259396>
- Lave, J. (1988). *Cognition in practice: Mind, mathematics and culture in everyday life (1st ed.)*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511609268>

- LaVoi, N. M., & Dutove, J. K. (2012). Barriers and supports for female coaches: *An ecological model. Sports Coaching Review, 1*(1), 17–37.  
<https://doi.org/10.1080/21640629.2012.695891>
- Lei Chang. (1994). A psychometric evaluation of 4-point and 6-point Likert-type scales in relation to reliability and validity. *Applied Psychological Measurement, 18*(3), 205–215. <https://doi.org/10.1177/014662169401800302>
- Leplège, A., Ecosse, E., Verdier, A., & Perneger, T. V. (1998). The French sf-36 health survey. *Journal of Clinical Epidemiology, 51*(11), 1013–1023.  
[https://doi.org/10.1016/S0895-4356\(98\)00093-6](https://doi.org/10.1016/S0895-4356(98)00093-6)
- Li, C., Wang, C. K. J., & Pyun, D. Y. (2014). Talent development environmental factors in sport: A review and taxonomic classification. *Quest, 66*(4), 433–447.  
<https://doi.org/10.1080/00336297.2014.944715>
- Li, C., Wang, C. K. J., Pyun, D. Y., & Martindale, R. (2015). Further development of the talent development environment questionnaire for sport. *Journal of Sports Sciences, 33*(17), 1831–1843. <https://doi.org/10.1080/02640414.2015.1014828>
- Lilgendahl, J. P. & McAdams, D. P. (2011). Constructing stories of self-growth: How individual differences in patterns of autobiographical reasoning relate to well-being in midlife. *Journal of Personality, 79*, 391–428. <http://dx.doi.org/10.1111/j.1467-6494.2010.00688.x>
- Limstrand, T. (2008). Environmental characteristics relevant to young people's use of sports facilities: A review. *Scandinavian Journal of Medicine & Science in Sports, 18*(3), 275–287. <https://doi.org/10.1111/j.1600-0838.2007.00742.x>
- Lind, M. (2021). Icd-11 personality disorder: The indispensable turn to narrative identity. *Frontiers in Psychiatry, 12*, 642696.  
<https://doi.org/10.3389/fpsy.2021.642696>



- Lind, M., Vanwoerden, S., Penner, F., & Sharp, C. (2019). Inpatient adolescents with borderline personality disorder features: Identity diffusion and narrative incoherence. *Personality Disorders: Theory, Research, and Treatment, 10*(4), 389–393. <https://doi.org/10.1037/per0000338>
- Lind, M., Vanwoerden, S., Penner, F., & Sharp, C. (2020). Narrative coherence in adolescence: Relations with attachment, mentalization, and psychopathology. *Journal of Personality Assessment, 102*(3), 380–389. <https://doi.org/10.1080/00223891.2019.1574805>
- Linde, C. (1993). *Life stories: The creation of coherence*. New York, NY: Oxford University Press.
- Lindsay, E. K., & Creswell, J. D. (2017). Mechanisms of mindfulness training: Monitor and acceptance theory (Mat). *Clinical Psychology Review, 51*, 48–59. <https://doi.org/10.1016/j.cpr.2016.10.011>
- Ling, R. (2008a). Mobile telephones and the disturbance of the public sphere. *Europe, 115*, 1–17.
- Ling, R. (2012). *Taken for grantedness: The embedding of mobile communication into society*. Cambridge, MA: MIT Press
- Little, B. R. (2008). Personal projects and free traits: Personality and motivation reconsidered. *Social and Personality Psychology Compass, 2*(3), 1235–1254. <https://doi.org/10.1111/j.1751-9004.2008.00106.x>
- Lombard, M., Snyder-Duch, J., & Bracken, C. C. (2002). Content analysis in mass communication: Assessment and reporting of intercoder reliability. *Human Communication Research, 28*(4), 587–604. <https://doi.org/10.1111/j.1468-2958.2002.tb00826.x>

- Lundgren, T., Reinebo, G., Näslund, M., & Parling, T. (2020). Acceptance and commitment training to promote psychological flexibility in ice hockey performance: A controlled group feasibility study. *Journal of Clinical Sport Psychology, 14*(2), 170–181. <https://doi.org/10.1123/jcsp.2018-0081>
- MacCoon, D. G., Imel, Z. E., Rosenkranz, M. A., Sheftel, J. G., Weng, H. Y., Sullivan, J. C., Bonus, K. A., Stoney, C. M., Salomons, T. V., Davidson, R. J., & Lutz, A. (2012). The validation of an active control intervention for Mindfulness Based Stress Reduction. *Behaviour Research and Therapy, 50*(1), 3–12. <https://doi.org/10.1016/j.brat.2011.10.011>
- MacNamara, Á., Button, A., & Collins, D. (2010a). The role of psychological characteristics in facilitating the pathway to elite performance part 1: Identifying mental skills and behaviors. *The Sport Psychologist, 24*(1), 52–73. <https://doi.org/10.1123/tsp.24.1.52>
- MacNamara, Á., Button, A., & Collins, D. (2010b). The role of psychological characteristics in facilitating the pathway to elite performance part 2: Examining environmental and stage-related differences in skills and behaviors. *The Sport Psychologist, 24*(1), 74–96. <https://doi.org/10.1123/tsp.24.1.74>
- MacNamara, Á., & Collins, D. (2011). Development and initial validation of the psychological characteristics of developing excellence questionnaire. *Journal of Sports Sciences, 29*(12), 1273–1286. <https://doi.org/10.1080/02640414.2011.589468>
- MacNamara, A., & Collins, D. (2013). Do mental skills make champions? Examining the discriminant function of the psychological characteristics of developing excellence questionnaire. *Journal of Sports Sciences, 31*(7), 736–744. <https://doi.org/10.1080/02640414.2012.747692>

- Magidson, J., & Vermunt, J. K. (2004). Latent class models. In D. Kaplan (Ed.), *The Sage handbook of quantitative methodology for the social sciences* (pp. 175–198). Thousand Oaks, CA: Sage Publications.
- Magidson, J., & Vermunt, J. K. (2016). *Latent Gold [Computer software]*. Belmont, MA: Statistical Innovations.
- Malafouris, L. (2013). *How things shape the mind: A theory of material engagement*. The MIT Press. <https://doi.org/10.7551/mitpress/9476.001.0001>
- Marcoulides, K. M., & Yuan, K. H. (2017). New ways to evaluate goodness of fit: A note on using equivalence testing to assess structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*, 24, 148–153. doi: 10.1080/10705511.2015.1065414
- Marsh, H. W., Hau, K. T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal*, 11, 320–341. [https://doi.org/10.1207/s15328007sem1103\\_2](https://doi.org/10.1207/s15328007sem1103_2)
- Mark, L. S., Balliett, J. A., Craver, K. D., Douglas, S. D., & Fox, T. (1990). What an actor must do in order to perceive the affordance for sitting. *Ecological Psychology*, 2(4), 325–366. [https://doi.org/10.1207/s15326969eco0204\\_2](https://doi.org/10.1207/s15326969eco0204_2)
- Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling: A Multidisciplinary Journal*, 11(3), 320–341. [https://doi.org/10.1207/s15328007sem1103\\_2](https://doi.org/10.1207/s15328007sem1103_2)

- Martindale, R. J. J., Collins, D., & Abraham, A. (2007). Effective talent development: The elite coach perspective in UK sport. *Journal of Applied Sport Psychology, 19*(2), 187–206. <https://doi.org/10.1080/10413200701188944>
- Martindale, R. J., Collins, D., & Daubney, J. (2005). Talent development: A guide for practice and research within sport. *Quest, 57*(4), 353–375. <https://doi.org/10.1080/00336297.2005.10491862>
- Martindale, R. J. J., Collins, D., Douglas, C., & Whike, A. (2013). Examining the ecological validity of the talent development environment questionnaire. *Journal of Sports Sciences, 31*(1), 41–47. <https://doi.org/10.1080/02640414.2012.718443>
- Martindale, R., & Mortimer, P. (2011). Talent development environments. In *Performance Psychology* (pp. 65–84). Elsevier. <https://doi.org/10.1016/B978-0-443-06734-1.00005-5>
- Martindale, R. J. J., Collins, D., Wang, J. C. K., McNeill, M., Lee, K. S., Sproule, J., & Westbury, T. (2010). Development of the talent development environment questionnaire for sport. *Journal of Sports Sciences, 28*(11), 1209–1221. <https://doi.org/10.1080/02640414.2010.495993>
- Masters, R., & Maxwell, J. (2008). The theory of reinvestment. *International Review of Sport and Exercise Psychology, 1*(2), 160–183. <https://doi.org/10.1080/17509840802287218>
- Maturana, H. R., & Varela, F. J. (1980). *Autopoiesis and cognition: The realization of the living* (Vol. 42). Springer Netherlands. <https://doi.org/10.1007/978-94-009-8947-4>
- Mayer, J. D. (2005). A tale of two visions: Can a new view of personality help integrate psychology? *American Psychologist, 60*(4), 294–307. <https://doi.org/10.1037/0003-066X.60.4.294>

- Mayer, J. D., & Allen, J. L. (2013). A personality framework for the unification of psychology. *Review of General Psychology, 17*(2), 196–202. <https://doi.org/10.1037/a0032934>
- Maynard, I. W., Smith, M. J., & Warwick-Evans, L. (1995). The effects of a cognitive intervention strategy on competitive state anxiety and performance in semi-professional soccer players. *Journal of Sport and Exercise Psychology, 17*(4), 428–446. <https://doi.org/10.1123/jsep.17.4.428>
- Meijer, P. C., Verloop, N., & Beijaard, D. (2002). Multi-Method triangulation in a qualitative study on teachers' practical knowledge: an attempt to increase internal validity. *Quality and Quantity, 36*(2), 145–167. <https://doi.org/10.1023/A:1014984232147>
- McAdams, D. P. (1992). The five-factor model in personality: A critical appraisal. *Journal of Personality, 60*(2), 329–361. <https://doi.org/10.1111/j.1467-6494.1992.tb00976.x>
- McAdams, D. P. (1995). What do we know when we know a person? *Journal of Personality, 63*(3), 365–396. <https://doi.org/10.1111/j.1467-6494.1995.tb00500.x>
- McAdams, D. P. (1996). Personality, modernity, and the storied self: A contemporary framework for studying persons. *Psychological Inquiry, 7*(4), 295–321. [https://doi.org/10.1207/s15327965pli0704\\_1](https://doi.org/10.1207/s15327965pli0704_1)
- McAdams, D. P. (2006). The redemptive self: Generativity and the stories Americans live by. *Research in Human Development, 3*(2-3), 81-100. [10.1080/00336297.2005.10491862](https://doi.org/10.1080/00336297.2005.10491862)
- McAdams, D. P., & De St. Aubin, E. (1992). A theory of generativity and its assessment through self-report, behavioral acts, and narrative themes in autobiography. *Journal of Personality and Social Psychology, 62*(6), 1003–1015. <https://doi.org/10.1037/0022-3514.62.6.1003>
- McAdams, D. P., Josselson, R., & Lieblich, A. (Eds.). (2006). Identity and story: *Creating self in narrative*. American Psychological Association. <https://doi.org/10.1037/11414-000>

- McAdams, D. P., & Olson, B. D. (2010). Personality development: Continuity and change over the life course. *Annual Review of Psychology*, *61*(1), 517–542. <https://doi.org/10.1146/annurev.psych.093008.100507>
- McAdams, D. P., & Pals, J. L. (2006). A new Big Five: Fundamental principles for an integrative science of personality. *American Psychologist*, *61*(3), 204–217. <https://doi.org/10.1037/0003-066X.61.3.204>
- McCraty, R., Atkinson, M., Tiller, W. A., Rein, G., & Watkins, A. D. (1995). The effects of emotions on short-term power spectrum analysis of heart rate variability. *The American Journal of Cardiology*, *76*(14), 1089–1093. [https://doi.org/10.1016/S0002-9149\(99\)80309-9](https://doi.org/10.1016/S0002-9149(99)80309-9)
- McCraty, R., Atkinson, M., Tomasino, D., & Bradley, R. T. (2009b). The coherent heart heart-brain interactions, psychophysiological coherence, and the emergence of system-wide order. *Integral Review: A Transdisciplinary & Transcultural Journal for New Thought, Research, & Praxis*, *5*(2).
- McCraty, R., & Zayas, M. A. (2014). Cardiac coherence, self-regulation, autonomic stability, and psychosocial well-being. *Frontiers in Psychology*, *5*. <https://doi.org/10.3389/fpsyg.2014.01090>
- McCormick, A., Meijen, C., & Marcora, S. (2018). Effects of a motivational self-talk intervention for endurance athletes completing an ultramarathon. *The Sport Psychologist*, *32*(1), 42–50. <https://doi.org/10.1123/tsp.2017-0018>
- McCrae, R. R. (2000). Trait psychology and the revival of personality and culture studies. *American Behavioral Scientist*, *44*(1), 10–31. <https://doi.org/10.1177/00027640021956062>

- McCrae, R. R., & Costa, P. T. (1985). Updating Norman's 'adequacy taxonomy': Intelligence and personality dimensions in natural language and in questionnaires. *Journal of Personality and Social Psychology*, *49*(3), 710–721. <https://doi.org/10.1037/0022-3514.49.3.710>
- McCrae, R. R., & Costa, P. T. (1987). Validation of the five-factor model of personality across instruments and observers. *Journal of Personality and Social Psychology*, *52*(1), 81–90. <https://doi.org/10.1037/0022-3514.52.1.81>
- McCrae, R. R., & Costa, P. T. (2021). Understanding persons: From stern's personalistics to five-factor theory. *Personality and Individual Differences*, *169*, 109816. <https://doi.org/10.1016/j.paid.2020.109816>
- McGannon, K. R., & Smith, B. (2015). Centralizing culture in cultural sport psychology research: The potential of narrative inquiry and discursive psychology. *Psychology of Sport and Exercise*, *17*, 79–87. <https://doi.org/10.1016/j.psychsport.2014.07.010>
- McLean, K. C. (2005). Late adolescent identity development: Narrative meaning making and memory telling. *Developmental Psychology*, *41*(4), 683–691. <https://doi.org/10.1037/0012-1649.41.4.683>
- McLean, K. C., Pasupathi, M., & Pals, J. L. (2007). Selves creating stories creating selves: A process model of self-development. *Personality and Social Psychology Review*, *11*(3), 262–278. <https://doi.org/10.1177/1088868307301034>
- McLean, K. C., & Pratt, M. W. (2006). Life's little (And big) lessons: Identity statuses and meaning-making in the turning point narratives of emerging adults. *Developmental Psychology*, *42*(4), 714–722. <https://doi.org/10.1037/0012-1649.42.4.714>
- McLean, K. C., & Syed, M. (2015). The field of identity development needs an identity: An introduction to the Oxford handbook of identity development. In K. C. McLean & M.

- Syed (Eds.), *The Oxford handbook of identity development* (pp. 1–10). New York, NY: Oxford University Press.
- McLean, K. C., Syed, M., Pasupathi, M., Adler, J. M., Dunlop, W. L., Drustrup, D., Fivush, R., Graci, M. E., Lilgendahl, J. P., Lodi-Smith, J., McAdams, D. P., & McCoy, T. P. (2019). The empirical structure of narrative identity: The initial Big Three. *Journal of Personality and Social Psychology, 119*(4), 920–944. <https://doi.org/10.1037/pspp0000247>
- McLean, K. C., & Thorne, A. (2003). Late adolescents' self-defining memories about relationships. *Developmental Psychology, 39*(4), 635–645. <https://doi.org/10.1037/0012-1649.39.4.635>
- Mellalieu, S. D. (2017). Sport psychology consulting in professional rugby union in the United Kingdom. *Journal of Sport Psychology in Action, 8*(2), 109–120. <https://doi.org/10.1080/21520704.2017.1299061>
- Menary, R. (2010). Cognitive integration and the extended mind. In R. Menary (Ed.), *The Extended Mind* (pp. 226–243). The MIT Press. <https://doi.org/10.7551/mitpress/9780262014038.003.0010>
- Mills, A., Butt, J., Maynard, I., & Harwood, C. (2012). Identifying factors perceived to influence the development of elite youth football academy players. *Journal of Sports Sciences, 30*(15), 1593–1604. <https://doi.org/10.1080/02640414.2012.710753>
- Mills, A., Butt, J., Maynard, I., & Harwood, C. (2014). Toward an understanding of optimal development environments within elite English soccer academies. *The Sport Psychologist, 28*(2), 137–150. <https://doi.org/10.1123/tsp.2013-0018>
- Mingers, J. (1991). The cognitive theories of Maturana and Varela. *Systems Practice, 4*(4), 319–338. <https://doi.org/10.1007/BF01062008>



- Mirza, H. S. (2013). 'A second skin': Embodied intersectionality, transnationalism and narratives of identity and belonging among Muslim women in Britain. *Women's Studies International Forum*, 36, 5–15. <https://doi.org/10.1016/j.wsif.2012.10.012>
- Mohr, D. C., Spring, B., Freedland, K. E., Beckner, V., Areal, P., Hollon, S. D., Ockene, J., & Kaplan, R. (2009). The selection and design of control conditions for randomized controlled trials of psychological interventions. *Psychotherapy and Psychosomatics*, 78(5), 275–284. <https://doi.org/10.1159/000228248>
- Moore, Z. E. (2009). Theoretical and empirical developments of the mindfulness-acceptance-commitment (Mac) approach to performance enhancement. *Journal of Clinical Sport Psychology*, 3(4), 291–302. <https://doi.org/10.1123/jcsp.3.4.291>
- Moran, N. (2017). Agency in embodied music interaction. In M. Lesaffre, P.-J. Maes, & M. Leman (Eds.), *The Routledge Companion to Embodied Music Interaction* (1st ed., pp. 105–112). Routledge. <https://doi.org/10.4324/9781315621364-12>
- Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48–76. <https://doi.org/10.1177/2345678906292462>
- Morgan, D. L., & Krueger, R. A. (1998). *Analyzing and reporting focus group results*. SAGE.
- Morris, T. (2000). Psychological characteristics and talent identification in soccer. *Journal of Sports Sciences*, 18(9), 715–726. <https://doi.org/10.1080/02640410050120096>
- Morris, R. (2013). *Investigating the youth to senior transition in sport: From theory to practice*. United Kingdom: Aberystwyth University.
- Morris, R., Tod, D., & Oliver, E. (2015). An analysis of organizational structure and transition outcomes in the youth-to-senior professional soccer transition. *Journal of Applied Sport Psychology*, 27(2), 216–234. <https://doi.org/10.1080/10413200.2014.980015>

- Mottet, M., & Saury, J. (2013). Accurately locating one's spatial position in one's environment during a navigation task: Adaptive activity for finding or setting control flags in orienteering. *Psychology of Sport and Exercise, 14*(2), 189–199. <https://doi.org/10.1016/j.psychsport.2012.09.002>
- Murphy, S. M., & Woolfolk, R. L. (1987). The effects of cognitive interventions on competitive anxiety and performance on a fine motor skill accuracy task. *International Journal of Sport Psychology, 18*(2), 152–166.
- Nash, J. C., & Varadhan, R. (2011). Unifying Optimization Algorithms to Aid Software System Users: optimx for R. *Journal of Statistical Software, 43*(9), 1–14. <https://doi.org/10.18637/jss.v043.i09>
- Nicholls, A. R., Taylor, N. J., Carroll, S., & Perry, J. L. (2016). The development of a new sport-specific classification of coping and a meta-analysis of the relationship between different coping strategies and moderators on sporting outcomes. *Frontiers in Psychology, 7*. <https://doi.org/10.3389/fpsyg.2016.01674>
- Nideffer, R. M., & Sagal, M.-S. C. (2001). *Assessment in sport psychology*. Fitness Information Technology.
- Noetel, M., Ciarrochi, J., Van Zanden, B., & Lonsdale, C. (2019). Mindfulness and acceptance approaches to sporting performance enhancement: A systematic review. *International Review of Sport and Exercise Psychology, 12*(1), 139–175. <https://doi.org/10.1080/1750984X.2017.1387803>
- Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A monte carlo simulation study. *Structural Equation Modeling: A Multidisciplinary Journal, 14*(4), 535–569. <https://doi.org/10.1080/10705510701575396>

- Nunomura, M., & Oliviera, M.S. (2013). Parents' support in the sports career of young gymnasts. *Science of Gymnastics Journal*, 5(1): 5-17.
- Olmedilla, A., & Dominguez-Igual, J. J. (2016). Entrenamiento psicológico para la mejora de la atención y la autoconfianza en un futbolista. *Revista de Psicología Aplicada al Deporte y El Ejercicio Físico*, 1(1), 1–10. <https://doi.org/10.5093/rpadef2016a4>
- Olsson, K. L., & Pehrson, S. (2014). Exploratory study-Outlining the temporal structure of the transition from junior-to-senior level in Swedish ice hockey: Phases in the junior-to-senior transition. Unpublished manuscript Halmstad, Sweden: *School of Social and Health Sciences*, Halmstad University. Retrieved from <http://www.divaportal.org/smash/record.jsf?pid=diva2%3A716101&dswid=8272>
- Jenny, O., & Hall, C. (2009). A quantitative analysis of athletes' voluntary use of slow motion, real time, and fast motion images. *Journal of Applied Sport Psychology*, 21(1), 15–30. <https://doi.org/10.1080/10413200802541892>
- Orlick, T. (1992). The psychology of personal excellence. *Contemporary thought on performance enhancement*, 1(1), 109-22.
- Overton, W. F. (2008). Embodiment from a relational perspective. In W. F. Overton, U. Müller, & J. L. Newman (Eds.), *Developmental perspectives on embodiment and consciousness* (pp. 1–18). Taylor & Francis Group/Lawrence Erlbaum Associates.
- Owiti, S., Bersier, T., & Hauw, D. (2021). Individual differences in professional sport narrative experience during basketball players club mutation. *Heliyon*, 7(9), e08015. <https://doi.org/10.1016/j.heliyon.2021.e08015>
- Owiti, S., & Hauw, D. (2021). The problematic experience of players' mutations between clubs: Discovering the social adaptability skills required. *Frontiers in Sports and Active Living*, 3, 591438. <https://doi.org/10.3389/fspor.2021.591438>

- Owiti, S., & Hauw, D. (2023). The initial development and validation of the social adaptability skills questionnaire: Sasq. *PLOS ONE*, *18*(8), e0281971. <https://doi.org/10.1371/journal.pone.0281971>
- Owiti, S., Hauw, D., & Collins, D. (2020). Applying a multilayer construct of social adaptability skills within talent development. *Frontiers in Psychology*, *10*, 3006. <https://doi.org/10.3389/fpsyg.2019.03006>
- Peugh, J., & Feldon, D. F. (2020). How well does your structural equation model fit your data? Is Marcoulides and Yuan's equivalence test the answer? *CBE—Life Sciences Education*, *19*(3), es5. <https://doi.org/10.1187/cbe.20-01-0016>
- Pals, J. L. (2006). Narrative identity processing of difficult life experiences: Pathways of personality development and positive self-transformation in adulthood. *Journal of Personality*, *74*(4), 1079–1110. <https://doi.org/10.1111/j.1467-6494.2006.00403.x>
- Pals, J. L., & McAdams, D. P. (2004). The transformed self: A narrative understanding of posttraumatic growth. *Psychological Inquiry*, *65*-69.
- Park, S., Tod, D., & Lavallee, D. (2012). Exploring the retirement from sport decision-making process based on the transtheoretical model. *Psychology of Sport and Exercise*, *13*(4), 444–453. <https://doi.org/10.1016/j.psychsport.2012.02.003>
- Partridge JA. (2011). Current directions in social influence parents and peers. *Revista De Iberoamericana de Psicología del Ejercicio Y el Deporte*, *6*:251-268.
- Passos, P., Araújo, D., & Davids, K. (2013). Self-organization processes in field-invasion team sports: Implications for leadership. *Sports Medicine*, *43*(1), 1–7. <https://doi.org/10.1007/s40279-012-0001-1>
- Passos, P., Araújo, D., & Davids, K. (2016). Competitiveness and the process of co-adaptation in team sport performance. *Frontiers in Psychology*, *7*. <https://doi.org/10.3389/fpsyg.2016.01562>

- Passos, P., Araújo, D., Davids, K., Gouveia, L., Serpa, S., Milho, J., & Fonseca, S. (2009). Interpersonal pattern dynamics and adaptive behavior in multiagent neurobiological systems: Conceptual model and data. *Journal of Motor Behavior, 41*(5), 445–459. <https://doi.org/10.3200/35-08-061>
- Passos, P. J., & Davids, K. (2015). Learning design to facilitate interactive behaviours in Team Sports. [Diseños de aprendizaje para favorecer las interacciones en los deportes de equipo]. RICYDE. *Revista Internacional de Ciencias Del Deporte, 11*(39), 18–32. <https://doi.org/10.5232/ricyde2015.03902>
- Paterson, T. A., Harms, P. D., & Tuggle, C. S. (2018). Revisiting the rigor–relevance relationship: An institutional logics perspective. *Human Resource Management, 57*(6), 1371–1383. <https://doi.org/10.1002/hrm.21911>
- Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis: The use of factor analysis for instrument development in health care research*. SAGE Pub.
- Peugh, J., & Feldon, D. F. (2020). “How well does your structural equation model fit your data?”: Is marcoulides and yuan’s equivalence test the answer? *CBE—Life Sciences Education, 19*(3), es5. <https://doi.org/10.1187/cbe.20-01-0016>
- Plucker, J. A., & Stocking, V. B. (2001). Looking outside and inside: Self-concept development of gifted adolescents. *Exceptional Children, 67*(4), 535–548. <https://doi.org/10.1177/001440290106700407>
- Poczwardowski, A., Diehl, B., O’Neil, A., Cote, T., & Haberl, P. (2014). Successful transitions to the Olympic training center, Colorado Springs: A mixed-method exploration with six resident-athletes. *Journal of Applied Sport Psychology, 26*(1), 33–51. <https://doi.org/10.1080/10413200.2013.773950>

- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (Eds.). (2018). *The Oxford handbook of organizational citizenship behavior*. Oxford University Press
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63(1), 539–569. <https://doi.org/10.1146/annurev-psych-120710-100452>
- Poizat G., Bourbousson J., Saury J., & Sève C. (2009), « Analysis of Contextual Information Sharing During Table Tennis Matches: An Empirical Study on Coordination in Sports», *International Journal of Sport and Exercise Psychology*, 7, 465-487. DOI: 10.1080/1612197X.2009.9671920
- Popova, Y. B. (2014). Narrativity and enaction: The social nature of literary narrative understanding. *Frontiers in Psychology*, 5. <https://doi.org/10.3389/fpsyg.2014.00895>
- Potter, W. J., & Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. *Journal of Applied Communication Research*, 27(3), 258–284. <https://doi.org/10.1080/00909889909365539>
- Prins, B. (2006). Narrative accounts of origins: A blind spot in the intersectional approach? *European Journal of Women's Studies*, 13(3), 277–290. <https://doi.org/10.1177/1350506806065757>
- Pufall, P. B., & Dunbar, C. (1992). Perceiving whether or not the world affords stepping onto and over: A developmental study. *Ecological Psychology*, 4(1), 17–38. <https://doi.org/10.1080/10407413.1992.10530791>
- Pulakos, E. D., Arad, S., Donovan, M. A., & Plamondon, K. E. (2000). Adaptability in the workplace: Development of a taxonomy of adaptive performance. *Journal of Applied Psychology*, 85(4), 612–624. <https://doi.org/10.1037/0021-9010.85.4.612>

- Pummell, E. K. L., & Lavalley, D. (2019). Preparing UK tennis academy players for the junior-to-senior transition: Development, implementation, and evaluation of an intervention program. *Psychology of Sport and Exercise, 40*, 156–164. <https://doi.org/10.1016/j.psychsport.2018.07.007>
- Pyett, P. M. (2003). Validation of qualitative research in the “real world”. *Qualitative Health Research, 13*(8), 1170–1179. <https://doi.org/10.1177/1049732303255686>
- Pynn, S. R., Dunn, J. G. H., & Holt, N. L. (2019). A qualitative study of exemplary parenting in competitive female youth team sport. *Sport, Exercise, and Performance Psychology, 8*(2), 163–178. <https://doi.org/10.1037/spy0000141>
- Raubenheimer, J. (2004). An item selection procedure to maximise scale reliability and validity. *SA Journal of Industrial Psychology, 30*(4). <https://doi.org/10.4102/sajip.v30i4.168>
- Raykov, T. (1997). Estimation of composite reliability for congeneric measures. *Applied Psychological Measurement, 21*(2), 173–184. <https://doi.org/10.1177/01466216970212006>
- Reed, E.S. (1993). The intention to use a specific affordance: a conceptual framework for psychology. In R.H. Wosniak and K.W. Fischer (eds.). *Development in context. Acting and thinking in specific environments* (pp. 45-76). Hillsdale, NJ: LEA.
- Rees, T., Hardy, L., Güllich, A., Abernethy, B., Côté, J., Woodman, T., Montgomery, H., Laing, S., & Warr, C. (2016). The great British medalist’s project: A review of current knowledge on the development of the world’s best sporting talent. *Sports Medicine, 46*(8), 1041–1058. <https://doi.org/10.1007/s40279-016-0476-2>
- Reilly, T., Williams, A. M., Nevill, A., & Franks, A. (2000). A multidisciplinary approach to talent identification in soccer. *Journal of Sports Sciences, 18*(9), 695–702. <https://doi.org/10.1080/02640410050120078>

- Reints, A. (2011). Validation of the holistic athletic career model and the identification of variables related to athletic retirement. Published doctoral dissertation. Brussels: *VUB Press*. (17) (PDF) A Cross-Cultural Comparison of the Transition out of Elite Sport - An investigation across the Swiss, Danish, and Polish elite sports contexts. Available from: [https://www.researchgate.net/publication/317358048\\_A\\_CrossCultural\\_Comparison\\_of\\_the\\_Transition\\_out\\_of\\_Elite\\_Sport\\_\\_An\\_investigation\\_across\\_the\\_Swiss\\_Danish\\_and\\_Polish\\_elite\\_sports\\_contexts](https://www.researchgate.net/publication/317358048_A_CrossCultural_Comparison_of_the_Transition_out_of_Elite_Sport__An_investigation_across_the_Swiss_Danish_and_Polish_elite_sports_contexts) [accessed Aug 26 2023].
- Resnik, D. B. (2018). *The ethics of research with human subjects: Protecting people, advancing science, promoting trust* (Vol. 74). Springer International Publishing. <https://doi.org/10.1007/978-3-319-68756-8>
- Rhind, D. J. A., Jowett, S., & Yang, S.X. (2012). A comparison of athletes' perceptions of the coach-athlete relationship in team and individual sports. *Journal of Sport Behavior*, 35(4), 433–452.
- Rietveld, E., & Kiverstein, J. (2014). A rich landscape of affordances. *Ecological Psychology*, 26(4), 325–352. <https://doi.org/10.1080/10407413.2014.958035>
- R'Kiouak, M., Saury, J., Durand, M., & Bourbousson, J. (2016). Joint action of a pair of rowers in a race: Shared experiences of effectiveness are shaped by interpersonal mechanical states. *Frontiers in Psychology*, 7. <https://www.frontiersin.org/articles/10.3389/fpsyg.2016.00720>
- Robbins, P., & Aydede, M. (Eds.). (2009). *The Cambridge handbook of situated cognition*. Cambridge University Press.
- Rochat, N., Gesbert, V., Seifert, L., & Hauw, D. (2018). Enacting phenomenological gestalts in ultra-trail running: An inductive analysis of trail runners' courses of experience. *Frontiers in Psychology*, 9, 2038. <https://doi.org/10.3389/fpsyg.2018.02038>



- Rochat, N., Hauw, D., Antonini Philippe, R., Crettaz Von Roten, F., & Seifert, L. (2017). Comparison of vitality states of finishers and withdrawers in trail running: An enactive and phenomenological perspective. *PLOS ONE*, *12*(3), e0173667. <https://doi.org/10.1371/journal.pone.0173667>
- Rochat, N., Seifert, L., Guignard, B., & Hauw, D. (2019). An enactive approach to appropriation in the instrumented activity of trail running. *Cognitive Processing*, *20*(4), 459–477. <https://doi.org/10.1007/s10339-019-00921-2>
- Rodrigues, F., Hair, J. F., Neiva, H. P., Teixeira, D. S., Cid, L., & Monteiro, D. (2019). The basic psychological need satisfaction and frustration scale in exercise (Bpnsfs-e): Validity, reliability, and gender invariance in Portuguese exercisers. *Perceptual and Motor Skills*, *126*(5), 949–972. <https://doi.org/10.1177/0031512519863188>
- Roemer, L., & Orsillo, S. M. (2002). Expanding our conceptualization of and treatment for generalized anxiety disorder: Integrating mindfulness/acceptance-based approaches with existing cognitive-behavioral models. *Clinical Psychology: Science and Practice*, *9*(1), 54–68. <https://doi.org/10.1093/clipsy.9.1.54>
- Roemer, L., Williston, S. K., & Rollins, L. G. (2015). Mindfulness and emotion regulation. *Current Opinion in Psychology*, *3*, 52–57. <https://doi.org/10.1016/j.copsyc.2015.02.006>
- Rowlands, M. J. (2010). *The new science of the mind: From extended mind to embodied phenomenology*. Cambridge, Mass: MIT Press.
- Ryba, T. V., Stambulova, N. B., & Ronkainen, N. J. (2016). The work of cultural transition: An emerging model. *Frontiers in Psychology*, *7*. <https://doi.org/10.3389/fpsyg.2016.00427>
- Sale, J. E. M., Lohfeld, L. H., & Brazil, K. (2002). Revisiting the quantitative-qualitative debate: implications for mixed methods research. *Quality and Quantity*, *36*(1), 43–53. <https://doi.org/10.1023/A:1014301607592>

- Sandelowski, M (2000) Combining qualitative and quantitative sampling, data collection and analysis techniques in mixed method studies research. *Nursing Health* 23, 246–255. [https://doi.org/10.1002/1098-240x\(200006\)23:33.3.CO;2-8](https://doi.org/10.1002/1098-240x(200006)23:33.3.CO;2-8)
- Sannino, A., & Sutter, B. (2011). Cultural-historical activity theory and interventionist methodology: Classical legacy and contemporary developments. *Theory & Psychology*, 21(5), 557–570. <https://doi.org/10.1177/0959354311414969>
- Sarmiento, H., Anguera, M. T., Pereira, A., & Araújo, D. (2018). Talent identification and development in male football: A systematic review. *Sports Medicine*, 48(4), 907–931. <https://doi.org/10.1007/s40279-017-0851-7>
- Savalei, V. (2011). *On asymptotic robustness of NT methods with missing data* (UCLA Department of Statistics papers). Retrieved January 03, 2024, from <https://escholarship.org/uc/item/7zt626nh>
- Savickas, M. L. (2005). The Theory and Practice of Career Construction. In S. D. Brown & R. W. Lent (Eds.), *Career development and counselling: Putting theory and research to work* (pp. 42–70). John Wiley & Sons, Inc
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to preventing relapse*. Guilford Press.
- Scanlan, T. K., Stein, G. L., & Ravizza, K. (1989). An in-depth study of former elite figure skaters: In. Sources of enjoyment. *Journal of Sport and Exercise Psychology*, 11(1), 65–83. <https://doi.org/10.1123/jsep.11.1.65>
- Schafer, J. L. (1999). Multiple imputation: A primer. *Statistical Methods in Medical Research*, 8(1), 3–15. <https://doi.org/10.1177/096228029900800102>
- Sharma, S., Mukherjee, S., Kumar, A. & Dillon, W. (2005). A simulation study to investigate the use of cutoff values for assessing model fit in covariance structure models. *Journal of Business Research* 58, 935-943. DOI: 10.1016/j.jbusres.2003.10.007

- Schiavio, A., & Van Der Schyff, D. (2018). 4e music pedagogy and the principles of self-organization. *Behavioral Sciences*, 8(8), 72. <https://doi.org/10.3390/bs8080072>
- Schinke, R. J., Blodgett, A. T., Ryba, T. V., Kao, S. F., & Middleton, T. R. F. (2019). Cultural sport psychology as a pathway to advances in identity and settlement research to practice. *Psychology of Sport and Exercise*, 42, 58–65. <https://doi.org/10.1016/j.psychsport.2018.09.004>
- Schlossberg, N. K. (1984). Exploring the adult years. In A. M. Rogers & C. J. Scheirer (Eds.), *The G. Stanley Hall lecture series, Vol. 4.* (pp. 105–154). American Psychological Association. <https://doi.org/10.1037/10089-003>
- Schlossberg, N. K. (2005). *Counseling adults in transition*. Springer Publishing Company.
- Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. Basic Books.
- Seifert, L., Wattedled, L., Herault, R., Poizat, G., Adé, D., Gal-Petitfaux, N., & Davids, K. (2014). Neurobiological degeneracy and affordance perception support functional intra-individual variability of inter-limb coordination during ice climbing. *PLoS ONE*, 9(2), e89865. <https://doi.org/10.1371/journal.pone.0089865>
- Shaffer, J. P. (1995). Multiple hypothesis testing. *Annual Review of Psychology*, 46(1), 561–584. <https://doi.org/10.1146/annurev.ps.46.020195.003021>
- Shallcross, S. L. (2013). *Social support mediates the relation between attachment and responses to potentially traumatic events*. Unpublished doctoral dissertation, University of Minnesota, Minneapolis, USA. Retrieved from <http://purl.umn.edu/159917>
- Shrout, P. E., & Fleiss, J. L. (1979). Intraclass correlations: Uses in assessing rater reliability. *Psychological Bulletin*, 86, 420–428

- Siegle, D., McCoach, D. B., & Roberts, A. (2017). Why I believe I achieve determines whether I achieve. *High Ability Studies, 28*(1), 59–72.  
<https://doi.org/10.1080/13598139.2017.1302873>
- Siembida, E. J., Moss, K., Kadan-Lottick, N., & Bellizzi, K. M. (2018). The patient–provider relationship in adolescent oncology: An exploratory factor analysis of a thirteen-item self-report measure. *Journal of Adolescent Health, 63*(4), 509–512.  
<https://doi.org/10.1016/j.jadohealth.2018.04.016>
- Simonsmeier, B. A., & Buecker, S. (2017). Interrelations of imagery use, imagery ability, and performance in young athletes. *Journal of Applied Sport Psychology, 29*(1), 32–43.  
<https://doi.org/10.1080/10413200.2016.1187686>
- Singer, J. A., Blagov, P., Berry, M., & Oost, K. M. (2013). Self-defining memories, scripts, and the life story: Narrative identity in personality and psychotherapy. *Journal of Personality, 81*(6), 569–582. <https://doi.org/10.1111/jopy.12005>
- Singer, J., & Salovey, P. (1993). *The remembered self*. New York: Free Press.
- Smith, B. (2010). Narrative inquiry: Ongoing conversations and questions for sport and exercise psychology research. *International Review of Sport and Exercise Psychology, 3*(1), 87–107. <https://doi.org/10.1080/17509840903390937>
- Smith, R. E., Schutz, R. W., Smoll, F. L., & Ptacek, J. T. (1995). Development and validation of a multidimensional measure of sport-specific psychological skills: The athletic coping skills inventory-28. *Journal of Sport and Exercise Psychology, 17*(4), 379–398.  
<https://doi.org/10.1123/jsep.17.4.379>
- Smith, B., & McGannon, K. R. (2018). Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. *International Review of Sport and Exercise Psychology, 11*(1), 101–121.  
<https://doi.org/10.1080/1750984X.2017.1317357>

- Smith, R. E., & Smoll, F. L. (2007). Social-Cognitive Approach to Coaching Behaviors. In S. Jowette & D. Lavallee (Eds.), *Social Psychology in Sport* (pp. 75–90). Human Kinetics. <https://doi.org/10.5040/9781492595878.ch-006>
- Soto, C. J. (2021). Do links between personality and life outcomes generalize? Testing the robustness of trait–outcome associations across gender, age, ethnicity, and analytic approaches. *Social Psychological and Personality Science*, *12*(1), 118–130. <https://doi.org/10.1177/1948550619900572>
- Sparkes, A. C. (1999). Exploring body narratives. *Sport, Education and Society*, *4*(1), 17–30. <https://doi.org/10.1080/1357332990040102>
- Sparkes, A. C., & Smith, B. (1999). Disrupted selves and narrative reconstructions. *Talking bodies: Men's narratives of the body and sport*, 76-92.
- Stambulova, N., Alfermann, D., Statler, T., & Côté, J. (2009). ISSP Position stand: Career development and transitions of athletes. *International Journal of Sport and Exercise Psychology*, *7*(4), 395–412. <https://doi.org/10.1080/1612197X.2009.9671916>
- Stambulova, N. B. (2017). Crisis-transitions in athletes: Current emphases on cognitive and contextual factors. *Current Opinion in Psychology*, *16*, 62–66. <https://doi.org/10.1016/j.copsyc.2017.04.013>
- Stambulova, N. B., Pehrson, S., & Olsson, K. (2017). Phases in the junior-to-senior transition of Swedish ice hockey players: From a conceptual framework to an empirical model. *International Journal of Sports Science & Coaching*, *12*(2), 231–244. <https://doi.org/10.1177/1747954117694928>
- Stambulova, N. B., & Ryba, T. V. (2014). A critical review of career research and assistance through the cultural lens: Towards cultural praxis of athletes' careers. *International Review of Sport and Exercise Psychology*, *7*(1), 1–17. <https://doi.org/10.1080/1750984X.2013.851727>

- Stambulova, N., Franck, A., & Weibull, F. (2012). Assessment of the transition from junior-to-senior sports in Swedish athletes. *International Journal of Sport and Exercise Psychology, 10*(2), 79–95. <https://doi.org/10.1080/1612197X.2012.645136>
- Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology, 78*(6), 1150–1169. <https://doi.org/10.1037/0022-3514.78.6.1150>
- Stanton, A. L., & Low, C. A. (2012). Dispositional and stressor-related emotion regulation in the context of a chronic, life-limiting stressor. *Journal of Personality, 80*(2), 287–311. <https://doi.org/10.1111/j.1467-6494.2011.00732.x>
- Stockfelt, S. (2018). We the minority-of-minorities: A narrative inquiry of black female academics in the United Kingdom. *British Journal of Sociology of Education, 39*(7), 1012–1029. <https://doi.org/10.1080/01425692.2018.1454297>
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques*. Thousand Oaks, CA: Sage publications.
- Suresh, K., & Chandrashekar, S. (2012). Sample size estimation and power analysis for clinical research studies. *Journal of Human Reproductive Sciences, 5*(1), 7. <https://doi.org/10.4103/0974-1208.97779>
- Syed, M., & Azmitia, M. (2010). Narrative and ethnic identity exploration: A longitudinal account of emerging adults' ethnicity-related experiences. *Developmental Psychology, 46*, 208-219. <http://dx.doi.org/101037/a0017825>
- Syed, M., & Nelson, S. C. (2015). Guidelines for establishing reliability when coding narrative data. *Emerging Adulthood, 3*(6), 375–387. <https://doi.org/10.1177/2167696815587648>
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2019). *Using multivariate statistics (Seventh edition)*. Pearson.

- Taherdoost, H. (2019). What is the best response scale for survey and questionnaire design; review of different lengths of rating scale/attitude scale/Likert scale. *Hamed Taherdoost*, 1-10.
- Tashakkori, A., & Creswell, J. W. (2007). Editorial: The new era of mixed methods. *Journal of Mixed Methods Research*, 1(1), 3–7. <https://doi.org/10.1177/2345678906293042>
- Theureau, J. (2003) Course-of-action analysis and course-of-action centered design. In E. Hollnagel (Ed.), *Handbook of cognitive task design* (pp. 55-81). Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Theureau, J. (2010). Les entretiens d’auto confrontation et de remise en situation par les traces matérielles et le programme de recherche « cours d’action ». *Revue d’anthropologie des Connaissances*, 4(1). <https://doi.org/10.3917/rac.010.0287>
- Tharenou, P., & Kulik, C. T. (2020). Skilled migrants employed in developed, mature economies: From newcomers to organizational insiders. *Journal of Management*, 46(6), 1156–1181. <https://doi.org/10.1177/0149206320921229>
- Thibaut, J. W., & Kelley, H. H. (2007). *The social psychology of groups (4th ed.)*. New York, NY: Wiley.
- Thompson, E. (2007). *Mind in Life: Biology, Phenomenology, and the Sciences of Mind*. Harvard University Press: Cambridge, MA, USA.
- Thorson, E., Wicks, R., & Leshner, G. (2012). Experimental methodology in journalism and mass communication research. *Journalism & Mass Communication Quarterly*, 89(1), 112–124. <https://doi.org/10.1177/1077699011430066>
- Till, K., & Baker, J. (2020). Challenges and [possible] solutions to optimizing talent identification and development in sport. *Frontiers in Psychology*, 11, 664. <https://doi.org/10.3389/fpsyg.2020.00664>

- Tiller, W. A., McCraty, R., & Atkinson, M. (1996). Cardiac coherence: A new, non-invasive measure of autonomic nervous system order. *Alternative Therapies in Health and Medicine*, 2(1), 52–65.
- Toering, T., & Jordet, G. (2015). Self-control in professional soccer players. *Journal of Applied Sport Psychology*, 27(3), 335–350. <https://doi.org/10.1080/10413200.2015.1010047>
- Tomkins, S. S. (1987). Script theory. In J. Aronoff, A. I. Rabin, & R. A. Zucker (Eds). *The Emergence of Personality* (pp. 147-216). New York: Springer
- Tonyan, H. A., Mamikonian-Zarpas, A., & Chien, D. (2013). Do they practice what they preach? An ecocultural, multidimensional, group-based examination of the relationship between beliefs and behaviours among child care providers. *Early Child Development and Care*, 183(12), 1853–1877. <https://doi.org/10.1080/03004430.2012.759949>
- Vaeyens, R., Lenoir, M., Williams, A. M., & Philippaerts, R. M. (2008). Talent identification and development programmes in sport: Current models and future directions. *Sports Medicine*, 38(9), 703–714. <https://doi.org/10.2165/00007256-200838090-00001>
- Vanden Abeele, M., De Wolf, R., & Ling, R. (2018). Mobile media and social space: How anytime, anyplace connectivity structures everyday life. *Media and Communication*, 6(2), 5–14. <https://doi.org/10.17645/mac.v6i2.1399>
- Vanderveren, E., Bogaerts, A., Claes, L., Luyckx, K., & Hermans, D. (2021). Narrative coherence of turning point memories: Associations with psychological well-being, identity functioning, and personality disorder symptoms. *Frontiers in Psychology*, 12, Article 623903. <https://doi.org/10.3389/fpsyg.2021.623903>
- Vanwoerden, S., Greiner, I., Ensink, K., & Sharp, C. (2019). The relations between self- and caregiver- focused reflective function and theory of mind in the context of borderline pathology in adolescence. *Psychiatry Research*, 273, 274–280. <https://doi.org/10.1016/j.psychres.2019.01.042>



- Varela, F. J. (1997). Patterns of life: Intertwining identity and cognition. *Brain and Cognition*, 34(1), 72–87. <https://doi.org/10.1006/brcg.1997.0907>
- Varela F.-J., Shear J, 1999, First-person Methodologies: What, Why and How? in *The View From Within. First-person approaches to the study of consciousness*, s/d Varela F., Shear J., Thoverton, UK: Imprint Academic, p. 1 – 14.
- Vallerand, R. J. (1989). Vers une méthodologie de validation trans-culturelle de questionnaires psychologiques : Implications pour la recherche en langue française. *Canadian Psychology / Psychologie Canadienne*, 30(4), 662–680. <https://doi.org/10.1037/h0079856>
- Valsiner, J. (1997). *Culture and the development of children's actions: A theory of human development* (2nd.ed). Chichester: John Wiley & Sons.
- Valsiner, J. (2001). Process structure of semiotic mediation in human development. *Human Development*, 44(2–3), 84–97. <https://doi.org/10.1159/000057048>
- Van Der Schyff, D., Schiavio, A., & Elliott, D. J. (2016). Critical ontology for an enactive music pedagogy. *Action, Criticism, and Theory for Music Education*, 15(5), 81–121. <https://doi.org/10.22176/act15.5.81>
- Van Emmerik, R. E. A., & Van Wegen, E. E. H. (2000). On variability and stability in human movement. *Journal of Applied Biomechanics*, 16(4), 394–406. <https://doi.org/10.1123/jab.16.4.394>
- Van Yperen, N. W. (2009). Why some make it and others do not: Identifying psychological factors that predict career success in professional adult soccer. *The Sport Psychologist*, 23(3), 317–329. <https://doi.org/10.1123/tsp.23.3.317>
- Vealey, R. S. (1988). Future directions in psychological skills training. *The Sport Psychologist*, 2(4), 318–336. <https://doi.org/10.1123/tsp.2.4.318>

- Vermeulen, I., & Hartmann, T. (2015). Questionable research and publication practices in communication science. *Communication Methods and Measures*, 9(4), 189–192. <https://doi.org/10.1080/19312458.2015.1096331>
- Vermunt, J. K., & Magidson, J. (2005). *Technical guide for Latent GOLD Choice 4.0: Basic and advanced*. Belmont, MA: Statistical Innovations Inc.
- Vlastos, G. (1994). *Socratic studies*. Cambridge University Press.
- Villemain, A., & Hauw, D. (2014). A situated analysis of football goalkeepers' experiences in critical game situations. *Perceptual and Motor Skills*, 119(3), 811–824. <https://doi.org/10.2466/25.30.PMS.119c30z0>
- Vrieze, S. I. (2012). Model selection and psychological theory: A discussion of the differences between the Akaike information criterion (Aic) and the Bayesian information criterion (Bic). *Psychological Methods*, 17(2), 228–243. <https://doi.org/10.1037/a0027127>
- Vygotsky, L. S. (1978). *Thought and Language*. Cambridge: MIT Press.
- Vygotsky, L. S. (2004). Imagination and creativity in childhood. *Journal of Russian & East European Psychology*, 42(1), 7–97. <https://doi.org/10.1080/10610405.2004.11059210>
- Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology*, 82(2), 247–252. <https://doi.org/10.1037/0021-9010.82.2.247>
- Warren, W. H. (2006). The dynamics of perception and action. *Psychological Review*, 113(2), 358–389. <https://doi.org/10.1037/0033-295X.113.2.358>
- Webb, V., Collins, D., & Cruickshank, A. (2016). Aligning the talent pathway: Exploring the role and mechanisms of coherence in development. *Journal of Sports Sciences*, 34(19), 1799–1807. <https://doi.org/10.1080/02640414.2016.1139162>

- Weber, A., & Varela, F. J. (2002). Life after Kant: Natural purposes and the autopoietic foundations of biological individuality. *Phenomenology and the cognitive sciences*, 1(2), 97-125. DOI:10.1023/A:1020368120174
- Weed, M. (2009). Research quality considerations for grounded theory research in sport & exercise psychology. *Psychology of Sport and Exercise*, 10(5), 502–510. <https://doi.org/10.1016/j.psychsport.2009.02.007>
- Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review*, 101(1), 34–52. <https://doi.org/10.1037/0033-295X.101.1.34>
- Weinberg, R. S., Seabourne, T. G., & Jackson, A. (1981). Effects of visuo-motor behavior rehearsal, relaxation, and imagery on karate performance. *Journal of Sport Psychology*, 3(3), 228–238. <https://doi.org/10.1123/jsp.3.3.228>
- Weisner, T.S. (2005). Childhood: Anthropological aspects. In J. Wright (Ed), *International Encyclopedia of the social & behavioral sciences* (2nd ed., Vol. 3, pp. 451-458). Amsterdam, Netherlands: Elsevier.
- Wenzlaff, R. M., & Wegner, D. M. (2000). Thought suppression. *Annual Review of Psychology*, 51, 59–91. <https://doi.org/10.1146/annurev.psych.51.1.59>
- Westen, D., & Rosenthal, R. (2003). Quantifying construct validity: Two simple measures. *Journal of Personality and Social Psychology*, 84(3), 608–618. <https://doi.org/10.1037/0022-3514.84.3.608>
- Whittemore, R., Chase, S.K., Mandle, C.L. (2001). Validity in qualitative research. *Qualitative Health Research*, 11(4), 522–537. DOI:10.1177/104973201129119299
- Wiersma, L. D. (2001). Conceptualization and development of the sources of enjoyment in youth sport questionnaire. *Measurement in Physical Education and Exercise Science*, 5(3), 153–177. [https://doi.org/10.1207/S15327841MPEE0503\\_3](https://doi.org/10.1207/S15327841MPEE0503_3)

- Wiktorowicz, J. (2016). Exploratory factor analysis in the measurement of the competencies of older people / Eksploracyjna analiza czynnikowa wocenie kompetencji osób starszych. *Ekonometria*, 4. <https://doi.org/10.15611/ekt.2016.4.03>
- Williams, A. M., & Reilly, T. (2000). Talent identification and development in soccer. *Journal of Sports Sciences*, 18(9), 657–667. <https://doi.org/10.1080/02640410050120041>
- Winn, W. (2003). Learning in artificial environments: Embodiment, embeddedness and dynamic adaptation. *Technology, Instruction, Cognition and Learning*, 1(1), 87-114.
- Withagen, R., De Poel, H. J., Araújo, D., & Pepping, G.-J. (2012). Affordances can invite behavior: Reconsidering the relationship between affordances and agency. *New Ideas in Psychology*, 30(2), 250–258. <https://doi.org/10.1016/j.newideapsych.2011.12.003>
- Wolfe, E. W., Moulder, B. C., & Myford, C. M. (2000). Detecting differential rater functioning over time (DRIFT) using a Rasch multi-faceted rating scale model. *Journal of Applied Measurement*, 2, 256–280.
- Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, 34(6), 806–838. <https://doi.org/10.1177/0011000006288127>
- Wylleman, P., Alfermann, D., & Lavallee, D. (2004). Career transitions in sport: European perspectives. *Psychology of Sport and Exercise*, 5(1), 7–20. [https://doi.org/10.1016/S1469-0292\(02\)00049-3](https://doi.org/10.1016/S1469-0292(02)00049-3)
- Yanyun Yang, & Green, S. B. (2011). Coefficient alpha: A reliability coefficient for the 21st century? *Journal of Psychoeducational Assessment*, 29(4), 377–392. <https://doi.org/10.1177/0734282911406668>
- Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, 9(2), 79–94. <https://doi.org/10.20982/tqmp.09.2.p079>

- Yuan, K.-H., Chan, W., Marcoulides, G. A., & Bentler, P. M. (2016). Assessing structural equation models by equivalence testing with adjusted fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal*, 23(3), 319–330. <https://doi.org/10.1080/10705511.2015.1065414>
- Zhang, C.-Q., Chung, P.-K., & Si, G. (2017). Assessing acceptance in mindfulness with direct-worded items: The development and initial validation of the Athlete Mindfulness Questionnaire. *Journal of Sport and Health Science*, 6(3), 311–320. <https://doi.org/10.1016/j.jshs.2015.09.010>
- Zimmerman, B. J. (2004). Sociocultural influence and student's development of academic self-regulation: A social-cognitive perspective. In D. M. McInerney, & S. V. Etten (Eds.), *Big theories revisited* (pp. 139-164). Greenwich, CT: Information Age.

# APPENDIX A: ETHICAL APPROVAL



UNIL | Université de Lausanne

Institut des sciences du sport  
de l'Université de Lausanne

## Presentation of the study

The study in which you will participate is led by Mr. Samuel Owiti as part of his PhD studies at the Institute of Sport Sciences (University of Lausanne), under the direction of Prof. Denis Hauw. This research has been approved by the "Commission d'éthique de la recherche de la Faculté des Sciences sociales et politiques de l'UNIL".

This project consists of identifying the Social Adaptability Skills required when athletes transition from one club to the another. It will focus on how athletes manage to adapt despite the challenges as concerns: teammates, coach, being away from family and friends, and the club.

Data will be collected by Mr. Owiti and will comprise a series of face-to-face interviews. In agreeing to take part in the face-to-face interview, I will be flexible in working around the times that you are available. The data collected will then be kept strictly anonymous and analyzed under Prof. Hauw's supervision.

All the information provided is strictly confidential and kept under secure encrypted ID for the duration of the study. The information linking this ID to your name is kept by Mr. Owiti under the rules of professional secrecy. Since the face-to-face interviews will be video recorded, by signing the consent form, you agree to the use of your image. Once encoded for statistical processing, the data collection forms will be stored strictly anonymous for a maximum period of 5 years after which they will be destroyed.

There will be no compensation in monetary terms awarded to the participants who take part in the study. However, on request, information about your own results can be presented to you and will be done by Mr. Owiti under Prof. Hauw's supervision.

There are no risks involved in taking part in the study. The face-to-face interviews will last approximately 30-40 minutes. In case you decide to leave the study without completing the full interview, your data will immediately be destroyed and excluded from the study.

The study results may be the subject of publications or scientific and popular communications, written or oral, in which your anonymity will be ensured.

**CONSENT OF PARTICIPATION IN THE STUDY**

complete and sign

I, undersigned, ....., declare to have been completely informed about the objectives and the modalities of the study for which I was asked, accepted to participate voluntarily, and informed that I am free to abandon my participation at any time without having to justify myself.

Signed at ....., date .....

Signature:

## APPENDIX B: THE INTERVIEW GUIDE

### General Info

Age= years                      -Played for how many clubs?= Coaches? =

### Time line

Year....                      .....                      .....                      .....

Timeline 

Year \_\_\_\_\_ to \_\_\_\_\_ (coaches) \_\_\_\_\_ (level) \_\_\_\_\_

Year \_\_\_\_\_ to \_\_\_\_\_ (coaches) \_\_\_\_\_ (level) \_\_\_\_\_

Year \_\_\_\_\_ to \_\_\_\_\_ (coaches) \_\_\_\_\_ (level) \_\_\_\_\_

Year \_\_\_\_\_ to \_\_\_\_\_ (coaches) \_\_\_\_\_ (level) \_\_\_\_\_

-Did you play basketball at high school? how did you end up as a pro, previous club.

### Opening Q's

1. If you resume your career from all the clubs you have played for, what comes to your mind during these steps of your career in terms of adaptation?
2. Were there some specific or general things which attracted you to some of the clubs you have played for?

### Time line questions COACHING

1. (Coaching style) During your first stay at ..... for .... year, how many coaches did you play under?
2. How would you describe your relationship with the coach?
3. How was your feeling as concerns the coaching style? Did it suit your playing style?
4. How did you manage to adapt to this coaching style?
5. Did you have to make an effort to adapt to this style?
6. I guess there were some coach's expectations from you, did you manage to live up to the expectations?
7. Trainings and competitions- What was your feeling about these? Were they good/bad?
8. How did you manage to adapt to the trainings and competitions?

### TEAMMATES

1. How would you describe your relationship with your teammates?
2. Were there some adaptations/efforts that you had to make as an individual so as to get along with your teammates?
3. What kind of things did you do (example) to help in getting along with the teammates?
4. Were the efforts exhausting?



## **CLUB**

1. What was your general feeling of the club as a whole?
2. Were there some difficulties you encountered with the club?
3. What did you like or not like with the club?
4. How did you manage to adapt to that?
5. Were the difficulties with adaptation in the beginning or the end?

## **SOCIAL LIFE**

1. During your time with this team, were you away from your family
2. Did this feeling of being away from the family affect your matches/practices and preparations?
3. How did you manage to reconcile the two? (being away from family and practices)
4. Were there some social challenges you encountered when you moved over (language, age group within the team, home sick)?
5. How did you adapt to these?

## **QUESTION Summary**

1. Of the 4 things we have talked about (Coaching styles-training, practices, recovery), teammates, Club, and social life), what was the most difficult to adapt to?
2. Which one was easier? And lastly which one was average, in the middle?
3. Why did you have to leave the team?
4. Lastly what kind of advice would you give to a young athlete joining your club in terms of adaptability?

## **APPENDIX C : THE SOCIAL ADAPTABILITY SKILL**

### **QUESTIONNAIRE (SASQ-17-Items)**

Thank you for participating in the validation of a questionnaire on the psychological evaluation of adaptations. This work is carried out by the sport psychologists of the Institute of Sport Sciences of the University of Lausanne under the responsibility of Samuel Owiti (PhD student) and Professor Hauw. By following the indications below, you will be able to fill in this questionnaire while keeping your anonymity.

**Anonymity form:** The answers to the questions below will allow us to generate a code that guarantees your anonymity.

**Name of your Club:**

**Age:**

**First letter of your father's name:**

**First letter of your mother's name:**

**Your initials:**

**Actual level of play (1 for cantonal-regional; 2 for national; 3 for international):**

In the following pages you will find several proposals that refer to the commitment in your activity. Please indicate to what extent each of these proposals corresponds to your current activity. There are no right or wrong answers. Answer as spontaneously as possible. **For example :**

(Indiquez, s'il vous plaît, dans quelle mesure chacune des ces propositions correspond à votre activité actuelle) <b>To what extent does this proposal correspond to you ?</b>	(Cela ne me correspond pas du tout). <b>Very strongly Disagree</b>	(Cela ne me correspond pas). <b>Strongly Disagree</b>	(Cela ne me correspond pas vraiment) <b>Mildly Disagree</b>	(Cela me correspond partiellement) <b>Mildly Agree</b>	(Cela me correspond) <b>Strongly Agree</b>	(Cela me correspond totalement) <b>Very strongly Agree</b>
Lorsque je rejoins un club à l'ambiance familiale, je peux m'entendre avec mes coéquipiers. « <i>Whenever I join a club with a family atmosphere, I am able to get along with my teammates</i> ».						

**This questionnaire is to be completed in the following pages:**

<b>To what extent does this proposal correspond to you?</b>	<b>Very strongly Disagree</b>	<b>Strongly Disagree</b>	<b>Mildly Disagree</b>	<b>Mildly Agree</b>	<b>Strongly Agree</b>	<b>Very strongly Agree</b>
<b>Q1.</b> Je trouve que les relations entre les membres d'une équipe ne sont jamais spontanées mais toujours intéressées. « <i>I find that relations between teammates are not usually spontaneous but always interesting</i> ».						
<b>Q2.</b> Lorsque l'entraîneur(e) me donne des ordres/conseils, je suis capable de suivre ses indications sans difficulté. « <i>Whenever the coach gives me orders/advice, I am able to listen and respect</i> ».						

his/her decision without difficulties”.						
<b>Q3.</b> J’ai du mal à écouter les entraîneurs(es) que je ne connais pas bien. « <i>I have difficulties listening to coaches/trainers that I don’t know</i> ”.						
<b>Q4.</b> Cela ne me dérangerait pas de me faire coacher dans une langue étrangère. « <i>I wouldn’t mind being coached in a foreign language</i> ».						
<b>Q5.</b> Lorsque j’ai des coéquipiers et coéquipières d’origines ethnique et culturelles différentes, je me sens à l’aise pour communiquer avec eux. « <i>Whenever I have teammates from a different cultural background, I feel at ease communicating with them</i> ”.						
<b>Q6.</b> Je n’aime pas qu’il y ait des joueurs étrangers dans mon équipe « <i>I don’t like having foreign teammates</i> ».						
<b>Q7.</b> Je ne supporte pas qu’un entraîneur(e) favorise certain-e-s joueur.se.s au détriment d’autres.						

<p>« <i>I can't tolerate it when trainer/coach favours certain players more than others</i> ».</p>						
<p><b>Q8.</b> Je trouve normal que les temps de jeu en match puissent varier quand les entraîneurs (es) changent. « <i>I find it normal that play time can vary whenever trainers/coaches change</i> ».</p>						
<p><b>Q9.</b> Je suis paralysé lorsque mon entraîneur(e) me met la pression pour atteindre des objectifs. « <i>I always feel paralysed whenever my trainer/coach puts pressure on me to reach my sporting goals</i> ».</p>						
<p><b>Q10.</b> Je suis stimulé lorsque mon entraîneur(e) me met la pression pour atteindre des objectifs. « <i>I always feel stimulated whenever my trainer/coach puts pressure on me to reach my sporting goals</i> ».</p>						
<p><b>Q11.</b> Je me sens capable de m'entraîner avec n'importe quel entraîneur quels que soient ses comportements (pression, soutien, indifférence). « <i>I feel</i></p>						

<p><i>capable of carrying out my training despite the coach's behaviour (pressure, support, or indifference)''.</i></p>					
<p><b>Q12.</b> Je suis toujours motivé-e à pratiquer mon sport, même si je trouve que l'entraînement proposé par l'entraîneur (e) n'est pas de bonne qualité. «<i>I am always motivated to practice my sport even when the trainings proposed by the trainer/coach are not of high quality''.</i></p>					
<p><b>Q13.</b> Je me sens vite perdu lorsque je suis loin de ma famille (exemple : pendant des stages ou camps loin de chez moi). «<i>I always feel lost when I am away from my family (for example, during internships or camps away from my family''.</i></p>					
<p><b>Q14.</b> Je n'éprouve pas de difficultés particulières lorsque je suis loin de ma famille (exemple : pendant des stages ou camps loin de chez moi). «<i>I don't encounter any particular difficulties whenever I am away from my family (for example,</i></p>					

<i>during internships or camps away from home”.</i>						
<b>Q15.</b> Ce n’est pas envisageable pour moi que de vivre dans le futur loin de ma famille. « <i>I don’t see myself living far from my family in the future”.</i>						
<b>Q16.</b> Je n’accepterais pas de jouer dans un club qui n’a pas d’installations sportives de qualité. « <i>I wouldn’t accept to play in a club whose training facilities are not of high quality”.</i>						
<b>Q17.</b> Je sais m’entraîner sérieusement même si la qualité des installations sportives n’est pas toujours satisfaisante. « <i>I know how to train seriously on my own even when the sporting facilities are not satisfactory”.</i>						

## APPENDIX D: THE ATHLETE MINDFULNESS SKILLS QUESTIONNAIRE (AMSQ)

You will find below a number of suggestions relating to commitment to your activity. Please indicate to what extent each of these proposals corresponds to your current activity. There are no right or wrong answers. Please answer as spontaneously and honestly as possible.

Please indicate to what extent each of these proposals corresponds to your current activity?	Very strongly Disagree	Strongly Disagree	Mildly Disagree	Mildly Agree	Strongly Agree	Very strongly Agree
1. I can maintain my attention on my training						
2. When I find myself distracted, I gently bring my attention back to my training.						
3. I can easily sustain my attention on the competition.						
4. When I feel muscular pain during training, I can still maintain attention on things I should do.						
5. If I notice that my mind is wandering, I can quickly get back to focusing on my training or competition.						
6. I am aware that my emotions during training and competition can influence my thinking and behavior.						
7. When something unexpected happens during training or competition, I am aware of my emotion state.						
8. When something during training and competition doesn't go well, I am aware of my inner frustration and restlessness.						
9. When the situation changes during the competition, I am aware of the thoughts and ideas that flashed across my mind.						
10. When the competition process is totally beyond my expectations, I am aware of my physical reactions and changes.						



11. During training or competition, I can be immediately aware of my emotional changes.						
12. During training and competition, I can put up with unpleasant thoughts and feelings.						
13. During training and competition, it doesn't matter if the situation is good or bad, I can accept myself for who I am.						
14. During training and competition, I can let go of the emotions brought about by negative life events.						
15. During training and competition, it doesn't matter if my thoughts and feelings are comfortable or not, I put up with all of them.						
16. Even though some thoughts and feelings during training and competition may be unpleasant or miserable, I can get along with them peacefully.						

**Part 1:** Present moment attention

**Part 2:** Awareness

**Part 3:** Acceptance

## APPENDIX E: THE ATHLETIC COPING SKILL INVENTORY (ACSIQ-adapted version)

Thank you for participating in the current study which aims to evaluate the strategies you deploy during your sport practices.

This work is carried out by the Institute of Sport Sciences of the University of Lausanne under the responsibility of Samuel Owiti (PhD student) and Professor Hauw.

**Anonymity form:** The answers to the questions below will allow us to generate a code that guarantees your anonymity.

**Name of your Club:**

**Age:**

**First letter of your father's name:**

**First letter of your mother's name:**

**Your initials:**

**Actual level of play (1 for cantonal-regional; 2 for national; 3 for international):**

In the following pages you will find several proposals that refer to the strategies you use during your Sport practices. Please indicate to what extent each of these proposals corresponds to your current activity on a 4-point scale (0 = almost never; 1 = sometimes; 2 = often; 3 =almost always). There are no right or wrong answers. Answer as spontaneously as possible:

0

1

2

3

1. On a daily or weekly basis, I set very specific goals for myself that guide what I do.
2. I tend to do lots of planning about how to reach my goals.
3. I set my own performance goals for each practice
4. I have my own game plan worked out in my head long before the game begins.
5. I remain positive and enthusiastic during competition, no matter how badly things are going.
6. When things are going badly, I tell myself to keep calm, and this works for me.
7. When I feel myself getting too tense, I can quickly relax my body and calm myself.
8. I maintain emotional control regardless of how things are going for me.
9. I get the most out of my talent and skill
10. I feel confident that I will play well.
11. I don't have to be pushed to practice or play hard; I give 100%.
12. When I fail to reach my goals, it makes me try even harder.

### Scoring

This is the Athletic Coping Skills Inventory (ACSI-28 revised version that measures only three components: (Goal setting and mental preparation, coping with adversary, and self-confidence), a measure of an athlete's psychological skills, developed by Smith et al. (1994). Determine your score on the following subscales by adding the scores on the question numbers identified.

**\_\_\_\_\_ Goal Setting and Mental Preparation:** Assesses whether an athlete sets and works toward specific performance goals, plans and mentally prepares for games, and clearly has a

game plan for performing well. (Sum scores on questions 1, 2, 3, and 4, and place the total in the blank provided.)

\_\_\_\_\_ **Coping With Adversity:** This subscale assesses if an athlete remains positive and enthusiastic even when things are going badly, remains calm and controlled, and can quickly bounce back from mistakes and setbacks. (Sum scores on questions 5, 6, 7, and 8, and place the total in the blank provided.)

\_\_\_\_\_ **Confidence and Achievement Motivation:** Measures if an athlete is confident and positively motivated, consistently gives 100% during practices and games, and works hard to improve his or her skills. (Sum scores on questions 9, 10, 11, and 12, and place the total in the blank provided.)

\_\_\_\_\_ **Total score** or sum of subscales Scores range from a low of 1 to a high of 20 on each subscale, with higher scores indicating greater strengths on that subscale. The score for the total scale ranges from a low of 1 to a high of 60, with higher scores signifying greater strength.

## **APPENDIX F: CONTACT LETTERS TO CLUBS**

After having contacted the handball, basketball, and unihockey federations, they gave me respective links the links to your clubs, I have decided to contact each of you to find out if you're interested in my proposal below.

I'm a doctoral student at the University of Lausanne (UNIL) in sports psychology. We're looking to validate a tool that measures the willingness of team sports players to adapt to changes of club. As part of the education of talented sportsmen and women, the aim is to prepare them for the challenges they may encounter in the course of their careers by changing structures or clubs.

To do this, we have developed an assessment tool to find out where players stand on these issues. But we need to validate it scientifically, so we need to collect more than 300 questionnaires. We have contacts in basketball and hockey, but given our collaboration we would like to be able to collect a handball sample. The ages range from 12 to 21. The questionnaire takes 15-20 minutes to complete.

I can of course come to you to do this, depending on the organisation that suits you best.

I'll give you feedback at the end of the survey and present the position of the different groups at this level and the avenues to be explored.

I have attached a consent form setting out the aims of the study.

Thank you in advance.

Yours sincerely

Samuel Owiti

\*\*\*\*\*

### **French version**

Après avoir contacté la fédération de handball qui m'a ensuite donné les liens de votre club pour contacter chacun d'entre vous si ma proposition vous intéresse.

Je suis doctorant à l'Université de Lausanne (UNIL) en psychologie du sport. Nous cherchons à valider un outil qui mesure les dispositions de joueurs de sports collectifs à s'adapter aux changements de clubs. Il s'agit dans le cadre d'une éducation des talents sportifs à les préparer aux challenges qu'ils pourraient rencontrer au cours d'une carrière en changeant de structure ou de clubs.

Pour cela, nous avons donc développé un outil d'évaluation pour savoir où en sont les joueurs sur ces questions. Mais il nous faut le valider scientifiquement et nous avons donc besoin de collecter plus 300 questionnaires. Nous avons des contacts en Basket, en Hockey mais nous

aimerions compte tenu de notre collaboration pouvoir collecter un échantillon de Handball. Les âges sont compris entre 12 et 21 ans. Le questionnaire se passe en 15-20 minutes.

Je pourrai me déplacer bien évidemment pour cela en fonction de l'organisation qui conviendrait le mieux.

Je te ferais un feed-back comme à l'issue de ce travail et vous présenterais le positionnement des différents groupes à ce niveau et les pistes de travail à envisager.

J'ai joint un formulaire de consentement indiquant les objectifs de l'étude.

En vous remerciant par avance.

Cordialement

Monsieur OWITI

## **APPENDIX G: PEER REVIEW HISTORY FOR ARTICLE- (Owiti & Hauw, 2021)**

### **Reviewer 1 comments and feedback**

**Comment: Present even briefly the mesosystems and exosystems:**

*The mesosystem consists of interactions between the microsystems, for example, the relationship between athletes and coaches. Consequently, the exosystem contain the links of social setting or events in which the athlete is influenced indirectly but have profound effect on their development, for example alteration of the team's coach (Bronfenbrenner, 1979; Krebs, 2009).*

**Comment: Use of Fruchart & Mullet, 2012**

*We have inserted supportive arguments in the discussion section as regards the dimension of difficult experience due to family and friends.*

**Comment: Where is the “self-organization”?**

*Thanks a lot for pointing this omission, however, we have deleted the model (Figure 2) since it replicated most of the information already reported in Table 2.*

**Comment: Revisit References section**

*Reference section revisited and in compliance with APA 7<sup>th</sup> edition referencing style.*

**Comment: One publication cited in reference part is different in Text: Vaeyens, 2008 OR 2009?**

*The reference corrected is “Vaeyens, 2008”.*

### **Reviewer 2 comments and feedback**

**Comment: The main limitation lies in the definition of the terms used (*change, development, transformation, transition, adaptation*).**

We thank you in advance for highlighting this limitation. We have therefore included within the introduction; Life course transition frameworks which helps define *development, change, transition and transformation*. The following paragraph has been added:

*Life-course transition frameworks have studied human development reporting that it is not linear and cannot be predicted (Zittoun, 2009). The studies posit that development of a person is characterized by a constantly changing adjustments between the person and its environment, going through a series of relatively stable periods, alternating with brutal raptures within the adjustment process (van Geert, 2003). During the moments in which the person's development is interrupted, reoriented, or challenged, such moments help the person develop new conduct to answer the challenges through a process of transitions. Thus, in life*

*transition frameworks, transitions have been defined as processes of catalysed change due to rapture, and aiming at a new sustainable fit between the person and their current environment (Zittoun et al., 2003). The notion of rapture have been defined in different manners; irritation (Peirce, 1878), crisis (Vygotsky, 2004), disequilibrium (Piaget, 2003) or challenge (Smelser, 1980). Therefore, transitions can be seen as processes of reorganization of a system in which the person's interpretation of a perceived rapture plays a major role in their subsequent thoughts and actions. Additionally, transition is only useful if it can account for transformations/adaptations- a change from one state to another (Zittoun et al., 2003).*

*Reviewer 2 comments and feedback*

**Comment: Justifying the use of the term adaptability which belongs to the social psychology.**

Once again thank you for the valuable insight. We have argued the use of the term adaptation using the cognitive appraisal model by Brewer, 1994. Cognitive appraisal model can be relevant in explaining the athlete's response to difficult adaptation experiences. Thus, the model proposes that the way an individual interprets (appraises) a difficult experience determines the emotional response. The appraisal is influenced by the interaction of personal factors (i.e., dispositional and/historical attributes) and situational factors (i.e., aspects of social and physical environments). We have therefore added the following paragraph within the introduction:

*Although it is beyond the scope of this paper to evaluate all the models of psychosocial adaptation literature, the cognitive appraisal model could be relevant in explaining athletes' response to adaptation challenges. In line with the contemporary theory and research on stress and coping, Brewer (1994) proposed that the way in which an individual interprets (appraises) a challenge determines the emotional response. Thus, the fact that an athlete is experiencing a difficult adaptation is considered less critical to understanding emotional reactions than is the way the adaptation is perceived. Cognitive appraisals are postulated to be influenced by the interaction of personal factors (i.e., dispositional and/or historical attributes of the individual-self-esteem, coping skills, self-organization) and situational factors (i.e., adaptation related characteristics and the variable aspects of social and physical environments) (Folkman, 1984; Brewer 1994).*

*Reviewer 2 comments and feedback*

**Comment: Methodology (more information regarding participants)**

More information has been added and now the paragraph reads as follows:

*The names and addresses of all the athletes were obtained through contacts from the Swiss Basketball Federation which is the governing sports body currently covering 17,000 members from its nine regional associations comprising 185 clubs. A total of 35 basketball players were emailed a cover letter explaining the purpose of the study out of which 25 players responded positively. Five players could not be interviewed due to time and distance constraints. Finally, the study involved a convenient sample of twenty European and American professional basketball players (age range 20 – 36; Mean 26.05, SD = 4.12). In total, twelve players had undergone through European basketball academies in their respective countries (example; France, Swiss and Lithuania) and had performed at highest national levels (Swiss Basketball League, League National Basketball France). In the contrary, eight remaining participants had undergone through the North American academies (example; USA & Canada) and had played in one of the highest leagues (National Basket Association G League and Women’s National Basketball Association). For athletes to be included in the study, they must have been currently playing at an international/professional level and also gone through more than one club transitions (club range 3 -10; Mean 5.35, SD = 2.08). Lastly, the athletes must have been trained under more than one coach (coaches’ range 4 – 15; Mean = 8.65, SD = 2.92).*

#### *Reviewer 2 comments and feedback*

##### **Comment: How were you able to capture the dynamics of the professional experience?**

We acknowledged the difficulty in capturing the dynamics of the adaptation experience. Due to that reason, we developed an interview format based on timeline and this required decomposing the flow of time into periods so as to keep the semiotic trace of adaptability experience. We therefore measured the athlete’s adaptability experience at one point (X- 1<sup>st</sup> club) and measured the same at point Y- 2<sup>nd</sup> club). The timeline interview guideline enabled us identify the dynamics of adaptability experience (successful or unsuccessful) and also the process of adaptability (what actions the athletes put in place that led to either successful or unsuccessful adaptability).

##### **Comment: What are transition questions? Describing a relationship, a feeling or answering how athletes adapted is difficult to answer “framing of the questions”**

You are right by suggesting that describing a feeling of adaptability is difficult to answer. However, we only mentioned the key questions because they corresponded to our topic/theme of research. The questions i.e., (*Can you describe your feeling about the coach?*) were just an introductory way to lead to other questions relating to the dynamics of the professional experiences of the athletes. All through the interview, additional stimulating questions were



asked to help gain the dynamics (i.e., *How was your adaptability experience during the first club transition compared to the latest transition?*). Additionally, the timeline interview structure aided in capturing the dynamics of the mutation.

*Reviewer 2 comments and feedback*

**Comment: The explanatory analysis remains very theoretical, not always making the ideas that the authors want to convey understandable.**

The following phrases were added into the data analysis section to make it understandable on how we proceeded.

Analyses for this study involved first transcribing the interviews, then reading the transcriptions and summarizing each scene. Sample codes were created and organised by content and themes and then linked to transcribed interviews. During the first round of identification of different codes and characteristics in the data, this process was repeated in an iterative way, as data were critically analysed in order to elucidate patterns found in the narratives. Further analysis involved developing additional codes, identifying emerging patterns within the data and constantly comparing the codes in myriad ways (e.g., between participants or between different transitions). The coders met to discuss perceived themes and came to unanimous decisions regarding each coded theme.

*Reviewer 2 comments and feedback*

**Comment: Results section- More information concerning how many participants were successful during the adaptations?**

The following paragraph has been added on the manuscript:

During the transitions, participants were required to adapt, thus, either leading to a successful or unsuccessful adaptation. Of the 20 participants, 65 % reported having encountered successful transitions while 35 % reported having encountered unsuccessful transitions. Those who experienced successful transitions stated that the situations may positively influence their ability to cope in similar conditions. On the contrary, participants who experienced unsuccessful transitions stated that the situations may negatively influence their ability to cope in similar conditions. One of the participants who experienced successful transition reported this; *“He was probably the toughest coach I ever had, his language and tone were unprofessional. That was probably the most challenging time for me as a player, and once I got through it, I knew that I could go through any challenge in my life- JW98IM”*

*Reviewer 2 comments and feedback*

**Comment: How do the results present data or links with the experience of basketball players? It would have been interesting to know the resources available to each player to understand adaptation.**

There were experiences found which were related to athletes' adaptability. The mutations required the athletes to adapt, thus, either leading to a successful or unsuccessful mutation. We only presented our results in general (not for each player) of the available resources to the players (i.e., self-discipline, confidence, motivation, goal-setting etc)

## APPENDIX H: PEER REVIEW HISTORY FOR ARTICLE (Owiti et al., 2021)

<i>Section</i>	<i>Reviewer 1</i>	<i>Reviewer 2</i>	<i>Reviewer 3</i>	<i>Remarks</i>
<b>Abstract</b>	No comment	-Improve Abstract with methodological details <i>(Abstract improved-page 2)</i>	-Add basketball to the keywords <i>(Basketball added- page 2)</i>	
<b>Title</b>	No comment	-Include discipline in the title <i>(Individual differences in professional sport narrative experience during basketball players club transitions- page 1 &amp; 2)</i>		
<b>Introduction</b>	-Theoretical justification Make connection between workplace literature and narrative identity literature (especially the constructs listed) <i>(A paragraph has been added showing the links between narratives</i>	-To extensive, refer only to specifics. <i>(Only specifics covered in the introduction part- page 2-9).</i> -Do not divide text into parts <i>(we prefer to leave the divided part for guidance</i>		

	<i>and work place literature -page 8 &amp; 9). Further links of the constructs made in the discussion section- page 29-30; 31)</i>	<i>and ease of understanding by readers pages 2-9)</i>		
<b>Methods</b>	<p><i>-Describe the timeline interview in detail (Involved measuring the adaptability experience at one point then measuring the same experience at another point. This facilitated keeping the semiotic trace of adaptability experience- page 12)</i></p> <p><i>-Point out explicitly the advantages timeline structured interview has over other narrative methods. (By opting for a timeline narrative interview, we were able to capture the processual nature of adaptability process as they dynamically emerged over time. This advances our study design over other previous research, which have only applied the single time point and/or</i></p>	<p><i>-Clarify selection of samples (We have additionally explained how the clubs and players were approached, inclusion/exclusion criteria- page 9-10)</i></p> <p><i>-Explain why such small sample (We stopped collecting data since no new themes were being generated- data saturation point- page 13)</i></p>		

	<p><i>single prompts to capture narratives (e.g., only high and low points of our lives, self-defining moments, and turning points (Fivush, Booker &amp; Graci, 2017- page 12)</i></p> <p><i>-Could having asked for narratives directly before asking participants to provide ratings of difficulty introduced artificially high correlations between narratives and difficulty ratings? The rating should be seen as part of the narratives converted into numbers and we acknowledge that its not easy to assess participants feelings and experiences using numbers. We have put this as a limitation. However, our aim was to uncover at what level of narratives does the relation exists, and to ensure that no artificial correlations existed. Therefore to answer your question, we</i></p>			
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	<p><i>do not think that by reversing the timing of the question would have led to a fruitful solution. - page 12)</i></p> <p><i>-Use of the term “data saturation” We use the term “saturation” as its commonly used in qualitative research to indicate that, on the basis of the data that have been collected or analysed hitherto, further data collection and/ analysis are unnecessary (Saunders, Sim, Kingstone et al., 2017). In their original treatise on grounded theory, Glaser and Strauss (1967: p. 61) defined saturation in these terms: The criterion for judging when to stop sampling the different groups pertinent to a category OR simply no additional data are being found. - page 13)</i></p> <p><i>Measures</i></p>			
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	<p>-Not clear how easy and difficult transitions were assessed. <i>Finally, after each broad question, participants were requested to rate their experiences based on a Likert scale (from 3- easy, 2- average, and 1- difficult) if they thought that the transition was either easy, average or difficult. Easy transition and bad transition in this context were defined as an outcome which involved either an absence or presence (respectively) of problems with coach, teammates, and being away from the family. Average transition involved both presence and absence of problems with coach, teammates, and being away from the family-( page 12-13).</i></p> <p>-Justification lacking as to why middle score was not computed</p>			
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	<p><i>(Average score computed, refer Table 4 page- 18)</i></p> <p><i>-Confusion as to whether inductive approach (top-down used- correction made- page 13).</i></p> <p><i>-Clear justification as to the claim “rating scale is best to capture narratives” The sentence has been re-phrased as; “We adopted a rating scale (quantitative approach) to code the components in order to link the narratives (qualitatively). Thus, by focusing on the narratives, we were mostly concerned with the situated culture nearest to the person. However, the scores allowed us to move away from the person while reducing our way out of the singularity- page 13).</i></p> <p><i>Analyses</i></p>			
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	<p>-Seems like each narrative was treated as an independent observation rather than being nested within participants  “consider pooled-within person correlation”</p> <p><i>Since not all participants had the same number of transitions, the pooled-within person correlation approach would give biased results. We treated your concern by computing Mean/SD and looked if there were differences in the sub scores of each participant and since our Mean/SD were low, we concluded that they were representative of the global narratives. Argument supported by Table 4 on page 18).</i></p> <p>-As currently presented, quantitative results don’t support strong claims”</p> <p><i>Integrating the findings from the two methodology intentionally to generate</i></p>			
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	<p><i>new insights. The basic assumption of the mixed method approach is that it combined qualitative findings and quantitative results led to additional insights not gleaned from the qualitative or quantitative findings alone (Creswell, 2015; Greene, 2007; Tashakori &amp; Teddlie, 2010).</i></p> <p><i>This link example is shown on page 24. Further justification of the quantitative analysis is presented on page 13-14).</i></p>			
<b>Results</b>				
<b>Discussion</b>	<p>-Require better organisation (interpretation bounced back and forth between the sports, narrative and workplace literature). <i>(Better organization of the discussion section done- page 26-32)</i></p>			

<p><b>Limitation</b></p>	<p>-Discuss generalizability due to (unequal gender representation, players mostly from one region thus lacking cross-culture variation. <i>Already included (page-33)</i></p> <p>-How future studies might allow for causal claims. <i>We acknowledge that testing for causality in real world is difficult, however, future studies could apply research designs that carefully match groups in a controlled randomised experiment- page 33-34)</i></p> <p>-Small effect size should be addressed explicitly for an informed opinion about quantitative analysis. <i>This could have been due to the small sample size. We therefore include it as a limitation of the current study. Our results compare well with other studies which have applied scores to analyse narratives (McLean et al.,</i></p>	<p>-Highlight the limitations of the study (<i>Done- page 33-34)</i></p>	<p>-Extend limitations to include unequal representation of gender (<i>Done- page 33-34)</i></p>	
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	<p>2019; Graci, Watts &amp; Fivush, 2018)- page 33-34</p> <p>-Retrospective recall as a limitation not concerned with narrative research. <i>Already deleted</i></p>			
<b>Practical implications</b>	<p>-Described too briefly <i>(more information added- page 35)</i></p>		<p>-Add more practical implications <i>(more information added- page 35)</i></p>	
<b>Other</b>		<p>-Provide approval number of Ethics Committee. <i>(Wilbe provided later. Delay from the ethics committee see page 11)</i></p>		

## APPENDIX I: PEER REVIEW HISTORY FOR ARTICLE (Owiti & Hauw, 2023).

### Response to editor/s comments:

<i>Comment</i>	<i>Response</i>
1.Ensure manuscript meets The PLOS ONE'S style (file naming)	File naming has been adjusted
2.Amend the ethics statement to address: (a) if participants provided written or verbal consent to participate in the study?	2 (a) -Yes, this has been amended in each study part: <i>(After receiving approval from the Research Ethics Commission of the University of Lausanne (Project number: E_SSP_122021_00002) and informed written consent from all participants).</i>
3. Provide minimal data set underlying the results.	We have provided minimal data set under file name " <i>Supporting Information Files</i> " (i.e., S1 Raw Dataset, S2 T-score Dataset, S3 Test-retest dataset)
4. Amend the title on the online submission form to correspond the manuscript	This has been amended so that both the online and manuscript title correspond <i>(The Initial Development and Validation of the Social Adaptability Skills Questionnaire: SASQ)</i>
5. Include captions for the supporting information files at the end of the manuscript.	The following captions have been included at the end of the manuscript; (S1 Raw Dataset, S2 T-score Dataset, S3 Test-retest dataset)

### Response to Reviewer 1 comments:

<i>Comment</i>	<i>Response</i>
<i>Line 58</i> : cite more than one study since you wrote "studies"	The sentence has been rephrased to include only one reference <i>(and a recent study has underlined distinct periods of adaptation to the new environment (2)).</i>
<i>Line 61</i> : such as? Clarify sentence and add citation.	The sentence has been clarified as follows and citation added too: <i>(as they may lack some of the basic skills and psychosocial resources (example: positive</i>

	<i>thinking, goal setting skills, self-confidence skills) that are needed to ensure successful moves) (2)</i>
<i>Line 78: Indicate citation</i>	Citation has been included ( <i>Hauw et al., 2022</i> ) (6).
<i>Line 85: Indicate citation</i>	Citation has been included ( <i>Abbot &amp; Collins, 2004 (7); Toering et al., 2011 (8); Van Yperen, 2009 (9)</i> ).
<i>Line 222: Why did the authors change the Likert-type scale?</i>	<p>We do acknowledge that in Lei Chang (1994) while evaluating which point scale between 4 or 6 in relation to reliability and validity argued for the use of a 4-point scale. However, the authors do admit as a limitation in their study that respondent knowledge with respect to what is being measured might have affected their conclusion as to whether the 4-point scale or 6-point scale was the best choice.</p> <p>Additionally, the authors do encourage future studies to look beyond a simple relation between number of scale points and reliability or validity for possible interaction effects between scale points and other factors such as respondent knowledge of what is being measured.</p> <p>Confronted with this limitation, we chose to apply the 6 point scale which had previously been applied in similar context as the current study (Development &amp; Initial validation of the psychological characteristics of developing questionnaire-PCDEQ (MacNamara &amp; Collins, 2011)).</p>
<i>Line 249: Did the authors conduct a priori sample calculations?</i>	<p>Yes, we did and we have now inserted this part in the manuscript.</p> <p>The number of subjects needed to perform the EFA. The 10:1 ratio (number of subjects for each item in the questionnaire) is the recommended</p>

	<p>number and is the one that generates some, yet not full consensus in the literature (DeVellis, 2003; Hill and Hill, 2005; Henson and Roberts, 2006; Kahn, 2006; Worthington and Whittaker, 2006; Hair et al., 2019). However, there are also authors who mention minimum ratios of 5:1 (Henson and Roberts, 2006; Hair et al., 2019) and others that mention absolute values: 50 very poor; 100 poor; 200 acceptable; 300 good (Tabachnick and Fidell, 2019).</p> <p>We followed the recommendations of mostly used in the literature (person per item ratio – 10:1)</p> <p><i>In general, there is some large agreement that larger samples are likely to result in more stable correlations among variables and will result in greater replicability of EFA outcomes. Therefore, since SASQ contained 34 items, the current study required between 340- 510 participants which fulfilled the empirical rule.</i></p>
<p>How was the data collected? Online questionnaire or paper and pencil style.</p>	<p>The data was collected using paper-and-pencil style.</p> <p>The manuscript has been amended to show this (<i>Self-administered paper-pencil SASQ questionnaires were distributed to the 543 participants at their respective clubs between March and May 2022</i>).</p>
<p>Table 2: Report Skewness and Kurtosis and missing values for each item for transparency.</p>	<p>Table 2 has been amended to include both Skewness and Kurtosis and missing values.</p>
<p>At this point, the reviewer is unable to know which items refer to which factor (Table 3)</p>	<p>Each of the four factors have been named and corresponding item question inserted: (Coach, Teammates, Family/friends, and Club).</p>
<p>How many factors did EFA extract? disclose</p>	<p>The EFA extracted 4 factors. We have provided a <i>scree plot</i> and a <i>total variance explained</i> table at the end of this document.</p>

<p>Table 3: There are several cross-loadings, how did the authors handle such cases?</p>	<p>We took two useful steps of looking for (a) correlations that were not high enough, and (ii) correlations that were high.</p> <p><i>Low correlations-</i> We visually scanned the correlation matrix and looked for correlations below 0.3, which normally should be excluded. However, this approach isn't helpful since small correlations will be significant in large samples like ours. This approach is subjective, but since data analysis is a skill, we focused more on objective approach by testing whether the correlation matrix resembled the identity matrix (this was done by visually checking the diagonal components and they were reported to be zero.</p> <p><i>High correlations-</i> High cross-loadings could be due to high multicollinearity, we therefore checked for multicollinearity by looking at the determinant of <i>R</i>-matrix. The determinant of the <i>R</i>-matrix should be greater than 0.00001 (Field, 2018). Our determinant was .001. In any case multicollinearity does not cause a problem for principal component analysis but was verified to help arrive at informed decision.</p> <p>We were also guided by the fact that SASQ questionnaire measure the same underlying dimension of “<i>social adaptability skills</i>” and we expected the dimensions to correlate with each other since the sub-components measure the same thing. We will provide two examples to support our argument: (example 1: <i>adapting to coach, teammates, club, or being away from family and friends all measure a person's overall social adaptability skill</i>. Example 2: <i>when measuring a person's overall anxiety in terms of</i></p>
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	<p><i>sub-components such as worry, intrusive thoughts, and physiological arousal</i>), there should still be moderate correlations between the variables relating to these sub-traits. Therefore, we wouldn't expect to see variables that have small correlations with each other.</p>
<p><i>Line 331</i>: Alpha for which factors? General? This needs to be clarified.</p>	<p>This has been clarified as the general alpha and included in the manuscript as follows: (<i>The general reliability static was <math>\alpha = 0.876</math>, indicating good reliability (38, 39).</i></p>
<p><i>Line 347-350</i>: This section lacks significant information regarding CFA. Report the fit indexes and cut-offs, disclose estimator selected, and report sample size calculations.</p>	<p>We have amended the section to answer the reviewers request as follows:  The analysis was conducted using AMOS version 27. The CFA is presented in route diagrams where the circles represent latent variables and the squares represent the observed variables (38, 39, 40). Two-headed arrows indicate covariance between the four latent variables, and single-headed arrows indicate the assumed direction of influence (41). Within the literature, the most used approximation indices include (Hoyle and Panter, 1995; Worthington and Whitaker, 2006; Brown, 2015) (a) the <i>absolute indices</i> referring to the degree to which the covariances implied in the model match the observed covariances through which the free parameters are estimated, and (b) <i>incremental indices</i> which refers to the degree to which the model is superior to the alternative model, usually where no covariances between variables are specified- null or independent model.  Despite reporting both the absolute and incremental indices in the current study, the CFA model was validated using the absolute indices (i.e., normalized Chi-Square- <math>X^2/df</math> and Root</p>

	<p>Mean Squared Error of Approximation-RMSEA) since an optimal fit is indicated by values close to zero. Normalized Chi-Square (<math>X^2</math>) values <math>&lt; 3.0</math> indicate reasonable adjustment (Arbuckle, 2013; Hair et al., 2019) with a value of 5.0 being the minimum acceptable (Bentler, 2002). As concerns RMSEA, values of <math>\leq 0.06</math> indicate an adequacy of the model (Hu and Bantler, 1999), but normally the most used cut-off values are (Brown, 2015; Bryne, 2016; Kline, 2016): <math>\leq 0.05</math> good fit, <math>\leq 0.08</math> acceptable fit, <math>\leq 0.10</math> indicate a mediocre fit, and <math>&gt; 0.10</math> a poor (un acceptable fit). Factor weights (FL; factor loading) were also computed with values equal to or greater (<math>\geq 0.5</math>) being accepted (26). Ideally, according to Hair et al., (2019) accepted values should be over 0.7.</p> <p><i>Sample Size Calculation:</i></p> <p>We followed the recommendations by DeVellis, 2003 of participant item ratio of 10:1 in estimating the sample size.</p>
<p><i>Line 360-365:</i> Several issues to be checked regarding model fit indexes (recommendations by Hu &amp; Bentler, 1999). Include modern approaches of model fit indices (Peugh &amp; Feldon, 2020)</p>	<p>This part has been addressed in the preceding response (part of line 347-350 response).</p> <p>Thanks for the suggestion, updates have been made.</p>
<p><i>Figure 1:</i> Several problems: (a). correlating measurement errors not acceptable as it forces the model to fit.  (b). covariances are above 1</p>	<p>Thanks for your suggestion, we have adjusted the model (Figure 1) by deleting the correlating measurement errors and re-run the <i>AMOS</i> analysis.</p> <p>This has been corrected by reporting standardized loadings. This occurred due to an</p>

<p>(c) several low factor loadings are reported</p>	<p>error on our side by reporting unstandardized values (Thanks once again for the observation).</p> <p>This occurred due to our reporting of the unstandardized values; It has since been corrected as follows (<i>Last, the latent variables for the four subscales of the SAS had nine, three, three, and two items each (Figure 1). According to the route diagram, all items show acceptable factor loads (standardized values) ranging from 0.66 to 2.74, except for teammates factor (Q12R) which had a value of 0.31. Nine elements of the coach construct had factorial loads between 1.00 and 2.74, as did the three elements of the teammates construct, which had factorial loads between 0.31 and 1.00. The three elements of the family construct ranged from 0.95 to 1.13, and the last two elements of the club construct ranged from 0.66 to 1.00.</i></p>
<p>(d). two items are insufficient to provide enough reliability and validity of the factor (Hair et al., 2019)</p>	<p>We do agree with your comment, however, we provide the following statement to support our decision:</p> <p><i>It should be noted that good practice dictates a minimum of three items per factor (Raubenheimer, (2004).). Three of the SASQ factors consisted of at least three items per factor, although the club factor had only two items. In retaining the club factor with only two items, we present the following arguments: First, there was a strong theoretical and practical reason linked to the observation that future athletes are already self-motivated to pursue their careers despite problematic challenges concerning the club. Second, our decision is supported by previous research in the psychology literature suggesting</i></p>

	<p><i>that constructs that do not have a wide domain or those that are not conceptualized as multidimensional may present single-item measures (Bergkvist &amp; Rossiter, (2007); Drolet, &amp; Morrison, (2001); Gosling et al., 2003; Winous et al., 1997). Third, a factor with two items is only considered reliable when the items are highly correlated (<math>r = 0.70</math>) but fairly uncorrelated with the other items, as was the case in the current study (Young &amp; Pearce, 2013).</i></p>
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**Rebuttal Letter (Response to reviewer)**

Thanks once again for your insights which have guided us to improve the manuscript.

<b>Question</b>	<b>Response</b>
<p>1. Did the authors reverse the negatively worded items' values, this should be clearly stated</p>	<p>Yes, we did reverse the negatively worded questions in SPSS before analysis (i.e., 1 = 6, 2 = 5, 3 = 4, 5 = 2, and lastly 6 = 1). The following phrase has been added on the manuscript: <i>-Prior to the analysis, scores of negatively worded questions were reversed.</i></p>
<p>2. Convergent validity analysis</p>	<p>Once again, thanks for raising the issue; We have carried a CV analysis and additional paragraphs added on the manuscript. Since we had to use the criterion values in reporting the CV. The literature reports no consensus as regards the best criterion. Several studies have reported different values with some reporting either “low” or “high” CV while criterion between <math>r = .28</math> and <math>r = .75</math> being accepted. <i>Results</i> The measures of family and club constructs (<b>0.761</b> and <b>0.732</b>) respectively reported high convergent validity. In contrast, both the</p>

	<p>measures of coach and teammates constructs (<b>0.631</b> and <b>0.657</b>) respectively reported average or modest convergent validity.</p> <p>The following paragraph has been added to the manuscript to argue for the debatable CV criterion levels:</p> <p><i>Convergent validities above <math>r = .70</math> are recommended, whereas those below <math>r = .50</math> should be avoided (Carlson et al., 2012). However, research evidence suggests that actual levels of convergent validity in psychology research still vary widely (Carlson et al., 2012). Therefore, without more specific guidance, researchers reach logically inconsistent conclusions, arguing that a convergent validity as low as <math>r = .28</math> (e.g., Larraza-Kintana, Wiseman-Meija &amp; Welbourne, 2007) indicates the measures converge, whereas others report convergent analysis as high as <math>r = .75</math> (e.g., Podsakoff, Whiting, Podsakoff &amp; Baume, 2018) signalling high convergence.</i></p>
<p>3. Discriminant validity analysis not mentioned</p>	<p>-Thanks for the comment;</p> <p>We have now performed a discriminant validity analysis using the heterotrait-monotrait ratio of correlations (HTMT) as a new approach to assess discriminant validity in variance-based SEM (Henseler, Ringle &amp; Sarstedt, 2015). This is due to the fact that recent research suggests that the routinely used Fornell-Larcker criterion is not effective under certain circumstances of discriminant validity testing (Henseler et al. 2014).</p>

	<p>-HTMT procedure can be assessed through two ways (i) as a criterion, and (ii) a statistical test. We chose the latter due to the following reasons: (a) predefined criterion thresholds are debatable (Clark &amp; Watson, 1995; Kline, 2016), and (b) statistical test involves bootstrapping which allows for constructing confidence intervals and also reducing familywise error rate.</p> <p><i>Results</i></p> <p>The computations yields values between (0.661 and 0.849) (Table 4). Upon comparing if the CI result value (one) falls outside the interval range, it can be reported that all the four constructs are empirically distinct.</p>
Additional remarks	<p>-First, it is important to note that the elimination of items purely on statistical grounds can have adverse consequences for the construct measures' such as discriminant and convergence validity (e.g., Hair et al. 2014). Therefore, researchers should carefully scrutinize the scales (either based on prior research results, or on those from a pretest in case of the newly developed measures) and determine whether all the construct domain facets have been captured.</p> <p>-Second, it is important to note, however, that discriminant validity is not exclusively an empirical means to validate a model.</p> <p>Theoretical foundations and arguments should provide reasons for constructs correlating or not (Bollen and Lennox 1991). : a construct should rather be viewed as “something created from the empirical data which is intended to enable empirical testing of propositions regarding the concept” (Rigdon 2014, pp. 43–344).</p>

	<p>Consequently, any derivation of HTMT thresholds is subjective. On the other hand, concepts are partly defined by their relationships with other concepts within a nomological network, a system of law-like relationships discovered over time and which anchor each concept. Therefore, hindsight failure to establish discriminant validity between two constructs does not necessarily imply that the underlying concepts are identical, especially when follow-up research provides continued support for differing relationships with the antecedent and the resultant concepts (Bagozzi and Phillips 1982). Nevertheless, our research reported favourable discriminant validity results.</p>
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**Rebuttal Letter (Response to reviewers).**

First, we would like to thank both reviewer 1 & 2 for their insightful comments.

<b>Question:</b>	<b>Response</b>
<p>Q1. Make major changes by either:            -using formative analysis (PLS-SEM) or            -creating some sort of inventory or index to indicate extent of athlete’s adaptation.</p>	<p>In light of Reviewer 2 proposal, and having previously confirmed the SASQ factors through CFA, we further performed a predictive validity analysis on the data using Latent Class Analysis (LCA). Our justification behind applying the LCA was to complement the 17-item SASQ factorial structure previously established. In addition, LCA identified three classes of SAS (low achievers, average achievers, and high achievers) with four discriminating dimensions (i.e., coach, teammates, family, and club) which could be used to indicate the extent of athlete’s adaptation. The combination of the two methodologies constitute an exploratory sequential mixed methodology design approach to integrate social adaptability skills during athletes change from club to club. Similar mixed methodology has been previously applied with success in determining the internal and</p>

predictive validity on psychometric instrument (The Health of the Nation Outcome Scale- HoNOS) (Golay, Basterrechea et al., 2016).

In addition, the current study settled on LCA because it transcends other conventional parametric analyses (i.e., formative PLS-SEM) by relaxing the assumptions of homogeneity of variance, skewness, normal distribution, and linearity that cannot be analysed using the same conventional parametric clustering techniques (Magidson & Vermunt, 2016). The analysis was performed on Latent Gold® 6.0 (Magidson & Vermunt, 2016) with the maximum likelihood method for parameter estimation.

The LCA in the present study comprised: (a) building and classification of a cluster model (b) bootstrapping to confirm optimum fit model, and (c) predicting the precision of the optimal model using classification statistics. The optimal model was determined by comparing the fit statistics of three models (Fraley and Raftery, 1998) namely (AIC, CAIC, and BIC).

#### *Results*

Four models were fitted to the data, a three-class model differentiating between three different groups (low achievers, average achievers, and high achievers) had an optimal fit to the data (BIC = 4172.964; AIC = 3437.369; CAIC = 3642.426). The bootstrapping *p* value indicated good fit hence confirming results of CFA.

Concerns have been raised about considering psychometric measures as non-interdependent scales because the reliability of single-item scales can be legitimately questioned (Speak, Hay et al., 2015). This suggestion extends to the SASQ-17 items which cannot be considered as uncorrelated (Muncer & Speak). However, since validity implies reliability (Furr & Bacharach, 2014; Gavin, 2008) the choice of the most



<p>Choice of whether to apply reflexive or transformative analysis- PLS-SEM?</p>	<p>relevant SASQ items were based on pragmatic grounds including their predictive value for relevant outcomes. It is therefore essential to emphasize the importance of external validity when choosing the most suitable SASQ scores, some of which should be correlated or not with each other. Adequate SASQ scores should not be selected to internal validity evidence alone reason why it was deemed appropriate to apply CFA and complimented by LCA in the current study.</p> <p>It should be noted that we applied the formative PLS on our data and the results were not quite convincing (low values). Low values could have been due to residual variance. Therefore, it was deemed justified to apply the LCA instead of formative PLS.</p>
<p>Q2. Justification of unbalanced factors between 2-9 items per factor?</p>	<p>During coding, four major themes (i.e., <i>coach, teammates, family, and club</i>) emerged. Each major theme had several sub-themes (i.e., <i>coach with 8 sub-themes, teammates with 3 sub-themes, family with 4 sub-themes, and club 3 sub-themes</i>). From this presentation, it can be seen that the coach as a major theme with 8 sub-themes generated more questions as compared to the other three major themes (leading to more items on the coach factor). An excerpt from study one below provides a detailed information of each major theme and its corresponding sub-themes.</p> <p>These SAS structures were organized into four factors (i.e., <i>coach, teammates, family/friends, and club</i>). The sub-themes in relation to the coach were: <i>obeying orders, language barrier, inequality/favouritism, reduced play time, difficulty combining sports and other life domains, pressure to perform, lack of structured training, and low-level competition</i>. Sub-themes related to teammates included: <i>respect, language barrier, and negative perception of others</i>. This was followed by sub-themes related to family/friends, which included: <i>climate change, distance, language and culture shock barrier</i>.</p>

	<p>Last, club included the following sub-themes: <i>poor facilities and logistics and lack of support.</i></p>
<p>Q3: Concerns about study 1 sample size of 20 participants only).</p>	<p>First, we stopped collecting data once we reached data saturation point with no new items emerging from the themes. Our choice is supported by the following statement: <i>In accordance with the criterion of data saturation (Corbin &amp; Strauss, 2015; Holt &amp; Tamminen, 2010; Strauss &amp; Corbin, 1998; Weed, 2009) data collection and analysis were discontinued when the categories upon which the theory was built no longer producing new insights.</i></p> <p>Second, participants in study 1 were selected through purposive sampling to help achieve the study goals. <i>For example, in order to build the family theme where elite athletes encountered difficulties of being away from their family and friends, we had to recruit elite athletes who had come from overseas to play in their adopted country.</i></p> <p>For this reason, “few” participants as many as 20 were deemed enough once the data saturation point was attained.</p>
<p>Q4: Why was no attention given to exorbitant skewness on items 11 and 12?</p>	<p>Thanks for the insight,</p> <p>This was an error off omission from our part to indicate the treatment performed.</p> <p>The treatment involved-</p> <p>An appropriate transformation using a Box-cox normality plot was applied to find the transformation that approximately normalised the data. This was further verified by computing the correlation coefficient of a normal probability plot.</p> <p>The following sentence has been added on the manuscript to indicate the transformation applied-</p> <p><i>(Items 11 and 12 did not follow the normal distribution and as such, a Box-cox normality plot was applied to find a transformation that approximately normalised the</i></p>

	<p><i>data. This process was then verified by computing the correlation coefficient of a normal probability plot)</i></p>
<p>Q5: <i>Reviewers concern as regards the positive and negatively worded items on SASQ</i></p>	<p>The initial SASQ 34-item list contained a mixture of negatively (<math>N = 13</math>) and positively (<math>N = 21</math>) worded questions to minimize the danger of acquiescence bias. The phenomenon of acquiescence bias is well known since it represents participants preference to always rate on the positive side regardless of item content (Weijters et al., 2013). This was the reason why SASQ presented a mixture of both positively and negatively worded questions. In addition, some negatively worded items were confirmed in CFA.</p>
<p><b>Minor changes</b> Q6: Item justification- Expert panel. Were all items scoring below 4 deleted?</p>	<p>We take note of your comment and thank you in advance. The sentence has been corrected so that it does not give the misconception that all items that scored below 4 were deleted, it reads as follows: <i>A second expert panel was constituted and asked to follow the same procedure, and this resulted in the rewording of several items (<math>N = 25</math>) and deletion of several others (<math>N = 14</math>).</i></p>
<p>Q7: (five additional items were added). How were these developed?</p>	<p>The interviews were reviewed once again resulting into five additional items being added). The paragraph has been adjusted as follows: Items that were rated 4: <i>relevant</i> or less were discussed by the whole panel (4). At the end of this stage, some of these items were marked for deletion. A first panel review resulted in the rewording of several items (<math>N = 41</math>) due to grammatical errors and comprehension issues. A total of ten items were deleted and five additional items were added. Furthermore, the five items that were added were part of the interviews and not from the expert panel. A second expert panel was constituted and asked to follow the same procedure, and this resulted in the rewording of several items (<math>N = 25</math>) and deletion of</p>

	several others ( $N=14$ ). As a result of this stage, 36 items were included in the SASQ.
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## APPENDIX J: SAS DETAILED EDUCATIONAL INTERVENTION PROGRAM

SASQ dimension	SAS to be developed	PST program	ACT Program
<i>Coach</i>	<p>-Coach-athlete interaction skills</p> <p>-Long- and short-term goal-setting skills as concerns coach-athlete expectations.</p>	<p>(i) introducing the overall aim of the educational session.</p> <p>(ii) presentation of the central skill/s to be trained during the session.</p> <p>(iii) engaging with participants in direct experience and focused reflection on the chosen skill (group and/or individual).</p>	<p>What is acceptance? What are values? How can you manage the different situations</p> <p>-Identifying obstacles (thoughts, feelings etc).</p> <p>-Choosing an action to commit on.</p> <p>-Application of mindfulness, acceptance, and value.</p>
<i>Teammates</i>	<p>-Teammates interaction skills</p>	<p>(i) introducing the overall aim of the educational session.</p> <p>(ii) presentation of the central skill/s to be trained during the session.</p> <p>(iii) engaging with participants in direct experience and focused reflection on the chosen skill (group and/or individual).</p>	<p>-Identifying obstacles (thoughts, feelings etc).</p> <p>-Choosing an action to commit on.</p> <p>-Application of mindfulness, acceptance, and value.</p>
<i>Family/friends</i>	<p>-Skills to improve being self-disciplined despite being away from family and friends.</p> <p>-Skills to develop being autonomous despite being away from family and friends.</p>	<p>(i) introducing the overall aim of the educational session.</p> <p>(ii) presentation of the central skill/s to be trained during the session.</p>	<p>-Identifying obstacles (thoughts, feelings etc).</p> <p>-Choosing an action to commit on.</p>

		(iii) engaging with participants in direct experience and focused reflection on the chosen skill (group and/or individual).	-Application of mindfulness, acceptance, and value.
<i>Club</i>	-Skills for developing positive thinking to overcome club challenges.  -Skills for improving self-motivation and confidence to overcome club challenges.	(i) introducing the overall aim of the educational session.  (ii) presentation of the central skill/s to be trained during the session.  (iii) engaging with participants in direct experience and focused reflection on the chosen skill (group and/or individual).	-Identifying obstacles (thoughts, feelings etc).  -Choosing an action to commit on.  -Application of mindfulness, acceptance, and value.

### A detailed ACT Program

SASQ Item	Skill/s to develop	ACT Program	ACT Reflexive
Coach	Coach-athlete interaction	-Introduce and work on analysing coach-athlete interaction.  -Identify obstacles (thoughts, feelings etc) as concerns coach-athlete relationship.  -Participants to choose and commit on an action.  -Apply mindfulness & value on the action the participant committed on.	-Asking participants if/why they think coach-athlete interaction is important?  -Participants to identify past and present situations which have acted as obstacles in coach-athlete interaction. They should also note down their emotions and feelings at that particular moment.  -Participants asked to choose on an obstacle they have encountered and asked to commit through actions on removing the obstacle.  -At first, breathing exercises and meditation practices introduced. The aim is to train participants to become increasingly aware of

	<p>-Long- and short-term goal-setting skills as concerns coach-athlete expectations.</p>	<p>-Applying “acceptance” through <i>experiential exercise</i> on the action the participant committed on.</p> <p>- Introduce and work on analysing setting both long and short-term goals as concerns coach-athlete expectations.</p> <p>-Identify obstacles (thoughts, feelings etc) as concerns setting short and long-term goals as concerns coach-athlete expectations.</p> <p>-Participants to choose and commit on an action.</p>	<p>thoughts, emotions, feelings etc, and continue to change their behaviour so that they actively direct attention to, and act effectively towards improving the value of having healthy interaction with the coach.</p> <p>-Introduce “<i>the bag exercise</i>” Participants asked to carry a bag with their coach-athlete interaction experiences close to OR far from their body. The aim of the exercise is for athletes to become experientially aware of the difference between keeping difficult experiences close (<i>acceptance</i>) instead of trying to keep them out of the way (<i>avoidance</i>). -Homework/assignments, taking about 5 min to practice mindfulness.</p> <p>- Asking participants if/why they think setting both short and long-term goals are important as concerns coach-athlete expectations.</p> <p>-Participants to identify past and present situations which have acted as obstacles in keeping up with coach-athlete expectations. They should also note down their emotions and feelings at that particular moment (for example, when they had reduced play time).</p> <p>-Participants asked to choose on an obstacle they have encountered as concerns setting goals to encounter coach-athlete expectations. Participants asked to commit through actions on removing the obstacle/s.</p>
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		<p>-Apply mindfulness &amp; value on the action the participant committed on.</p> <p>-Applying “acceptance” through <i>experiential exercise</i> on the action the participant committed on.</p>	<p>(same mindfulness exercises previously applied involving breathing and meditation, same aims of mindfulness exercise as already explained above).</p> <p>Same “bag exercise” as previously described. The aims are also the same as already described in developing other skills.</p> <p>-Homework/assignments, taking about 5 min to practice mindfulness.</p>
Teammates	-Teammates interaction skills	<p>-Introduce and work on analysing teammates interaction skills.</p> <p>-Identify obstacles (thoughts, feelings etc) as concerns interaction with teammates.</p> <p>-Participants to choose and commit on an action.</p> <p>-Apply mindfulness &amp; value on the action the participant committed on.</p>	<p>-Asking participants if and why they think teammates interaction skills are important?</p> <p>-Participants to identify past and present situations which have acted as obstacles when interacting with other teammates. They should also note down their emotions and feelings at that particular moment (for example, when they could not communicate with the teammate due to language barrier).</p> <p>-Participants asked to choose on an obstacle they have encountered while interacting with teammates. Participants asked to commit through actions on removing the obstacle/s.</p> <p>(same mindfulness as previously applied involving breathing and meditation, same aims of mindfulness exercise as already explained above).</p>



		<p>-Applying “acceptance” through <i>experiential exercise</i> on the action the participant committed on.</p>	<p>Same “bag exercise” as previously described. The aims are also the same as already described in developing other skills.</p> <p>-Homework/assignments, taking about 5 min to practice mindfulness.</p>
Family/friends	<p>-Skills to improve being self-disciplined despite being away from family and friends.</p> <p>-Skills to develop being autonomous despite being away from family and friends</p>	<p>-Introduce and work on analysing skills of being self-disciplined and autonomous while being away from family and friends.</p> <p>-Identify obstacles (thoughts, feelings etc) as concerns being self-disciplined and autonomous while away from family and friends.</p> <p>-Participants to choose and commit on an action.</p> <p>-Apply mindfulness &amp; value on the action the participant committed on.</p> <p>-Applying “acceptance” through <i>experiential exercise</i> on the action the participant committed on.</p>	<p>-Asking participants if and why they think being self-disciplined and autonomous are important while away from family and friends</p> <p>-Participants to identify past and present situations which have acted as obstacles when they are away from their family and friends. They should also note down their emotions and feelings at that particular moment (for example, feeling homesick).</p> <p>-Participants asked to choose on an obstacle they have encountered while being away from family and friends. Participants asked to commit through actions on removing the obstacle/s.</p> <p>(same mindfulness exercises previously described involving breathing and meditation, same aims of mindfulness exercise as already explained above).</p> <p>Same “bag exercise” as previously described. The aims are also the same as already described in developing other skills.</p> <p>-Homework/assignments, taking about 5 min to practice mindfulness.</p>

Club	<p>-Skills for developing positive thinking to overcome club challenges.</p> <p>-Skills for improving self-motivation and confidence to overcome club challenges.</p>	<p>-Introduce and work on analysing skills for developing positive thinking and self-motivation to overcome club challenges.</p> <p>-Identify obstacles (thoughts, feelings etc) as concerns encountered at the club.</p> <p>-Participants to choose and commit on an action.</p> <p>-Apply mindfulness &amp; value on the action the participant committed on.</p> <p>-Applying “acceptance” through <i>experiential exercise</i> on the action the participant committed on.</p>	<p>-Asking participants if and why they think that positive thinking and being self-motivated are important in overcoming club challenges.</p> <p>-Participants to identify past and present situations which have acted as obstacles at the club. They should also note down their emotions and feelings at that particular moment (for example, when they felt no support from the club).</p> <p>-Participants asked to choose on an obstacle they have encountered at the club. Participants asked to commit through actions on removing the obstacle/s.</p> <p>(same mindfulness exercises previously described involving breathing and meditation, same aims of mindfulness exercise as already explained above).</p> <p>Same “bag exercise” as described previously. The aims are also the same as already described in developing other skills.</p> <p>-Homework/assignments, taking about 5 min to practice mindfulness.</p>

### A detailed Mindfulness program (part ACT)

Item	Skill/s to be developed	Resources/actions
Session 1 (10min)	-Teaching how to be in the “ <i>present moment</i> ”	Introduction/discussion of the mindfulness exercise. -Follow-up exercises and comments on how to develop focus and blocking distractions. -Homework assignment “blocking distractions”
Session 2 (10min)	-Teaching how to enter the “ <i>flow state</i> ”	Introduction/discussion of the mindfulness exercise. -Follow-up exercises/comments on how to practice mindfulness with the focus of allowing the participants to be wholly immersed in their performance or whichever mindful state they want to be in (autonomy). -Homework/assignment “practicing to become wholly immersed”
Session 3 (10min)	-Teaching on “breathing”	Introduction/discussion of the mindfulness exercise -Follow-up exercises/comment to the participants on how to increase body awareness through breathing and movement. -Homework/assignment “practicing on breathing”
Session 4 (10min)	-Teaching on how to “meditate”	Introduction/discussion of the mindfulness exercise. -Follow-up exercises/comments to the participants on how to practice meditation (for example on how to meditate (to help clear the mind) just before the game or training). -Homework/assignment “practicing mediation”

### A detailed Psychological Skills Training (PST) Program

Item	Skills to be developed	Resources/actions
Session 1	Goal-setting	Introduction/discussion on Goal-setting -Education and exercises on how to set goals using SMART method. -Homework assignment “coming up with a list of both long- and short-term goals on what you want to achieve”.
Session 2	Coping	Introduction/discussion of coping -Education and introduction to exercises on how to improve coping strategies. -Homework assignment “coming up with a list of coping strategies within different situations and how to cope”.
Session 3	Self-confidence	Introduction/discussion on self-confidence

		-Education and exercises on how to self-confidence (slow/deep breathing, progressive muscle relaxation-PMR). -Homework assignment “coming up with a list of how to improve self-confidence in various situations”.
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SASQ dimension	Example of problematic experience	Skill required	Ressources/Action	Intervention/ACT Program
<i>Coach</i>	-obeying orders -language barrier  - inequality/favouritism  Reduced play-time  Difficulty combining sports and other life domain  Pressure to perform  Lack of structured training and low-level competition	Self-discipline Interpersonal skill  Motivation/confidence, positive thinking  Goal-setting, positive thinking  Self-organization  Motivation/confidence, positive thinking.  Motivation/confidence, goal-setting	-willingness to be disciplined.  -willingness to interact with coach and support staff  -turning negative thoughts into positive energy  -willing to accept challenges (sense of involvement)  -accepting challenge to progress  -turning negative thoughts into positive energy  -Focusing on balancing between sports & life domains  -using challenges as a stepping stone towards progress	ACT program -Identifying obstacles (thoughts, feelings etc). -Choosing an action to commit on. -Application of mindfulness, acceptance, and value -Experiential exercises -Home work/assignments.

			-having knowledge of motives to participate engage in sport	
<i>Teammates</i>	-respect  -language barrier	Interpersonal skill	-respecting others and accepting that they are entitled to their opinion -willing to interact with fellow teammates	ACT program -Identifying obstacles (thoughts, feelings etc). -Choosing an action to commit on. -Application of mindfulness, acceptance, and value -Experiential exercises -Home work/assignments.
<i>Family/friends</i>	-distance -language barrier & culture shock -climate change	Self-discipline, motivation/confidence, autonomy	-taking responsibility for own development	ACT program -Identifying obstacles (thoughts, feelings etc). -Choosing an action to commit on. -Application of mindfulness, acceptance, and value -Experiential exercises

				-Home work/assignments.
<i>Club</i>	-poor facilities & logistics -lack of support	Positive thinking, motivation/confidence	-reacting to difficult times positively -willingness to step out of the comfort zone	ACT program -Identifying obstacles (thoughts, feelings etc). -Choosing an action to commit on. -Application of mindfulness, acceptance, and value -Experiential exercises -Home work/assignments.
Mindfulness				

## APPENDIX K: EXAMPLE OF AN INTERVIEW TRANSCRIPT

**Question:** If you resume your career steps, what comes into your mind in terms of adaptation?

**MF99IF:** I think the first time that I really had to adapt was when I went to Fribourg, because before I was just playing basketball near my place just for fun but on going to Fribourg, I had to change my school and I was living together with the other girls. The level also changed abruptly because we had intense training twice per day over lunch hour and in the evening.

**Question:** Were there some specific or general things that attracted you to the clubs you've played for?

**MF99IF:** I think like every time I changed club, the idea was to progress myself.

**Question:** At your first club, what was your relationship with the coach at Echallens?

**MF99IF:** In fact, my first coach was my father, he also played basketball. Our relationship on court was really good seeing that I was very motivated and had pleasure playing basketball.

**Question:** How would you describe your relationship with the 2<sup>nd</sup> coach at Echallens?

**MF99IF:** It went well also, after I just left because the level was a bit low and I wanted some higher level for challenge. I wanted more of basketball, but my leaving had nothing to do with the coach. What I can say about the coach is that he was strict, more than my dad.

**Question:** What about the relationship with the 3<sup>rd</sup> coach?

**MF99IF:** It was good also.

**Question:** How would you describe your relationship with the teammates?

**MF99IF:** The relationship was good the only thing which was different was that I was really into progressing in basketball while my other teammates were not serious, so, it's not like it created tension between us but can make you angry. In fact, I would get angry whenever we lost while others were laughing.

**Question:** You move to Fribourg, how would you describe your relationship with the first coach?

**MF99IF:** I had two coaches at the same time because I was playing for two teams, I had not fully started playing for the second league and there was also U18 which I could play in. So, there was a coach for the second league and U 18.

**Question:** With the 1<sup>st</sup> coach at second division, what was your relationship with him?

**MF99IF:** In fact, he got me scared. I knew him just from far because I used to see him when I was playing for U16, I had a lot of respect for him, he was someone who really knew basketball, so I had a lot of respect for the kind of advice he was giving, I could even go and ask for advice from him, but he still was someone good. We had a good relationship on court but off the court he was someone who was always negative. He was not the type of person to help you or support you, if it wasn't going on well, he would tell you point blank that it is not going well. He would not help with giving solutions but would just let you find it out by yourself.

**Question:** And did him not giving solutions did you adapt easily to that?

**MF99IF:** I stayed there for three years, during the first two years everything went really well and during the third year we played at the European championships, so it was at a higher level, so they brought in new players. For me it went well but it was very hard, without that encouragement, in fact when he the coach was expecting something and not everything went the way he wanted then he would get mad and didn't want anything else not even trying to support us and it's because of that that I left the team. I wasn't getting support.

**Question:** How did you manage to stay then for three good years with this coach?

**MF99IF:** I don't know how to say it but looking at it that all the other teammates had the same problem with him, so we would say that it wasn't our problem but his.

**Question:** Did the club try to intervene?

**MF99IF:** In fact, the coach had some power of decision making within the club, he was very good friends with the club's president, so they never tried to find out why we were not happy.

**Question:** How did you adapt to his playing style?

**MF99IF:** I liked his playing style because in terms of basketball he was very knowledgeable and very intelligent. It was very tactical, but he was very clear with his explanations. Honestly, I really liked it.

**Question:** Were there some coach expectations and how did you deal with them?

**MF99IF:** Seeing that we had taken part in the European championship, we had a lot of overseas players and he would let most of the times the overseas players to play while the Swiss players had less play time.



## APPENDIX L: AN EXAMPLE OF INITIAL AND FOCUSED CODING

<i>Focused coding</i>	<i>Initial Coding</i>	<i>Transcript verbatim</i>
		<b>Question:</b> If you resume your career steps, what comes into your mind in terms of adaptation?
Identifying moments	Admitting to having to adapt during transition (intense practises and higher level)	<b>MF99IF:</b> I think the first time that I really had to adapt was when I went to Fribourg, because before I was just playing basketball near my place just for fun but on going to Fribourg, I had to change my school and I was living together with the other girls. The level also changed abruptly because we had intense training twice per day over lunch hour and in the evening.
		<b>Question:</b> Were there some specific or general things that attracted you to the clubs you've played for?
Commitment to excel	Taking responsibility for self-development	<b>MF99IF:</b> I think like every time I changed club, the idea was to progress myself.
		<b>Question:</b> At your first club, what was your relationship with the coach at Echallens?
Supportive relationship	First coach was her father Admitting to good relationship	<b>MF99IF:</b> In fact, my first coach was my father, he also played basketball. Our relationship on court was really good seeing

		that I was very motivated and had pleasure playing basketball.
		<i>Question:</i> How would you describe your relationship with the 2 <sup>nd</sup> coach at Echallens?
Commitment to excel	Taking responsibility for own development in terms of harder challenges Admits to coach being strict	<i>MF99IF:</i> It went well also, after I just left because the level was a bit low and I wanted some higher level for challenge. I wanted more of basketball, but my leaving had nothing to do with the coach. What I can say about the coach is that he was strict, more than my dad.
		<i>Question:</i> What about the relationship with the 3 <sup>rd</sup> coach?
Orientation towards others Supportive relationship	Good relationship with coach	<i>MF99IF:</i> It was good also.
		<i>Question:</i> How would you describe your relationship with the teammates?
Supportive relationship Commitment to excel	Admits to good relationship with teammates Competitive from young age	<i>MF99IF:</i> The relationship was good the only thing which was different was that I was really into progressing in basketball while my other teammates were not serious, so, it's not like it created tension between us but can make you angry. In fact, I would get angry whenever we lost while others were laughing.
		<i>Question:</i> You move to Fribourg, how would you

		describe your relationship with the first coach?
		<i>MF99IF</i> : I had two coaches at the same time because I was playing for two teams, I had not fully started playing for the second league and there was also U18 which I could play in. So, there was a coach for the second league and U 18.
		<i>Question</i> : With the 1 <sup>st</sup> coach at second division, what was your relationship with him?
Emotions (feeling scared) Coach knowledge Communication Emotions Coachability in question	Feeling scared towards the coach  Admitting to having respect for the coach due to his knowledge Good relationship on court Feeling that the coach not supportive and motivating enough Feeling that coach is direct with comments and also negative outside court	<i>MF99IF</i> : In fact, he got me scared. I knew him just from far because I used to see him when I was playing for U16, I had a lot of respect for him, he was someone who really knew basketball, so I had a lot of respect for the kind of advice he was giving, I could even go and ask for advice from him, but he still was someone good. We had a good relationship on court but off the court he was someone who was always negative. He was not the type of person to help you or support you, if it wasn't going on well, he would tell you point blank that it is not going well. He would not help with giving solutions but would just let you find it out by yourself.

		<i>Question:</i> And did him not giving solutions did you adapt easily to that?
Emotions	Admits to being frustrated by not having coach motivation and support	<i>MF99IF:</i> I stayed there for three years, during the first two years everything went really well and during the third year we played at the European championships, so it was at a higher level, so they brought in new players. For me it went well but it was very hard, without that encouragement, in fact when he the coach was expecting something and not everything went the way he wanted then he would get mad and didn't want anything else not even trying to support us and it's because of that that I left the team. I wasn't getting support.
Emotions charged with frustrations	Quit the team due to prevailing circumstances	
		<i>Question:</i> How did you manage to stay then for three good years with this coach?
Supportive relationships	Admits to trying to adapt through sharing the frustration with teammates	<i>MF99IF:</i> I don't know how to say it but looking at it that all the other teammates had the same problem with him, so we would say that it wasn't our problem but his.
		<i>Question:</i> Did the club try to intervene?
Emotions charged with frustration	Feeling neglected by club, no support	<i>MF99IF:</i> In fact, the coach had some power of decision making within the club, he was very

Communication	Club not trying to understand their unhappiness	good friends with the club's president, so they never tried to find out why we were not happy.
		<i>Question:</i> How did you adapt to his playing style?
Commitment to excel Communication	Openness to coaching knowledge Coach clear with explanations	<i>MF99IF:</i> I liked his playing style because in terms of basketball he was very knowledgeable and very intelligent. It was very tactical, but he was very clear with his explanations. Honestly, I really liked it.
		<i>Question:</i> Were there some coach expectations and how did you deal with them?
Emotions Mistrust between player and coach	Frustration due to less play time Feeling of players not treated equally	<i>MF99IF:</i> Seeing that we had taken part in the European championship, we had a lot of overseas players and he would let most of the times the overseas players to play while the Swiss players had less play time.