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What Shapes Young Elite Athletes' Perception of Chances in an Environment of Great Uncertainty?

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What Shapes Young Elite Athletes' Perception of Chances in an Environment of Great Uncertainty?

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What Shapes Young Elite Athletes' Perception of Chances in an Environment of Great Uncertainty?

Verena Jung, Sascha L. Schmidt, and Benno Torgler*

Abstract: *Unrealistic optimism is a commonly observed bias in the perception of chances. In this paper, we examine whether the bias is also present among young elite soccer players (10 to 23 years old) who receive regular objective feedback through external assessments. Utilising a large unique data set of almost 1600 individuals allows us to explore the empirical validation of the ipsative theory of human behaviour. In particular, we analyse how factors such as age or experience, education, peer group performance, and the level of integration into culture exert influence over young elite athletes' perceived chance of becoming a professional player. Working with a homogeneous dataset of individuals possessing similar characteristics and professional goals allows us to control for and isolate (unobserved) factors that may shape perceptions.*

Keywords: Perception of chances, unrealistic optimism, ipsative possibility set, integration effects, soccer

JEL classification: L83, D81, D03, J15

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The contempt of risk and the presumptuous hope of success are in no period of life more active than at the age at which young people choose their professions.

Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations*

1. Introduction

A large existing body of literature indicates the tendency of individuals to overestimate the likelihood of positive events and underestimate the possibility of negative events happening to them (Frey, 1988; Frey & Heggli, 1989; Kahneman & Tversky, 1979; Seybert & Bloomfield, 2009; Weinstein, 1980). Previous literature has shown that even when people were told exactly how many others were competing (objective evidence), they did not assess their odds correctly, but instead showed a tendency to overestimate both ability and luck (Hoorens, 1995). This effect is known as unrealistic optimism or the *Lake Wobegon Effect* after Keillor's mythical community where "the men are good-looking, the women are strong, and all the children are above average", popularized in his public radio show "A Prairie Home Companion" (Keillor, 1995). Unrealistic optimism has been confirmed by a large body of literature (Catina, Swalgin, Knjaz, & Fosnes, 2005; Chang, Asakawa, & Sanna, 2001; Endo, 2007; Harris & Hahn, 2011; Hoorens, 1995; Klar, Medding, & Sarel, 1996; Ying-Ching & Raghubir, 2007). However, literature on the mechanics or factors that make individuals systematically deviate from an objective or subjective possibility set is less well developed (Hoelzl & Rustichini, 2005). Unrealistic optimism is a commonly observed, but poorly explained phenomenon (Kos & Clarke, 2001).

Unrealistic optimism is evident in many sports. For instance, young girls take up a career in dance with the goal of becoming a prima ballerina. They maintain this belief even when explicitly confronted with the fact that only very few can achieve the position of prima ballerina and the rest will face low income or even unemployment. Though these young girls dutifully listen to information on the low likelihood of their success, they are unshaken in

their excessive optimism, believing that this only holds true for the others (Frey and Heggli, 1988). Such overestimation of one's personal chances of success compared to those of others or of the average, has also been identified in professional basketball (Catina et al., 2005). Skydivers were also overconfident when asked to assess the likelihood of staying accident free (Moen & Rundmo, 2005); as were football fans in judging their team's chances of winning (Jones, 2000).

The tendency toward unrealistic optimism becomes evident at an early age, as reflected in children's professional aspirations of achieving superstar status as soccer players or rock stars and the like (Bobo, Hildreth, & Durodoye, 1998; Cook et al., 1996; Helwig, 2001). Less evidence is available identifying how unrealistic optimism *changes over time* and what happens when individuals are in a much more realistic position of achieving success. Thus far, very little empirical work exists in the field of self-evaluation of chances and even less in the specific area of elite performers, which would reveal the underlying mechanics of unrealistic optimism (Price, 2001). We want to close that gap by deriving theoretically and investigating empirically the factors that enhance or dampen unrealistic optimism.

We, therefore, use a unique data set comprising young soccer players (age between 10 and 23), who play in the Youth Academies of those German soccer clubs with men's teams competing in the professional soccer leagues (Deutsche Bundesliga). All 36 clubs that play in the first and second league are required to run a Youth Academy. In total, there were 5,760 players in these Academies during the 2009/2010 season. Our data set covers 1,593 players from 24 clubs who actively participated in the Academies during the season (41% of all the players).

These promising young Youth Academy athletes face a high level of uncertainty regarding their chances of becoming professional soccer players, even taking into account the fact that these soccer players were pre-selected and considered the best soccer players of their age in Germany. Finally, only 5% of them will eventually become professional soccer players

(DFL, 2001, 2011; Schmidt & Weiss, 2010; Schott, Becht, Laudenklos, & Pabst, 2010). These high-risk environments call into question the processes young players employ to judge their own chances of success and the factors that drive their perception of success.

In our sample, all players from the Youth Academies exhibit a strong desire to become professional players. They all face similar circumstances and risk factors. In other words, similar to the advantages of experimental design, we can hold these factors constant and check whether other factors matter. The strength of our data set is that it includes players of different ages, education levels, team success rates, and cultural origins, permitting an examination of how these factors might help explain unrealistic optimism.

2. Theoretical Foundation and Hypotheses

2.1. Deviations in the self-evaluation of chances

The general concept of overestimating the probability of positive events and underestimating the probability of negative events is not new at all (Calder & Aitken, 2008; Camerer & Lovallo, 1999; de Finetti, 1968; Dewberry, Ing, James, Nixon, & Richardson, 1990; Frey, 1988; Savage, 1954; Weinstein, 1980, 1987). It is well known that people rule out the possibility of their being a potential victim of diseases and tragic life events (Haefner & Kirscht, 1970; Harris & Hahn, 2011; Hoorens, 1995; Kirscht, Haefner, Kegeles, & Rosenstock, 1966; Kontos, 2004; Weinstein, 1980). Moreover, individuals expect that others will be affected by misfortune, but tend to think that they themselves are in a different category - one with good luck. According to Peeters et al. (1997), the positive-negative-asymmetry can be explained as an element of a bio-psychological strategy to survive in an environment with a larger potential for negative than for positive life outcomes.

Frey and Foppa (1986) explain deviations in the self-evaluation of chances in a two-stage model of human decision making: “The first and *crucial* stage determines the alternative within the possibility set known to an individual. In this phase, a great many potential

alternatives are excluded; the possibility set open to an individual shrinks. It is argued that in most cases it contains only one or few alternatives. Consequently, the second stage of decision making is comparatively unimportant: the choice *within* the (small) individually known possibility set may be analysed by the expected utility theory if one so chooses” (p. 139). However, analysis of the first stage requires an understanding of the constraints. Frey and Foppa (1986) differentiate between resource constraints (e.g., income and prices, available time, physical and mental attributes), stage of technique, standards such as codified norms, informal norms and values, and self-imposed constraints (e.g., strategic pre-commitment).

The next issue that must be addressed is the degree to which individuals know about these constraints. Frey and Foppa (1986) argue that an individual’s knowledge about his/her possibility set may diverge systematically from what would be objectively correct and may even be resistant to what is objectively happening. Thus, in addition to objective and subjective knowledge there is personal knowledge, described as: “what a particular individual takes to *apply to himself*, and which is therefore taken into consideration for his *own* behaviour. Much of what is subjectively known is not accepted for oneself” (p.147). This leads to the situation that an individual is able to systematically deny knowledge they have subjectively applied to himself/herself: “A skydiver may believe that the statistics of accidents he knows have nothing at all to do with him because *he* is careful and sticks to the rules. In the extreme, therefore, the objective and subjective knowledge seems to be irrelevant to any individual because he or she refers them to a different basis or set” (p.148). Frey and Foppa (1986) point out that the “process driving a wedge between personal knowledge on the hand, and subjective and objective knowledge on the other hand must be analyzed” (p. 150). Personal knowledge was introduced as a new category and the exploration of it has still been strongly neglected in economics.

According to Frey and Foppa (1986), the difference between subjective and personal knowledge is influenced by *control misperception* (overestimation of the degree to which one can influence outcomes) and *data misperception* (systematic bias in the selection of information). In general, both types of misperceptions hold implications for individuals' learning experience. Feedback mechanisms that should influence objective and subjective knowledge are not taken into account if personal knowledge is not affected by such information. Individuals may see themselves as belonging to a different basis or category leading to neglect objective and subjective knowledge.

Frey and Heggli (1989) were the first to apply the notion of ipsative possibility, described as “the possibility set which a *particular* individual takes to be relevant *for himself* – the *ipsative possibility set*” (p. 4). The authors differentiate overextension and underextension of the ipsative possibility set in relation to the objective possibility set. Overextension is relevant to our case and according to Frey and Heggli (1989) is especially important in the presence of uncertainty: “A tension or conflict may arise between a position desired, but not objectively feasible, and a position feasible, but not the most desirable. If such an incompatibility were typical for unintelligent persons only, or the result of an error due to disappear quickly, the incompatibility between the ipsative and the objective possibility sets would not be of much relevance. However, it is argued that such an “overextension happens in many situations for perfectly normal, rational individuals, and there is no tendency for the ipsative possibility set to converge to the objective set” (p. 5). Thus, over time, objective and subjective possibility set become more and more similar as experience of the individual grows¹. On the other hand, differences between the objective and ipsative possibility set do not necessarily decrease, but remain or even increase (Frey & Heggli, 1989).

The ipsative theory of human behavior is based on psychological regularities of human behaviour at the individual level. Frey, Foppa and Heggli were the first to describe this

¹ On the other hand, Snablie (2001) argue that intrapersonal aspects such as for example past experience shape a person's perception.

phenomenon already over two decades ago (Frey, 1988; Frey & Foppa, 1986; Frey & Heggli, 1989). Since the first theoretical reasoning, other scholars have applied the concept that individuals apply not the objective set of possibilities to themselves to conceptually explain phenomena and empirically test the applicability of the theory. For example, engagement in sports (Breuer & Wicker, 2008), sustainable and environmental actions (Hadorn, Kast, & Maier, 2002; Klöckner & Blöbaum, 2010; Sopha & Klöckner, 2011; Sutton & Tobin, 2011; Tanner, 1999; Teo & Loosemore, 2001), as well as limitations to the choice of health services by customers (Thiede, 2005) and reasons for shadow economy of countries (Torgler & Schneider, 2009), have been explained by using the ipsative theory of behaviour. Frey himself and Eichenberger applied his initial thinking to explain the failure of marriages (Frey & Eichenberger, 1996) as well as anomalies in political economy and deduct consequences for incentive mechanisms in this field (Frey & Eichenberger, 1991, 1994). Frey and Heggli (1989) use the actors and artistic professions as examples for environments where systematic over-optimism happens. The sports environment is also very similar. It is also characterized by high cost of training in terms of money, effort and time. This induces the problem that “there exist no logically compelling arguments why any particular person should believe that the average experience is relevant for him or herself. The average does indeed not apply to an individual person, and there are always counter-examples of success” (p. 8).

To our knowledge, antecedents leading to systematic over- or underextension of possibility sets by individuals have not been previously investigated. In the following, we explain young elite athlete’s perception of their chances of entering or continuing a soccer career by looking at factors that influence the overextension of their ipsative possibility set. In particular, we look at how factors such as age or experience, education, peer group performance, and the level of culture integration influence players’ perceptions of their own professional chances.

2.2. The impact of age on self-perception of chances

More information and more experience might increase objective knowledge, but may not have an impact on personal perception. We are able to measure experience through players' age, as they all started playing in the Youth Academies at about the same age. To our knowledge, there is a dearth of studies analysing experience in a homogenous group such as young elite athletes. The existing studies have explored the self-perceived ability of school children, which appears to be a key factor in the expectation of success and performance (Eccles, Wigfield, & Schiefele, 1998; Elliot & Dweck, 2007; Pintrich & Schunk, 1996; Wigfield & Eccles, 2000). Such studies usually employ cross-sectional data or longitudinal data covering the short time span of school-aged children (adolescents). Less analysis has been conducted in the field of self-perception of future chances (Watt, 2004) and virtually no studies have reviewed high performance environments such as that of our elite soccer players.

Our study offers a unique opportunity to observe the self-perception of the chances of future success, (sometimes referred to as “success expectancies” (Watt, 2004)) of young elite performers covering a relatively large age range. Generally, exploring such an age range is complicated. For example, moving from elementary to middle school interrupts children's educational career and can cause changes in self-perception (Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002). As our players face the same interruption in transitioning from elementary to middle and then to high school, but have no major changes in their athletic environment throughout their career, the effect of age on self-perception can be observed relatively *cleanly*.

According to Frey and Heggli (1989) the influence of increased experience can influence an individual's ipsative set of possibilities in two ways. On the one hand, experience can, over time, lead to a more realistic view as the individual discovers that s/he had misperceived his/her actual control or falsely interpreted available information. Experience can also lead to a higher degree of overconfidence among individuals (Griffin & Tversky, 1992). Studies in the educational context also suggest that children's self-perception of their

academic abilities tend to become more accurate as they get older (Eccles et al., 1993; Jacobs et al., 2002; Watt, 2004). This phenomenon has been explained by changes in the environment (e.g., changes of school types) and the strong overestimation of possibilities among very young children due to the lack of comparison (Eccles et al., 1993; Jacobs et al., 2002). In the area of sports, an adjustment of self-perception is due to a decreasing number of teams in schools of higher education (and fewer slots on those teams). Children who have performed well in elementary school tend to have less playing time when they enter middle and high school and have to compete with older students for one of the few spots on the school team (Jacobs et al., 2002). Hence, the researchers conclude that self-perception of their own competence decreases with age as adolescents engage more and more in social-comparative processes.

On the other hand, Frey and Heggli (1989) argue that increasing exposure to social-comparative processes does not necessarily undo individual's misperceptions of his or her chances. When individuals observe others perform strongly as well, it does not mean that they correctly interpret this new information or adjust the perception of their own chances accordingly. In a study on cognitive errors in college students, Weinstein (1980) shows, however, that even when students were given the availability of success factors for themselves and others, unrealistic optimism regarding their own chances of success was prevalent. Unrealistic optimism, therefore, decreases with social-comparative processes, but does not disappear entirely.

In our setting, none of the young players has the experience of being a professional soccer player. However, each year, the players need to pass a selection round conducted by coaches and club members who decide which players move up to the next team. Up until the age of 19 years, about two thirds make it from the one to the next team every year. The remaining spots are given to talented players from external clubs (Schott et al., 2010). Only between one and four players from the oldest youth team will make it onto a professional

team (Schmidt & Weiss, 2010). Therefore, being chosen to play on the professional team can be regarded as the final selection in a series of annual selections.

Hence, one could argue that young elite athletes will overextend their ipsative possibility set beyond the objective possibility set the more selections the players have experienced; thus, the older they are, the more positive they might be in estimating their chances of becoming a professional soccer player (higher *objective probability* of becoming professional).

However, according to Frey and Heggli (1989), a correction of the unrealistic optimism would imply that the young athletes process and apply the feedback given by their coaches to themselves. Considering that already elite athletes strive to improve their performance and to become the best in their sports, they are almost obligated to believe that they have a good chance of becoming a great soccer player. Otherwise, they arguably quit soccer or at least the demanding training regimen of a Youth Academy. We, therefore, argue that the young players listen to the feedback, but do not interpret it in a way that they should adjust their perception of chances.

This leads to our first hypothesis:

H1: Across all age groups, players are overconfident in evaluating their chances of becoming professional; their optimism in judging their chances of becoming a professional player increases the more selections they have successfully experienced.

2.3. The impact of education on self-perception of chances

Weinstein (1987) concluded that unrealistic optimism is an extremely robust phenomenon affecting everybody regardless of age, sex, education, or occupation (Weinstein, 1987). Similarly, as discussed beforehand, Frey and Heggli (1989) also stress that overestimation of

positive chances is not bound to the person's intelligence level, but rather a common phenomenon among individuals. According to previous studies, university professors who are well educated also showed unrealistic optimism, with 94 per cent of professors reporting that they were better at their jobs than their average colleagues (Cross, 1977). However, this still does not answer the question of whether more educated people are less or more affected by optimistic bias. There is still limited knowledge of the factors that drive personal knowledge. Education may lead to a reduction of control misperceptions by reducing the locus of control issues (Holt, Clark, Kreuter, & Scharff, 2000; Zimmerman, 2010) and therefore leading to a more realistic judgement how and where one is able, or not, to influence the outcome. In addition, education could also reduce data misperception by reducing systematic biases in the selection of information. Education may help to reduce likelihood of being trapped by the determinants of the personal problem and increase ability to see the distribution of the outcome of similar cases.

We often observe educational campaigns such as security training and health awareness campaigns, aimed at educating people about risks of accidents and diseases so that they take preventive measures to reduce the likelihood or impact of an accident or disease. Dziuba-Leatherman and Finkelhor (1994) have shown that boys who were part of prevention campaigns against sexual abuse were associated with a lower perceived likelihood of being a victim after the campaign than before. The authors concluded that the provided information enhanced the boys' feeling of control over the situation (Dziuba-Leatherman & Finkelhor, 1994). Preventive campaigns against breast cancer (Katapodi, Lee, Facione, & Dodd, 2004) and other health risks did not lead to more preventive actions by the participants unless they increased the level of perceived vulnerability (van der Pligt, 1998). Another study showed that women will re-enter abusive relationships unless they become aware of this risk and decrease their unrealistic optimism regarding potential abuse by their partners (Welbourn & Zemek, 2007). This underlines the importance of cognition in learning behaviour and strengthens the

point that preventive campaigns are only successful if the education about these issues leads to changes in individual perceptions and directly influences personal knowledge. Otherwise, individuals do not adjust their behaviour with more preventative action. Thus, the question emerges as to whether education closes the gap between the ipsative possibility set and the objective one. Interestingly, Moen and Rundmo (2005) found that education influenced self-perception of danger among more highly educated sub-groups. The more educated the members of the sub-group of skydivers were, the higher they judged their chances of a skydiving injury. Such results would suggest that education directly affects personal knowledge. Less educated young elite athletes overextend their ipsative possibility set beyond the objective possibility set. One reason could be that data misperception and therefore the systematic bias in the selection of information is less likely to happen among better educated individuals. Therefore, we could argue that more educated young elite soccer players are more aware of the fact that they may not achieve their goal of becoming professional. In addition, more educated athletes have lowered the opportunity costs of failing (better options in the labour market). This leads to the following hypothesis:

H2: Less educated young elite athletes are ceteris paribus more optimistic in judging their chances of becoming a professional player.

2.4. The impact of peer performance on self-perception of chances

The consecutive successes throughout the yearly selection process confirm that a player's perceptions of success could be accurate and they need not be altered or adjusted. In other words, frequent selections prove that the individual's performance is strong compared to other players who once may have been perceived to be part of their peer group. The question arises as to whether the performance of the *entire* peer group has an influence on the perception of the individual.

Soccer teams are particularly suitable for study of this aspect, as the players are organized in a natural peer or reference group - providing them with frequent contact to teammates and, thus, objective performance measurement. Previous research has shown that athletes in competing sport teams are influenced by their peers (Schaffner & Torgler, 2008; Torgler, Schmidt, & Frey, 2008).

In the context of unrealistic optimism, peer groups have been shown to influence individual's perceptions. Moen and Rundmo (2005) demonstrated a relationship between the peer group to which an individual belongs and their level of unrealistic optimism. They found that soldiers, skydivers, and firemen each judged their respective risk of being injured differently (Moen & Rundmo, 2005). Weinstein (1980) argues that individuals correct their perception towards a more realistic view when they are made aware of others' capabilities or behaviors directed to a certain goal. He concludes that awareness of the abilities of other helps cure the systematic bias in the selection of information that leads to unrealistic optimism (Weinstein, 1980). Soccer players are aware of their teammates' capabilities as they frequently train together. In the context of teams or peer groups that know each other well, competition has been found to influence self-perception of abilities: Cooperative reward structures support a more realistic view of school childrens' own capabilities, whereas competitive reward structures strengthen unrealistic optimism about own abilities (Ames, 1981). Aside from the influences peer groups have upon self-perception, peers can also influence individual behaviour. The mere presence of a peer can impact a person's risk behaviour. Gardner and Steinberg (2005) showed that participants of their study showed significantly riskier behaviour in a test environment where two peers of their age group were present than when taking the test alone (Gardner & Steinberg, 2005). The observed effect was stronger in adolescents than in older test participants.

Existing research so far does not clarify the question of whether the *performance of a peer group* affects the perception of chances of an individual or unrealistic optimism in light

of a specific goal. With respect to effects of peer group performance, Dorfman and Stephan (1984) found that members of a strongly performing group expect rewards for their efforts; which also leads to subsequent effort and even higher performance (Dorfman & Stephan, 1984). Peer group performance hence motivates individuals to make additional efforts.

When individual's misperception of data and control are viewed as key drivers of unrealistic optimism, peer performance can have different effects. First, an individual might think that the peer group's performance mirrors his own. This could lead to an underestimation of his own chances in the case of a strong individual playing in a weak team. The contrary effect could also take place when a weak individual plays in a strong team and, hence, overestimates his chances of success.

Second, the observed success of others within the same peer group, such as e.g., other players and teams in the same soccer club, shows young elite athletes the possibility of success and leads to an overextension of their ipsative possibility set beyond the objective possibility set. It creates a feeling that they can control future events (Frey & Foppa, 1986; Klein & Helweg-Larsen, 2002; McKenna, 1993), which is a cause of unrealistic optimism. Thus, we provide the following hypothesis:

H3: The better their peer or reference group's performance, the more optimistically young elite athletes will judge their chances of becoming a professional player.

2.5. The impact of cultural origin on self-perception of chances

When we think about the young soccer players' peer groups in a broader sense, their soccer teams, school classes, and families come to mind. Previous research has identified that children's self-perceptions are arguably influenced by their siblings and parents (Carr & Weigand, 2001; Frome & Eccles, 1998; Georgiou, 1999; Kandel & Andrews, 1987; Lench, Quas, & Edelstein, 2006; Morrongiello & Bradley, 1997). One apparent difference between

families of the young soccer players is their cultural origin. Recent research shows that values may not only be shaped by immediate experience (daily socialization with other people), but are also learned early in life and can be traced back to parental, grandparental values, and back even further; suggesting that they are inherited (Putnam, 1993; Uslaner, 2008; Yann & Cahuc, 2010). So far, there are hardly any studies examining people from different cultures who have grown up in a same country (Watt, 2004). As many environmental parameters are alike for all adolescents growing up in the same country, there is no necessity to control for differences in the social environment between countries. One advantage to our study is that we include data on adolescents and young adults who have lived in the same country, namely Germany, during most of their socialization phase. Hence, our setting offers a unique opportunity to generate findings on the influence of cultural origin in a similarly socialized group.

There is extensive literature discussing how cultural origin influences differences in human behaviour (Hofstede, 1983; Hofstede & Bond, 1984; Hofstede, Hofstede, & Minkov, 2010). Hofstede et al. (2010) state that culture can be defined as “the unwritten rules of the social game. It is the collective programming of the mind that distinguishes the members of one group or category of people from others” (p.6). Evidence from previous studies corroborates that self-perception can vary according to cultural origin (Catina et al., 2005; Chang et al., 2001; Gierlach, Belsher, & Beutler, 2010; Heine & Lehman, 1995; Peeters, Cammaert, & Czapinski, 1997). For example, Heine and Lehman (1995) found that Canadians showed significantly more unrealistic optimism than Japanese.

Previous studies of cultural influence on perceptions analysed subjects according to nationality and the home country in which they were socialized. Only little evidence exists on the perceptions of people who migrated from one country to another or are children of immigrants. Chang and Asakawa (2001) compared perceptions of unrealistic optimism of Japanese citizens and citizens of the United States of America who had emigrated from

Europe. They found that Japanese expected positive events more likely to occur to others than to themselves whereas the U.S. citizens believed the opposite (Chang et al., 2001). However, although the researchers were aware of the European background of the U.S. citizens, they did not comment on its influence on their perception.

Scholars in the field of cross-cultural studies concluded that, as a result of integration, individuals adopt the behavioural patterns of the culture in which they currently live (Berry, 1997). However, not only does the host country's culture have an effect on the individual, but degree of integration into the host country's culture does, too. Researchers have identified that integration reduces mortality risks, improves the individual's state of mental health (Teresa E, 1996), and has a positive effect on career success (Gilbert & Ones, 1998).

Integration can be defined as a combination of several dimensions, notably a person's *Acculturation*, *Placement*, *Interaction*, and *Identification* (Esser, 2001, 2004). *Acculturation* reflects the person's skills and ability to participate in the host country's society. *Placement* mirrors foreigners' equality in chances of attaining important positions and status in the host country. The degree to which foreigners are able to overcome ethnic boundaries and have frequent contact with people from the host country is considered in their level of *Interaction*. Finally, *Identification* measures the degree of emotional attachment a foreigner has to the host country.

We argue that people who score high in the area of *Acculturation* and *Placement* see themselves as equipped for success. They are more likely to overextend their ipsative possibility set beyond the objective possibility set and believe that they do not have disadvantages because of their cultural origin. They are expected to see themselves as in control of their future success; whereas less integrated individuals may see their chances as being more dependent upon external circumstances. Believing oneself to be the master of one's own destiny should also have a positive impact on the perception of chances in general

and on becoming a professional soccer player in particular. Moreover, perception of control over future events has been defined as a cause for unrealistic optimism (Frey & Heggli, 1989).

Given that the adoption of customs and behavioural patterns of a new culture is not binary, but a process that occurs over time (Berry, 1997; Chu & Griffey, 1985; Freeman, 2004; Nobis & Bauer, 2007), we argue that the degree of social integration into the new culture influences the level of optimism towards personal chances. This leads to the following hypothesis:

H4: The more young elite athletes are integrated into a host country's culture, the more optimistically they judge their chances of becoming a professional player.

3. Material and Methods

We use survey data from a questionnaire filled out by soccer players from Youth Academies of the clubs playing in Germany's first and second highest league. In Germany, all 36 clubs playing in first and second league are required by the German Soccer League to run a Youth Academy. In total, there were 5,760 players in the Academies in the 2009/2010 season. The survey was conducted in June and August 2010, with 91% of surveys filled out in the Academies and 9% responded via online platform. Our data set covers 1,593 players of 24 clubs who were in these centres in the 2009/2010 season, which is 41% of total players.

3.1. Dependent variable

Our dependent variable is called *Perception of Becoming Professional*, which reflects the answer given to the question "How do you estimate your chances of becoming a professional soccer player?" The answers given (very bad=0, rather bad=1, undecided=2, rather good=3 and very good=4) were coded so that the highest score reflects the highest probability stated.

3.2. Independent variables

We have the exact age of players, who are between 10 and 23 years old at the time of the survey. For the educational level of the players, we use binary variables according to the school type they attend, which mirrors their level of education. In Germany, the school system consists of several different schools. Children begin school with elementary school covering first through fourth grade, known as and represented here by the variable *Elementary School*. After fourth grade, they are separated according to their academic performance. The best students attend an eight or nine year high school in order to achieve the highest degree of secondary education. In Germany, only this degree enables students to immediately continue on to university. Attendance of the eight or nine year high school is represented by the variable *Advanced Schooling*. Students who do not perform as well in elementary school go to a six year high school after fourth grade. They receive a degree with which they can enter into apprenticeships at companies or continue schooling in order to receive the degree with university qualification. We use the variable *Intermediate Schooling* for this school type. Children who performed very poorly in elementary school attend a five year high school which we label as the variable *Basic Schooling* in our data set. After this five year high school, the students typically join companies via apprenticeships. In only few towns in Germany, all students attend the same category of high school after elementary school, a so-called comprehensive school, regardless of their performance in elementary school. For these, we use the dummy variable *Comprehensive School*.

To measure the influence of or control for the performance of the peer group to which young players belong, in our case the club environment, we use several variables. First, we use the binary variable *Pro Team First League* to indicate whether or not the professional team plays in the first league (during the 2009/2010 season) and we also use binary variables to indicate the respective club of the Youth Academy. Second, to measure the success of the

club pro team for which the young players are competing, we derive the variable *Rank Pro Team*. It measures the rank reached in the 2009/2010 season by the professional teams' respective leagues, at the time the survey was conducted. Third, we measure the performance of the respective youth teams with the variable *Rank Youth Team*, reflecting the rank achieved by a club's youth team in the German youth championship of the respective age group in the 2009/2010 season.

We also measure whether a player was born in Germany or whether he has German citizenship, using the binary variable *Born in Germany* and *German Citizenship* respectively. For non-German citizens, we follow previous work (Michalowski & Snel, 2005) and use Esser's method (Esser, 2001, 2004) to measure their level of integration. Esser's method defines integration as a construct of the dimensions *Acculturation*, *Placement*, *Interaction*, and *Identification*. Each dimension is represented by a variable based on the average of three five-point scales. We measure integration via the combined measure *Level of Integration* and explore the relevance of individual factors independently. An overview of the scales is reported in *Table A.1* in the Appendix.

An additional factor that might affect differences in perception of chances is exposure to an entrepreneurial approach and mind-set. Numerous studies have concluded that entrepreneurs show differences in risk perception and attitude compared to people who are not entrepreneurs (Alvarez & Barney, 2005; Busenitz, 1999; Cramer, Hartog, Jonker, & Van Praag, 2002). As children's attitudes can be influenced by their parents' behaviour (Bar-Tal & Guttman, 1981; Carr & Weigand, 2001; Frome & Eccles, 1998; Georgiou, 1999), so can children's perception of chances. For example, when the son of an entrepreneur observes his father's optimistic behaviour in uncertain situations such as risky business decisions, he might behave similarly optimistically. We have, therefore, included a binary variable called *Father is Entrepreneur* that reflects whether the father of a player is an entrepreneur or is engaged in self-employment.

Summary statistics and a correlation matrix are presented in *Tables A.2* and *A.3* in the Appendix. We present two models to check the robustness of the results, namely a simple OLS estimation and an ordered probit model that takes into account the ranking information of our scaled dependent variable. To measure the quantitative effect of a specific variable, we calculate the marginal effects because the equation is nonlinear. The marginal effects are computed at the multivariate point of means and indicate the change in the percentage or probability of individuals having a specific level of perception of becoming professional when the independent variable increases by one unit. For simplicity, the marginal effects in all estimates are presented for the highest value of our dependent variables only. In addition, we use Wilcoxon-Mann-Whitney Rank-Sum Test and Mean-Comparison Test to investigate the effects of different schooling types on the perception of chances.

4. Results

As mentioned, young elite soccer players have roughly a 5 per cent chance of becoming a professional soccer player (Schmidt & Weiss, 2010). When asked to judge their chances of becoming a professional soccer player, on average they responded that their chances are “rather good” on a scale from “very bad” (0) to “very good” (4). This confirmed our underlying point of departure that in general, people tend to overestimate their chances of positive events happening to them (not below 2.5 for all age categories, see *Figure 1*). Moreover, as the peak value appears at age 19 and the lowest value at age 23, we explore the non-linearity of age in a multivariate analysis (see *Table 3*). The results indicate a tendency towards an inverted U-shape. However, the average scores of perception remain quite high and remain in the range between 2.5 and 3.0, except for the athletes of 23 years of age. The non-linearity is supported in the multivariate analysis except in the case when we control for team fixed effects. Thus, although we find support that athletes are on average overconfident, older cohorts (older than 19) seemed not to be more confident than the other age groups. The

oldest cohort seemed to have even the lowest perceived probability of succeeding as a professional.

Figure 1: Average Perception of Becoming Professional by Age

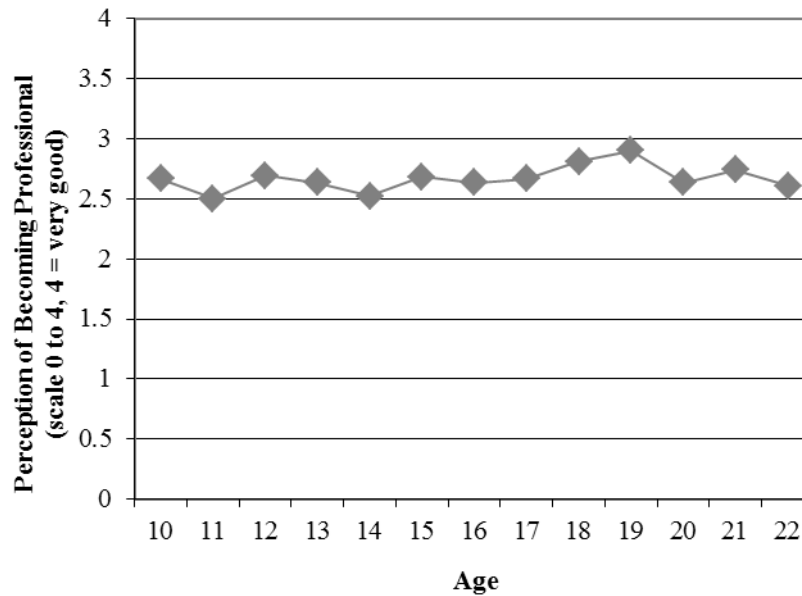


Table 1: Average Perception of Becoming Professional by Schooling Type

School Type	Perception of Chances	
	Mean	Obs
Advanced Schooling	2.592	617
Intermediate Schooling	2.659	428
Comprehensive School	2.784	134
Basic Schooling	2.828	99
Elementary School	2.852	149
Average entire population	2.673	1427

Table 1 shows the average perception according to the school type attended by players. The tendency is observable that athletes in elementary school are more optimistic. Moreover, when looking at secondary education we observe that better educated or more academically-minded athletes are less likely to perceive that they are going to succeed in becoming professional players (more sceptical). Such results are supported (see *Table 2*)

when exploring the statistically significant differences between the groups using a Wilcoxon-Mann-Whitney rank sum test and mean-comparison test. Similarly, the multivariate analysis also shows the tendency that athletes with higher levels of education (intermediate, comprehensive, and advanced schooling) are less optimistic regarding their chances, compared to athletes in basic schooling (*see Tables 3 and 4*). Advanced Schooling has the strongest negative influence on unrealistic optimism whereas Elementary Schooling has the most positive one. The analysis of marginal effects in *Table 4* indicates that being in advanced schooling decreases the probability of stating that they have very good chances of becoming professionals by 0.6 to 1.4 percentage points compared to students attending basic schooling. In sum, such results support our second hypothesis.

Table 2: Differences in Average Perception of Becoming Professional by Schooling Type – Empirical Results from Wilcoxon-Mann-Whitney Rank-Sum Test and Mean-Comparison Test

School Type	1			2			3			4		
	Obs	z-scores	ttest	Obs	z-scores	ttest	Obs	z-scores	ttest	Obs	z-scores	ttest
1 Advanced Schooling												
2 Intermediate Schooling	1045	1.59	1.409									
3 Comprehensive School	751	-2.66**	-2.635**	562	-1.636	-1.73+						
4 Basic Schooling	716	2.610**	2.833**	527	-1.735+	-2.064*	233	0.287	0.466			
5 Elementary School	766	-3.357***	-3.612***	577	-2.389*	-2.657**	283	0.707	0.735	248	-0.329	-0.230

Notes:

Null-hypothesis: The difference between the means regarding the perception of becoming professional of the respective schooling type subgroups is zero.

Z-values based on normal approximation of two-sample Wilcoxon-Mann-Whitney rank-sum test of differences in perception of becoming professional by respondent category pairs according to schooling types

The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1% and 0.1% levels, respectively.

Next, we analysed whether the professional team of the respective club is playing in the first or second professional league. We expect that the young players on the better team will be the more optimistic in their perception of success. Both our OLS multivariate analysis and the ordered probit regressions (see equations (3) through (6) in *Table 3* and equations (9) through (12) in *Table 4*) indicate that difference in perceptions between those athletes whose professional team plays in the first league and those in the second league is not statistically

significant. We observe a similar result when measuring the performance of the professional team. However, we find a fairly robust correlation between the ranking of the youth team and the perceived individual success (see equations (5) and (6) in *Table 3* and (11) and (12) in *Table 4*). The better a youth team is performing, the better its young athletes judge their own chances of becoming a professional soccer player. The likelihood that a young soccer player will state that his chances of becoming a professional soccer player are ‘very good’ instead of ‘rather good’ increases by 0.6 to 0.7 per cent per rank to which the youth team performance improves (see equations (11) and (12) in *Table 4*).

In sum, based upon our presented results we can neither reject nor support our third hypothesis stating that a better performance of the peer group reinforces the perception of chances. However, we observed that there are differences in regard to reference groups. In the athletic environment, the only group with consistent influence was the youth team to which the athletes belong and whose performance they can influence.

Table 3: Influence of Individual and Team Characteristics on Perception of Success – OLS

Regressions

<i>Dep. Variable: Perception of Becoming Professional</i>		<i>OLS</i> <i>(1)</i>	<i>OLS</i> <i>(2)</i>	<i>OLS</i> <i>(3)</i>	<i>OLS</i> <i>(4)</i>	<i>OLS</i> <i>(5)</i>	<i>OLS</i> <i>(6)</i>
Independent Variables							
Age	Coeff.	0.238**	0.161+	0.223*	0.222*	0.314**	0.307**
	St. Error	0.092	0.095	0.092	0.092	0.109	0.109
Age squared	Coeff.	-0.006*	-0.004	-.006*	-0.006*	-.009*	-0.008*
	St. Error	0.003	0.003	0.003	0.003	0.003	0.003
Advanced Schooling	Coeff.	-0.230**	-0.225**	-0.229**	-0.229**	-0.224*	-0.151
	St. Error	0.086	0.087	0.086	0.086	0.095	0.100
Intermediate Schooling	Coeff.	-0.191*	-0.173*	-0.190*	-0.190*	-0.202*	-0.135
	St. Error	0.087	0.088	0.088	0.088	0.097	0.102
Comprehensive School	Coeff.	-0.041	-0.052	-0.040	-0.039	-0.037	0.029
	St. Error	0.101	0.105	0.102	0.102	0.117	0.119
Elementary School	Coeff.	0.138	0.095	0.138	0.139	0.178	0.249+
	St. Error	0.112	0.116	0.112	0.113	0.125	0.128
Father is Entrepreneur	Coeff.	0.108*	0.102*	0.108*	0.108*	0.081	0.072
	St. Error	0.052	0.051	0.052	0.052	0.058	0.057
Born in Germany	Coeff.	-0.179*	-0.150+	-0.179*	-0.178*	-0.211*	
	St. Error	0.081	0.080	0.081	0.082	0.093	
German Citizenship	Coeff.						-0.370***
	St. Error						0.071
Pro Team in First League	Coeff.			0.060	0.063	-0.050	-0.064
	St. Error			0.047	0.050	0.072	0.071
Rank Pro Team	Coeff.				-0.001	0.002	0.003
	St. Error				0.004	0.005	0.005
Rank Youth Team	Coeff.					-0.020+	-0.023*
	St. Error					0.011	0.011
Clubs		NO	YES	NO	NO	NO	NO
N		1376	1376	1376	1376	1098	1098
R ²		0.032	0.075	0.034	0.034	0.044	0.061
Prob > F		0.000	0.000	0.000	0.000	0.000	0.000

Notes: The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1% and 0.1% levels, respectively.

Robust standard errors.

Reference Group is Basic Schooling

Table 4: Influence of Individual and Team Characteristics on Perception of Success – Ordered Probit Regressions

<i>Dep. Variable: Perception of Becoming Professional</i>		<i>Ordered Probit (7)</i>	<i>Ordered Probit (8)</i>	<i>Ordered Probit (9)</i>	<i>Ordered Probit (10)</i>	<i>Ordered Probit (11)</i>	<i>Ordered Probit (12)</i>
Independent Variables							
Age	Coef.	0.341**	0.233+	0.319*	0.318*	0.451**	0.445**
	St. Error	0.125	0.137	0.126	0.126	0.145	0.145
	Mfx	0.075	0.050	0.070	0.070	0.099	0.096
Age squared	Coef.	-0.009*	-0.006	-0.009*	-0.009*	-0.012**	-0.012**
	St. Error	0.004	0.004	0.004	0.004	0.004	0.004
	Mfx	-0.002	-0.001	-0.002	-0.002	-0.003	-0.003
Advanced Schooling	Coef.	-0.337**	-0.337**	-0.336**	-0.336**	-0.327*	-0.223
	St. Error	0.124	0.126	0.124	0.124	0.136	0.138
	Mfx	-0.014	-0.017	-0.014	-0.014	-0.008	-0.006
Intermediate Schooling	Coef.	-0.276*	-0.255*	-0.274*	-0.274*	-0.290*	-0.195
	St. Error	0.127	0.129	0.127	0.127	0.139	0.141
	Mfx	-0.057	-0.051	-0.057	-0.057	-0.060	-0.041
Comprehensive School	Coef.	-0.063	-0.078	-0.061	-0.060	-0.058	0.037
	St. Error	0.150	0.154	0.150	0.150	0.169	0.170
	Mfx	0.051	0.041	0.051	0.051	0.056	0.056
Elementary School	Coef.	0.194	0.135	0.194	0.196	0.253	0.361*
	St. Error	0.157	0.164	0.157	0.157	0.177	0.178
	Mfx	0.124	0.098	0.124	0.124	0.148	0.150
Father is Entrepreneur	Coef.	0.158*	0.154*	0.158*	0.158*	0.121	0.110
	St. Error	0.073	0.074	0.073	0.073	0.082	0.082
	Mfx	0.037	0.035	0.037	0.037	0.027	0.025
Born in Germany	Coef.	-0.259*	-0.224*	-0.260*	-0.258*	-0.308*	
	St. Error	0.111	0.113	0.111	0.111	0.127	
	Mfx	-0.064	-0.053	-0.064	-0.064	-0.077	
German Citizenship	Coef.						-0.540***
	St. Error						0.107
	Mfx						-0.143
Pro Team in First League	Coef.			0.088	0.093	-0.070	-0.091
	St. Error			0.067	0.070	0.106	0.106
	Mfx			0.019	0.019	-0.016	-0.020
Rank Pro Team	Coef.				-0.002	0.002	0.005
	St. Error				0.006	0.008	0.008
	Mfx					0.000	0.001
Rank Youth Team	Coef.					-0.028+	-0.033*
	St. Error					0.016	0.017
	Mfx					-0.006	-0.007
Clubs		NO	YES	NO	NO	NO	NO
N		1376	1376	1376	1376	1098	1098
Pseudo R ²		0.015	0.034	0.015	0.015	0.020	0.027
Prob > chi2		0.000	0.000	0.000	0.000	0.000	0.000

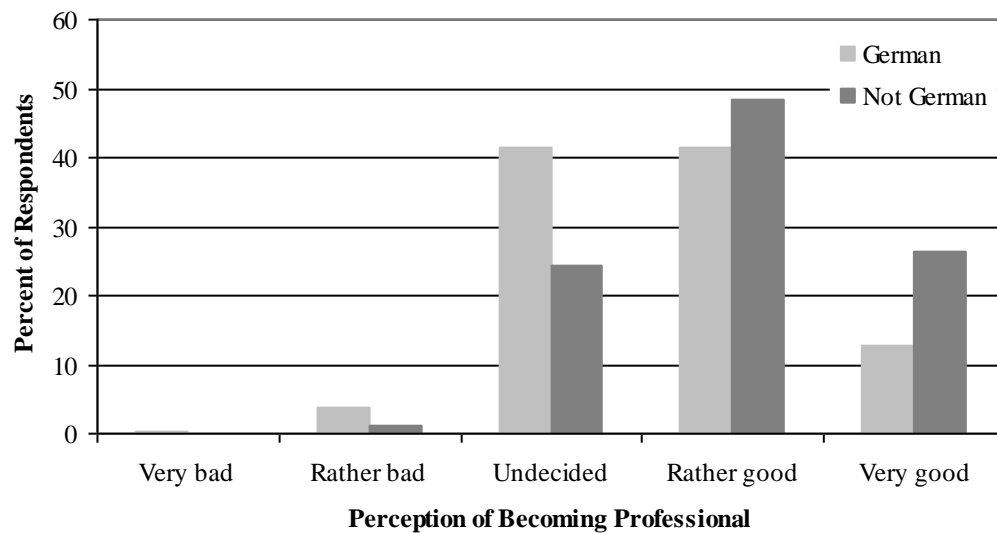
Notes: The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1% and 0.1% levels, respectively.

Marginal effects for the probability of outcome 4, Pr(y=4) are reported additionally.

Reference Group is Basic Schooling

With our fourth hypothesis, we wanted to test the influence of integration into the host country's culture and identity upon the perception of chances. In order to better understand potential differences between the young players from different cultural backgrounds, we first look at differences of perception based on their nationality.

Figure 2: Perception of Becoming Professionals by Germans and non-Germans



By doing so, our results show that, on average, young players who are not German citizens estimate their chances of becoming a professional soccer player more optimistically than those who are German citizens (see *Figure 2*). A mean-comparison test also shows that the difference is statistically significant ($t=6.19$). These results are supported by multivariate regression analyses (see equation (6) in *Table 3* and equation (12) in *Table 4*) in which the coefficient is statistically significant showing large quantitative effects. Being German rather than Non-German reduces the probability of stating that the chances of become professional are rather good instead of good by 14.3 percentage points (see equation (12) in *Table 4*). In order to get a more granular picture, we also looked at the influence of the place of birth. We observe a similar effect to the one stemming from citizenship. Young soccer players born in Germany estimate their chances of becoming a professional soccer player as significantly

lower than young athletes born outside of Germany (see equation (1) through (5) in *Table 3* and equation (7) through (11) in *Table 4*). Being born in Germany reduces the perception of chances between 5.3 to 7.7 percentage points (see equation (7) through (11) in *Table 4*).

We now discuss results that are not shown in the table. Interestingly, when we only look at young players who are not German citizens, the coefficient for being born in Germany is positive, but not statistically significant. On the other hand, for those players born outside of Germany, adopting the German nationality has a negative effect on their perception of chances. Being a German citizen seems to reduce a player's perception of chances in general, which is consistent with previously obtained results.

Our underlying assumption that the cultural context matters for unrealistic optimism is therefore supported by our results. However, differences in optimism due to culture have so far not been satisfactory identified and explained. Some researchers found tendencies, but no statistically significant differences in optimism between people from Germany and other countries (Fischer & Chalmers, 2008). Other researchers argue that detected differences have to be carefully analysed as they can be the result of several biases, such as memory bias, self-presentation, number-use, item functioning, positivity bias, and reference-group effects (Oishi, 2010)

Next, in *Table 5*, we focus only on players who are not born in Germany to explore how integration affects young players' optimism. Since we know that national identity itself seems to have an influence, we seek to understand whether the dynamic process of integration also matters. Our findings indicate that the combined integration score *Level of Integration* is not statistically significant, but is positively correlated with optimism (see equation (17) and (18) in *Table 5*).

However, when we look at the different dimensions of integration, we find that they vary in their impact on young athletes' perception of success. The dimension *Placement* bears

a statistically significant influence (see equation (13) through (24) in *Table 5*). Players who score higher in the dimension of *Placement* show a stronger tendency towards unrealistic optimism. This suggests that soccer players who estimate the chances for foreigners' success in society as better in general, also perceive their own chances as being better. When considering all dimensions of integration at the same time (see equation (21) and (22) in *Table 5*), *Placement* remains significant.

Interestingly, *Interaction* is negatively correlated with unrealistic optimism and is statistically significant when all dimensions of integration are taken into account (see equations (21) and (22) in *Table 5*). Young athletes with foreign origins seem to judge their chances of becoming a professional soccer player more negatively the more they interact and are friends with Germans.

The dimension of *Acculturation* has a positive effect on the perception of chances of the young soccer players (see equations (19) and (20) in *Table 5*). The better they master the language of the host country and know its customs and culture, the better they assess their chances.

Identification does not have a statistically significant influence on the perception of chances of the young soccer players. Neither does the aggregated score *Level of Integration* have a statistically significant effect. Hence, our hypothesis 4 can be only partially supported.

Table 5: Influence of Identity on Perception of Success for young soccer players who are not born in Germany – OLS and Ordered Probit Regressions

<i>Dep. Variable: Perception of Becoming Professional</i>		<i>OLS</i>	<i>Ordered Probit</i>	<i>OLS</i>	<i>Ordered Probit</i>	<i>OLS</i>	<i>Ordered Probit</i>	<i>OLS</i>	<i>Ordered Probit</i>	<i>OLS</i>	<i>Ordered Probit</i>	<i>OLS</i>	<i>Ordered Probit</i>
		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
Independent Variables													
Identification	Coeff.	0.025	0.033							0.016	0.029		
	St. Error	0.037	0.057							0.042	0.073		
	Mfx		0.011								0.008		
Interaction	Coeff.			-0.058	-0.110					-0.105+	-0.220+		
	St. Error			0.059	0.095					0.061	0.114		
	Mfx				-0.032						-0.064		
Placement	Coeff.					0.134**	0.202**			0.111*	0.204*		
	St. Error					0.040	0.077			0.043	0.090		
	Mfx						0.066				0.059		
Acculturation	Coeff.							0.068+	0.103+	0.041	0.077		
	St. Error							0.038	0.057	0.033	0.064		
	Mfx								0.032		0.023		
Level of Integration	Coeff.											0.021	0.033
	St. Error											0.015	0.027
	Mfx												0.010
Other variables included													
N		83		73		81		82		70		70	
R ² / Pseudo R ²		0.172	0.081	0.306	0.161	0.265	0.132	0.225	0.111	0.391	0.219	0.321	0.167
Prob > F / Prob > chi2		0.014	0.162	0.001	0.005	0.000	0.011	0.008	0.036	0.000	0.001	0.000	0.005

Notes: The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1% and 0.1% levels, respectively.

Robust standard errors.

Marginal effects for the probability of outcome 4, Pr(y=4) are reported additionally.

Reference Group is Basic Schooling

5. Discussion

The objective of our study was on the one hand to study whether unrealistic optimism is observable in a homogeneous group of high performing individuals. On the other hand, we wanted to test whether and how young elite athlete's individual decisions to enter or continue a soccer career are influenced by an overextension of their ipsative possibility set. In particular, we looked at how factors such as age or experience, education, peer/reference group performance, and the level of integration into culture exert influence over players' perceived chances of becoming a professional soccer player.

Regardless of the factors affecting individuals' perception of becoming professionals, we can state that on average these young players overestimate their chances of success. Given that only 5% of the players actually turn professional, an average estimation of evaluating their chances as rather optimistic (the average value is 2.67 on scale of 0=very bad and

4=very good). This optimistic bias persists over time despite having experienced frequent selection cycles and seeing that not many make it as a professional soccer player. It seems that unrealistic optimism cannot be *cured* with experience and repetitive assessment (see age profiles). This suggests that objective knowledge in this case seems not to influence perceptions directly, a result that could support the importance of personal knowledge and the concept of an ipsative possibility set. However, it is interesting that we observe a non-linear relationship between age and perceived level of chances of becoming professional, wherein the lowest levels of optimism was found among the oldest age category and the highest ones at the age of 19.

On the other hand, better educated secondary students seemed to be less optimistic. This suggests that education shapes personal knowledge through possible reducing misperceptions. Moreover, strong differences between primary and secondary educational levels are observable. Students in primary school are *ceteris paribus* more optimistic than secondary school students. It seems that education leads to an adjustment of the ipsative possibility set towards the objective one. Although it does not let unrealistic optimism disappear completely, we conclude that it seems to reduce systematic bias in selection of information. The more the players increase their level of education and hence their ability to process information, the more their ipsative set of possibility comes closer to the objective one. An increasing level of education seems to enhance the ability to interpret information and feedback as well as to selectively apply it to oneself.

The influence of the peer groups' performance in the soccer club is dependent on the group that is considered. Information on the performance of the professional team to which the young soccer players aspire does not have an influence on the adjustment of the ipsative possibility set. The performance of the youth team to which the players belong, influences their estimation of individual chances. The better the young players' own team performs, the more optimistically they judge their chances. Strong performance of the team whose

performance they can influence with their own performance supports unrealistic optimism among the young players. Unfortunately, we do not have the necessary information on the individual performance of the players with which to test whether it would further explain the influence of performance on the perception of chances.

In addition to the effects of age, education, and peer group performance over time, we investigated how culture and identity affects the formation of the ipsative possibility set. Our empirical results, demonstrated that cultural background influences the perception of young players with respect to their chances of becoming a professional soccer player. Being born in Germany as well as being of German citizenship significantly reduced unrealistic optimism.

Departing from the underlying belief of cultural importance, we then wanted to test effects of culture; notably, the influence of foreign players' degrees of integration into German society. The adoption of behavioural patterns of a new culture is a dynamic process. We looked at different dimensions of integration and how they make the players of foreign origin adjust their ipsative possibility set.

The dimension of *Identification* with the German culture with Germans does not have a significant impact on the self-perception of the young athletes. It does not seem to matter whether the young athletes can identify themselves with the culture of the home country or want to live there. This seems plausible, as identification with a culture alone does not seem to have a link to the self-perception of success per se.

The belief in increased equality in the society of being successful however increases unrealistic optimism. Young athletes of foreign origin are more optimistic about their chances of becoming a professional soccer player when they feel that there is little or no discrimination in the host country's society. As a consequence, the young players enlarge the set of possibilities open to them. The dimension of *Placement* which reflects these items could be regarded as an enabler.

Acculturation, which describes the degree to which foreigners possess skills, such as knowledge of the host country's culture language, can be understood in the same way. When the young athletes are of the opinion that foreigners have equal chances and prerequisites for success in general, they seem to judge their own chances of success more optimistically and apply more positive potential outcomes to themselves. The empirical results showed that the influence of *Acculturation* was statistically significant.

Moreover, frequent *Interaction* with people from the host culture does have a significant influence on the self-perception of success. Young athletes, who have many German friends, speak German with their friends, and whose family members interact with Germans frequently, also have a less optimistic view of their chances of becoming a professional soccer player. Increased interaction has hence a similar effect on the optimism of young athletes as being born in Germany. In general, people of the host country not only adopt behaviours of the host country (Berry, 1997) but may also adjust their ipsative possibility accordingly. We observed that the young athletes from Germany systematically estimate their chances less optimistically than athletes of other citizenships. Young athletes, who frequently interact with Germans, perceive their chances of success as less optimistic as well.

In sum, the dimensions of integration reflecting the belief in equality of chances and skills necessary to participate in the society showed an observable result of greater optimism in the self-perception of chances by young athletes of foreign origin.

Our findings imply that unrealistic optimism is a phenomenon that is also present among elite performers who can clearly observe the success of other individuals and are hence able to deduce their chances. Although this does not cure a systematic overextension of the ipsative set of possibilities, we were able to observe that education is able to correct the self-perception to some degree. As this is a key variable that can be influenced during the

young soccer players' development - contrary to nationality and maybe to some extent integration - it can be used to make them aware of their objective possibility set. The objective should not be to discourage them to aspire to a professional soccer career, but rather to make them aware of potential consequences in case of a likely failure. The young players should not only focus on soccer, but also earn a decent academic degree to be able to continue with a satisfying alternative career should they not succeed in professional soccer. This should not only be in the interest of the players themselves, but in the interest of coaches, clubs, teachers, and parents, since a soccer player who fails a career in soccer without having invested enough in an alternative career can produce a burden to society and its social security system (Frank & Cook, 1995).

In conducting this study, we were able to observe perceived chances of roughly an entire generation as they tried to become a professional soccer player. Nevertheless, our findings need to be considered in light of some limitations.

First, due to its nature as a team sport, we could not control for the actual individual achievement at the time of the study. It would have been interesting to compare the perception of chances with the actual professional success in retrospect. Further research should look into this, given that other scholars have already identified evidence for differences between individuals' actions and perceptions e.g., their skills and abilities (Hoelzl & Rustichini, 2005).

Second, we only looked at male soccer players in our data set because there is no comparable structure of Youth Academies for girls' soccer. Consequently, we were not able to test for gender differences, which have been identified as one driver of perceptions in previous research (Byrnes, Miller, & Schafer, 1999; Ying-Ching & Raghubir, 2007).

Third, we only looked at young soccer players in the Youth Academies in Germany. It would be interesting to test whether our findings could be confirmed in other countries. The findings regarding integration effects should specifically analysed in other countries in order

to test the generalization of our findings. Moreover, the subject group of non-German players is relatively small. Thus, it is necessary to interpret with caution the result derived from cultural differences on uncertainty avoidance as we only have limited number of observations for many countries.

Fourth, given that the young professional players are a preselected group that might be subject to selection bias. Arguably, they show more unrealistic optimism than other children in their age group per se. This could be based on the fact that they already were selected for the Youth Academies of professional clubs; which, consequently, leads to a more optimistic view. Therefore, the given context needs to be carefully considered when applying our findings to other environments.

Fifth, given that our data comes from a single source, we tested whether our results were subject to common method bias. We employed the Harman's one-factor test (MacKenzie, Podsakoff, & Podsakoff, 2011; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The unrotated exploratory principal component factor results revealed seven factors with an eigenvalue greater than one. The major factor explained less than seventeen per cent of the variance. It was not possible to determine a single factor that accounted for the majority of covariance among variables in our data. In addition, the pattern matrix of the factor showed that not all items (variables) load higher on the first factor than on the other factors. Therefore, common method variance did not appear to be a problem in our data set.

6. Conclusion

Our findings support the idea that unrealistic optimism is present among young elite soccer players. Age has a significant impact on the view of chances of reaching the specific goal of becoming a professional player. We observe an effect of an inverted U-shape although the level of perception of chances remains at a relatively high level. A higher level of education, however, can lead to an adjustment of the ipsative possibility set towards a more objective

one. This is good news, as they might take more precautions to prepare in the event that their dream does not come true. Moreover, better educated players are better prepared for the event that they do not turn professional.

The question remains whether players who want to become professional soccer players must have unrealistic optimism as an expression of faith in their abilities as a soccer player in order to advance in their sport. Unfortunately, we were not able to collect information regarding the quality of the individual players.

Future research using panel data observing the same individuals over time could provide guidance on how perceptions change over time and would provide a better opportunity to isolate confounding factors while holding individual characteristics constant. A better exploration of the players' environment may also be of some value. It would also be worthwhile to investigate how individuals respond to personal setbacks (e.g., moving to a new place, parental divorces, problems at school, etc.). It would also be interesting to explore how culture shapes perceptions, as this study has left open the question: why do Germans have a significantly lower perceived chance of success than players from other nations?

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APPENDIX

Table A.1: Definition and items of the variable *Level of Integration*

Construct	Definition	Indicator	Scale: 0-4
Acculturation	People with foreign origin have sufficient knowledge and skills to participate in the new society. This includes for example knowledge about rules and customs in society, and language.		
		How well do you speak German?	0 = rather bad; 4 = very well
		How well do you know the German culture?	
		How well do you know the German school system?	
Placement	People with foreign origin can reach or have a good position in significant areas of society such as job and housing market, the educational and legal system.	<i>Please rate the following statements:</i>	
		I am interested in German politics and follow the news about it	0 = not at all true; 4 = totally true
		Foreigners and Germans with foreign origin are discriminated in Germany	0 = totally true; 4 = not at all true
		How well are foreigners or Germans with foreign origins integrated in German society?	0 = bad; 4 = very well
Interaction	People with foreign origin overcome ethnic boundaries when establishing social networks and relationships with e.g., their friends, partners, and neighbors.		
		How many of your friends are Germans?	0 = none; 4 = all
		How often do you speak German with your friends?	0 = never; 4 = always
		How many of your parents' and siblings' friends are German?	0 = none; 4 = all
Identification	People with foreign origin are emotionally and mentally attached to the new culture, can identify themselves with it and feel that they are part of society.	<i>To which extent do you agree with the following statements?</i>	
		I can identify myself with the German culture	0 = not at all true; 4 = totally true
		I consider myself German	
		I want to live in Germany if possible	

Table A.2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Perception of Becoming Professional	1495	2.67	0.77	0	4
Age	1519	15.92	2.55	10	23
Age squared	1519	259.80	84.08	100	529
Advanced Schooling	1446	0.44	0.50	0	1
Intermediate Schooling	1446	0.30	0.46	0	1
Comprehensive School	1446	0.09	0.29	0	1
Basic Schooling	1446	0.07	0.25	0	1
Elementary School	1446	0.10	0.31	0	1
Father is Entrepreneur	1460	0.20	0.40	0	1
Born in Germany	1519	0.91	0.28	0	1
German Citizenship	1519	0.87	0.34	0	1
Pro Team in First League	1519	0.73	0.44	0	1
Rank Pro Team	1519	9.49	4.88	1	18
Rank Youth Team	1216	4.81	2.67	1	11.5
Identification*	127	7.40	2.24	2	12
Interaction*	112	8.22	1.71	4	12
Placement*	126	6.10	1.67	2	12
Acculturation*	128	8.16	2.67	0	12
Level of Integration*	106	30.30	5.64	15	42

Notes: *only for players who are not born in Germany

Table A.3: Correlations for all players^a and players who are not born in Germany^b

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Perception of Becoming Professional	1.00													
2	Age	0.07	1.00												
3	Age squared	0.07	1.00	1.00											
4	Comprehensive School	0.06	0.00	0.00	1.00										
5	Elementary School	0.08	-0.34	-0.32	-0.10	1.00									
6	Advanced Schooling	-0.08	0.06	0.05	-0.27	-0.28	1.00								
7	Basic Schooling	0.06	0.07	0.06	-0.08	-0.09	-0.24	1.00							
8	Intermediate Schooling	-0.03	0.11	0.11	-0.21	-0.22	-0.60	-0.19	1.00						
9	Father is Entrepreneur	0.04	0.00	0.00	0.06	0.01	0.01	-0.06	-0.02	1.00					
10	Born in Germany	-0.09	-0.08	-0.08	-0.08	0.03	0.06	-0.11	0.03	0.02	1.00				
11	German Citizenship	-0.16	0.03	0.03	-0.04	0.02	0.09	-0.20	0.03	-0.01	0.32	1.00			
12	Pro Team in First League	0.03	0.01	-0.01	0.01	-0.04	0.02	0.00	0.00	0.00	0.01	0.03	1.00		
13	Rank Pro Team	0.01	-0.02	-0.02	0.02	0.05	0.00	0.00	-0.04	0.00	0.09	0.10	0.30	1.00	
14	Rank Youth Team	-0.05	-0.06	-0.06	0.03	0.00	-0.03	0.06	-0.02	0.01	-0.02	-0.08	-0.65	-0.11	1.00

^a N = 1098; all players

	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Perception of Becoming Professional	1.00																
2	Father is Entrepreneur	0.14	1.00															
3	Age	0.20	-0.06	1.00														
4	Age squared	0.19	-0.07	1.00	1.00													
5	Comprehensive School	-0.16	0.02	-0.01	-0.03	1.00												
6	Elementary School	0.10	-0.13	-0.39	-0.36	-0.11	1.00											
7	Advanced Schooling	0.04	0.04	0.08	0.07	-0.29	-0.20	1.00										
8	Basic Schooling	-0.03	-0.06	0.08	0.08	-0.20	-0.14	-0.36	1.00									
9	Intermediate Schooling	0.06	0.07	0.08	0.08	-0.23	-0.16	-0.41	-0.28	1.00								
10	Pro Team in First League	-0.03	0.14	-0.20	-0.22	-0.01	-0.07	-0.01	0.08	-0.01	1.00							
11	Rank Pro Team	-0.26	0.02	0.18	0.17	-0.01	-0.03	-0.02	-0.01	0.05	0.15	1.00						
12	Rank Youth Team	0.04	-0.18	0.00	0.00	0.15	0.04	-0.07	-0.05	-0.02	-0.62	-0.19	1.00					
13	Identification	-0.02	-0.13	0.01	0.03	0.10	-0.03	-0.11	-0.04	0.09	0.07	-0.06	-0.05	1.00				
14	Interaction	-0.12	0.11	0.00	0.00	-0.02	-0.10	0.27	-0.18	-0.06	0.23	0.01	-0.25	0.38	1.00			
15	Placement	0.29	0.15	0.01	0.02	-0.12	-0.08	0.10	-0.05	0.09	0.03	-0.13	0.10	0.25	0.21	1.00		
16	Acculturation	0.16	0.23	0.16	0.17	0.04	-0.13	0.16	-0.20	0.06	0.12	0.02	-0.11	0.14	0.32	0.25	1.00	
17	Level of Integration	0.13	0.13	0.08	0.10	0.02	-0.13	0.13	-0.18	0.08	0.16	-0.06	-0.11	0.68	0.67	0.61	0.68	1.00

^b N= 70; players who are not born in Germany