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### To improve or to compete

*Implicit theories of ability and parental behavior as determinants of achievement goals in sport*

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# **Appendix A:**

## **Items of the CNAAQ-2-NL**

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## Appendix A: Items of the CNAAQ-2-NL

### Goed worden in sport

Zou je willen aangeven in hoeverre je het met de uitspraken eens bent? Het gaat om jouw eigen mening, dus er zijn geen goede of foute antwoorden. Omcirkel het nummer dat je mening het beste weergeeft.

1 = Helemaal oneens, 2 = Oneens, 3 = Geen mening, 4 = Eens, 5 = Helemaal mee eens

1. Je hebt een bepaalde hoeveelheid talent voor sport en je kunt er weinig aan doen om dat te veranderen.
2. Zelfs als je je best doet kom je niet verder dan je persoonlijke grens in een sport.
3. Je hebt talent nodig om goed te worden in een sport.
4. Je moet hard trainen en altijd blijven leren om goed te worden in een sport.
5. Om goed te worden in een sport moet je bij je geboorte de kwaliteiten hebben meegekregen die belangrijk zijn voor die sport.
6. Als je goed wil worden in een sport moet je steeds door nieuwe ontwikkelingsfases, waarin je dingen leert en je je lichaam verder traint.
7. Hoe goed je bent in sport, zal altijd verbeteren als je eraan werkt.
8. Om goed te worden in een sport moet je talent hebben.
9. Hoeveel talent je hebt voor een sport ligt vast.
10. Om goed te worden in een sport moet je alsmaar blijven werken aan je techniek en vaardigheden.
11. Zelfs de beste sporters kunnen nog beter worden door de juiste training.
12. Iedereen heeft een maximaal haalbaar niveau in een sport, waarna je niet meer beter wordt.
13. Om goed te worden in een sport moet je alsmaar blijven oefenen en bijleren.
14. Je kan jezelf altijd verbeteren in je sport, als je daar maar hard voor wil trainen.
15. Als je je persoonlijke top bereikt in een sport dan wordt je niet meer beter, ook al blijf je trainen.
16. Hard werken is het allerbelangrijkste als je goed wil worden in een sport.
17. Inzet zal altijd zorgen voor vooruitgang in sport.
18. In sommige sporten ben je wel goed en in andere niet, daar kun je niets aan veranderen.
19. Aangeboren eigenschappen bepalen of je goed wordt in een sport.
20. Als je de top wil bereiken in een sport moet je daar genoeg talent voor hebben.
21. Ook al ben je heel goed, je kunt altijd nog beter worden door hard te trainen.

Entity Stable (Entity Onveranderlijk): 1, 2, 9, 12, 15, 18

Entity Gift (Entity Talent): 3, 5, 8, 19, 20

Incremental Learning (Incremental Leren): 4, 6, 10, 13, 16

Incremental Improvement (Incremental Verbeteren): 7, 11, 14, 17, 21

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# Summary

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## Summary

Motivation is an important psychological factor in sport, and other performance domains. Motivation influences the goals people choose, and directs behavior. To explain motivated behavior, four types of goals are distinguished: mastery-approach goals, mastery-avoidance goals, performance-approach goals, and performance-avoidance goals. People with mastery-approach goals want to develop and improve themselves, and people with mastery-avoidance goals want to avoid a decline in their performance or to avoid learning less than possible. People with performance-approach goals want to perform better than others, and people with performance-avoidance goals want to avoid performing worse than others.

Mastery-approach goals are often related to positive outcomes such as well-being and improved performance (Adie, Duda, & Ntoumanis, 2008; Van Yperen, Blaga, & Postmes, 2014). Mastery-avoidance goals, performance-avoidance goals, and performance-approach goals are often related to unwanted outcomes, such as performance anxiety, cheating, doping use, and self-handicapping (Conroy & Elliot, 2004; Elliot, Cury, Fryer, & Huguet, 2006; Ring & Kavussanu, 2018a, 2018b). People in performance situations, such as athletes, should therefore focus on mastery-approach goals, and much less on the other three types of goals.

In this dissertation, I have investigated why athletes pursue mastery goals or performance goals. To find an answer to this question I have studied whether the goal orientations of athletes are caused by their implicit theories of ability, which are their beliefs about the malleability of ability for their sport. Furthermore, I have investigated if parental behavior is related to the achievement goals of their children in sport.

Implicit theories of ability are beliefs about the possibility to develop human attributes. When people believe an ability can be developed, this is called an incremental view, or growth mindset. When people believe that an ability cannot be developed, this is called an entity view or fixed mindset. People with an incremental view are predicted to pursue mastery goals, based on their belief in the possibility to develop themselves, while people with an entity view are expected to pursue performance goals because they want to assess how much of an ability they possess by comparing themselves to others (Dweck, 1999).

Incremental and entity beliefs have been studied mostly in the context of intelligence. These studies showed that students with an incremental view were more solution-focused, more motivated and less insecure than students with an

entity view (Dweck, 1999). People also have incremental and entity beliefs about sport ability (Sarrazin et al., 1996). This could explain why some athletes are more focused on mastery goals, and others more on performance goals, and why some athletes demonstrate more persistence after setbacks than others. Studies have shown that there are similarities in how people think about ability for sport and intelligence, but also differences (Sarrazin et al., 1996). If it would be possible to change the implicit theories of ability of athletes, that could have an effect on the type of goals they pursue, and on other factors relevant for performance. However, a relatively small amount of research has been done in the sport context on the effects of implicit theories of ability.

### **This dissertation**

In this dissertation I have focused on three research goals. First, I have developed and validated a Dutch questionnaire assessing implicit theories of ability in the context of sport. Second, I have investigated if implicit theories of ability in the context of sport can be changed, and if that affects achievement goals, motivation to practice, and performance. Finally, I have investigated if there is a relation between the behavior of parents and the achievement goals of their children. In the following I will summarize my findings, and discuss their implications for both theory and practice.

### **The assessment of implicit theories of ability in sport**

In the first empirical chapter (Chapter 2) I discuss the development of a Dutch questionnaire that intends to assess implicit theories in the context of sport. First, I translated the revised version of the Conceptions of the Nature of Athletic Abilities Questionnaire (CNAAQ-2; Biddle et al., 2003) into Dutch. Next, I investigated the psychometric qualities of the Dutch questionnaire. In a first study I examined if the items could be clustered into clearly distinguishable separate factors. That turned out to be the case, but the reliability of some factors was not satisfactory, which suggests that some of the items needed clarification. In a second study, I added items to the questionnaire, and I administered the total item pool to three samples of athletes. I split the total, merged, sample into two random halves. I used the first half to explore the factor structure of the items, and to select the best items. Then I used the second half of the data to examine if the expected factor structure in the selected items could be confirmed. This turned out to be the case; a model with four first-order factors (learning, improvement, stable, and gift), and two higher-order factors (incremental and entity) was found to fit the data.

In a third study I examined the test-retest reliability, the convergent validity, and the criterion validity of the CNAAQ-2-NL. The participating athletes filled out the questionnaire twice, with a three-week interval, and also responded to items from other questionnaires, that assessed implicit theories of intelligence, ability for sport, the importance of hard work and talent for success in sport, and achievement goals in sport. The results show that the test-retest reliability of the CNAAQ-2-NL is satisfactory. The convergent validity of the CNAAQ-2-NL was also supported, but the expected relations between incremental beliefs and mastery goals, and entity beliefs and performance goals (criterion validity) were only partly supported. In Chapter 4 these relations were investigated again.

### **The possibility to change implicit theories and the effects of these changes**

In Chapter 3, I describe the effects of manipulating implicit theories on constructs that are important for performance in sport. I wanted to find out if implicit theories in sport can be influenced through the reading of a text. Furthermore, I wanted to investigate if changes in implicit theories have an effect on achievement goals, motivation to practice and performance. As far as I know, there is only one study in the sport context that demonstrates that a manipulation of implicit theories results in changes in achievement goals (Spray et al., 2006).

I did three studies with a comparable design. Participants were taken through a computer guided experiment in which they performed a task that was presented as an assessment of an ability important for success in their sport. In the incremental condition participants read a text stating that this ability can be developed, and in the entity condition participants read that the ability is fixed and determined at birth. Participants in the control condition read a neutral text. After the first round on the task all participants were told that they had performed badly. Next, they were asked to state their goal for the second round, and if they wanted to practice the task when the experiment was over. In all three experiments, I found differences between conditions in the implicit theories of participants after the manipulation. There were, however, only few effects on goal choice, motivation, and performance. In Study 1 I found that participants in the incremental condition were more motivated to practice than participants in the entity condition. In Study 2 I found that participants in the entity condition had more performance-avoidance goals than participants in the other two conditions. In Study 3 I found that participants in the incremental condition performed better than participants in the entity condition.

Because many correlational studies have shown relations between implicit theories and achievement goals in sport, it is possible that the lack of those relations in my experimental studies is related to the design of the experiment.

Apparently it is possible to influence the implicit theories of athletes without a subsequent effect on their achievement goals, motivation and performance. This could mean that the experiment is not powerful enough, that the theory is less tenable than I assumed, or that this depends on the situation.

My conclusion is that it is worthwhile to try to further enhance the experimental manipulation in the future, but also that it will not be easy to develop a manipulation that is credible for athletes. Furthermore, it seems likely that achievement goals are affected by other determinants, such as factors surrounding the athlete. In the last chapter of my dissertation I therefore investigated the role of parents.

### **Parental behavior and the achievement goals of their sporting children**

In Chapter 4 I investigated how parental behavior is related to the achievement goals of their children in sport, and if this relation is mediated by the motivational climate that parents create through their behavior. Studies show that the achievement goals of parents and their children are related (e.g., Bergin & Habusta, 2004). It seems likely that parental behavior underlies this relation, but the question is what behavior of parents is important. To find out, I asked adolescent athletes to fill out questionnaires about four types of parental behavior: autonomy support, responsiveness, behavioral control, and psychological control. They also answered questions about their own achievement goals, the parent-initiated motivational climate, and the coach-initiated motivational climate.

Autonomy support, responsiveness, and behavioral control were positively related to mastery goals through the parent-initiated mastery climate. Psychological control was positively related to performance goals through the parent-initiated performance climate. Interestingly, the achievement goals of athletes were related to the parent-initiated motivational climate, but not to the coach-initiated motivational climate. This suggests that parents have a greater impact on the achievement goals of children than sport coaches.

### **Theoretical implications**

In the first place, this dissertation shows that athletes have incremental and entity beliefs about sport ability. This had been demonstrated before, but not often with competitive athletes. In addition, I found support for a conceptual refinement of incremental and entity beliefs about sport ability into beliefs about learning, improvement, stability, and giftedness. This refinement makes it possible to investigate in more detail which thoughts about ability affect motivation, and performance in sport.



Second, while incremental and entity beliefs about intelligence are the end points of a continuum, my findings show that incremental and entity beliefs about sport ability are relatively independent. Because of this independence it is important for studies in the sport context to assess both beliefs. People might believe that both a natural giftedness for a sport, and learning and training are important to reach a high performance level in a sport.

Third, I found correlational support for the theoretical relations between implicit theories of ability and achievement goals in sport. Incremental beliefs were related to mastery goals, and entity beliefs to performance goals. However, the strength of the relations varied between my studies. This suggests that moderators possibly play a role, such as the setting in which questionnaires were filled out. The correlations were stronger when the data were gathered at the sporting venue before or after practice hours, and weaker when the data were gathered among psychology students as a part of their study requirements.

Fourth, this dissertation shows that it is possible to manipulate implicit theories through the reading of a text, but that a successful manipulation does not always result in the expected effects on dependent variables. This may mean that the manipulation in my experiment was too weak to have an effect, or that the theory about implicit theories of ability needs adjustment. Based on the findings in correlational studies, and the few effects of implicit theories that I found in my studies, the first explanations seems more likely at this moment. To be able to study the effects of implicit theories in the context of sport, the experimental paradigm needs to be strengthened.

Apart from implicit theories of ability, other variables also affect the achievement goals of athletes. I found, for example, that parental behavior was related to the achievement goals of their children. Parental behaviors such as autonomy support and responsiveness relate to children perceiving a parent-initiated mastery climate, which is in turn related to mastery goals. I also expected that parental behaviors such as psychological control and behavioral control would be related to a parent-initiated performance climate, which would in turn relate to performance goals their children. Contrary to this expectation, behavioral control turned out to relate to the perception of a parent-initiated mastery climate, which relates to mastery goals in children. Finally, a notable finding was that parents were more important for the achievement goals of their sporting children than coaches.

## **Practical implications**

The results of this dissertation show that implicit theories are also relevant in the sports domain, and that athletes differ in the extent to which they believe that sport abilities can be developed. Therefore it is useful to assess the implicit theories of athletes, for example with the CNAAQ-2-NL. However, there are still caveats to the use of the CNAAQ-2-NL because although this questionnaire turned out to be valid for scientific studies, it cannot -partly because of a lack of adequate test norms- be used for individual diagnostics yet.

The starting point for this study was the idea that it should be possible to affect the achievement goals of athletes by manipulating their implicit theories. Based on the relations that I have found between incremental beliefs and mastery goals, my advice to athletes, coaches, and parents is to convince themselves -and each other- of the idea that abilities can be developed when people put enough effort into it.

Furthermore, my advice to coaches and parents is to create a mastery climate, and to weaken a performance climate where possible. The central feature of a mastery climate is that attention is focused on the development of athletes, and not so much on winning or losing. To foster such a climate, the performance of athletes should be compared to their previous performances, and not with the performance of others. Coaches should emphasize that learning and improvement of sport ability are gradual processes. Improvement can take a lot of time, but it is very rewarding to be successful in skills after practicing them long and intensely.

After practice and competition, coaches and parents can ask about what went well, and what did not go well (yet). After matches, coaches can discuss with their athletes how certain aspects can be improved or practiced further. This way, game performance is utilized to help improve the developmental process.

The chapter about parental behavior shows that parents should support the autonomy of their child, be responsive, and have reasonable expectations of their child's behavior. These three parental behaviors are related to a parent-initiated mastery climate which in turn is related to the pursuit of mastery goals by their children in sport.

To be autonomy supportive, parents should strive to preserve the intrinsic motivation of their children by recognizing and fostering it. In addition, there are three rules of thumb for autonomy support, namely: (1) provide children with choices, (2) acknowledge their feelings (i.e., show empathy), and (3) explain why things are necessary or important (Gaudreau, et al., 2016). This explanation should

of course be of a high quality. The clearer it is that the advice benefits the child, the easier it will be accepted.

To be responsive, parents should show their interest in the experiences of their children, listen without judgement to what their child wants to tell them, and try to see the world through their child's eyes. For the right level of behavioral control parents should have reasonable expectations of the behavior of their child, which means not too high or too low. Expectations are best based on previous performances. If children perform much better than before, that is a reason for a compliment, and when they perform worse than before, it is a reason to try to find an explanation for what happened. By the way, it is also highly recommended to investigate the explanation for a good performance. That is often very enlightening, and can boost self-confidence.

Lastly, parents should refrain from using psychological control over their children. The central feature of this type of parental behavior is that parents try to control their child's thoughts, feelings, and behavior through techniques such as love withdrawal, and guilt induction. My results show that psychological control is related to a parent-initiated performance climate, which in turn is related to performance goals in sporting adolescents.

## **Conclusions**

The results of this dissertation confirm that implicit theories are related to achievement goals: incremental beliefs are related to mastery goals, and entity beliefs are related to performance goals. However, implicit theories are not the only predictor of achievement goals. The behavior, and achievement goals of important others also play an important role. Especially parents -much more than coaches- appear to influence the achievement goals of their sporting child. Future studies of sporting children and adolescents should therefore make sure to include parents.

Causal relations, such as those between implicit theories and achievement goals can only be established through controlled experiments. To date, experiments in the sports context have met with little success. The theoretically predicted relations have only been supported in correlational studies. Future work could focus on the development of other, and better experimental paradigms. Based on my experiences, I have three recommendations for future experimental studies. In the first place a task, or combination of tasks, should be used that is credible as an assessment of sport ability, so that athletes will infer their future possibilities in their sport from their performance. Second, it is advisable to include a credible failure experience in the experiment, because failure provokes

and amplifies the effects of implicit theories on dependent variables. Finally, my recommendation is to ask if participants are familiar with the concept of implicit theories in sport, so it is possible to investigate if that influences the effect of the experimental manipulation.



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# Samenvatting

(Summary in Dutch)

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## Samenvatting (Summary in Dutch)

Motivatie is een belangrijke psychologische factor in sport- en andere prestaties. Motivatie beïnvloedt het stellen van doelen en stuurt gedrag. Om gemotiveerd gedrag te verklaren worden vier soorten doelen onderscheiden: leerstreefdoelen, leervermijddoelen, prestatiestreefdoelen en prestatievermijddoelen. Mensen met leerstreefdoelen willen zichzelf ontwikkelen en beter worden en mensen met leervermijddoelen willen voorkomen dat hun prestaties achteruit gaan of dat ze minder leren dan mogelijk is. Mensen met prestatiestreefdoelen willen beter presteren dan anderen, en mensen met prestatievermijddoelen willen niet slechter presteren dan anderen.

Leerstreefdoelen zijn vaak gerelateerd aan positieve uitkomsten zoals psychologisch welzijn en verbeterde prestaties (Adie, Duda, & Ntoumanis, 2008; Van Yperen, Blaga en Postmes, 2014). Leervermijddoelen, prestatievermijddoelen en prestatiestreefdoelen zijn vaak gerelateerd aan ongewenste uitkomsten, zoals wedstrijdspanning, vals spelen, dopinggebruik en zelfhandicapping (Conroy & Elliot, 2004; Elliot, Cury, Fryer, & Huguet, 2006; Ring & Kavussanu, 2018a, 2018b). Mensen in prestatiesituaties, zoals sporters, kunnen zich daarom beter op leerstreefdoelen richten en minder op de andere drie soorten doelen.

In dit proefschrift heb ik onderzocht waarom sporters leerdoelen dan wel prestatiedoelen nastreven. Om een antwoord te vinden op die vraag heb ik onderzocht of de doeloriëntaties van sporters voortkomen uit hun impliciete overtuigingen over de ontwikkelbaarheid van hun vaardigheden (in de Engelstalige literatuur aangeduid als *implicit theories of ability* of *mindset*). Daarnaast heb ik onderzocht of het gedrag van ouders gerelateerd is aan de doeloriëntaties van hun sportende kinderen.

Impliciete overtuigingen zijn denkbeelden over de ontwikkelbaarheid van menselijke eigenschappen. Als mensen geloven dat een vaardigheid ontwikkeld kan worden dan wordt dat een ontwikkelgerichte overtuiging (in het Engels, *incremental view of growth mindset*) genoemd. Als mensen geloven dat een vaardigheid niet ontwikkeld kan worden dan wordt dat een gefixeerde overtuiging (in het Engels, *entity view of fixed mindset*) genoemd. Mensen met een ontwikkelgerichte overtuiging zullen leerdoelen nastreven vanuit hun geloof in ontwikkelbaarheid, terwijl mensen met een gefixeerde overtuiging prestatiedoelen zullen nastreven omdat ze - door zich met anderen te vergelijken - te weten willen komen hoeveel ze van een bepaalde eigenschap bezitten (Dweck, 1999).

Ontwikkelgerichte en gefixeerde overtuigingen zijn voornamelijk onderzocht met betrekking tot intelligentie. Uit dat onderzoek kwam naar voren dat leerlingen met een ontwikkelgerichte overtuiging oplossingsgerichter, gemotiveerder en minder onzeker zijn dan leerlingen met een gefixeerde overtuiging (Dweck, 1999). Mensen hebben ook ontwikkelgerichte en gefixeerde overtuigingen over hun sportvaardigheden (Sarrazin et al., 1996). Dat zou kunnen verklaren waarom sommige sporters meer gericht zijn op leerdoelen en andere meer op prestatiedoelen en waarom sommige sporters meer doorzettingsvermogen laten zien na tegenslagen dan andere. Onderzoek heeft laten zien dat er overeenkomsten zijn in hoe mensen denken over sportvaardigheden en intelligentie, maar ook verschillen (Sarrazin et al. 1996). Als het mogelijk zou zijn om de impliciete overtuigingen van sporters te veranderen dan zou dat effecten kunnen hebben op de doelen die ze nastreven en op andere prestatiebepalende factoren. In de sportcontext is echter relatief weinig onderzoek gedaan naar de effecten van impliciete overtuigingen.

### **Dit proefschrift**

In dit proefschrift heb ik mij gericht op drie onderzoeksdoelen. Allereerst heb ik een Nederlandstalige vragenlijst ontwikkeld en gevalideerd die impliciete overtuigingen in de sportcontext beoogt te meten. Ten tweede ben ik nagegaan of impliciete overtuigingen veranderd kunnen worden en of dat effect heeft op doeloriëntatie, motivatie om te oefenen en prestaties. Ten slotte heb ik onderzocht of er een verband bestaat tussen het gedrag van ouders en de doeloriëntatie van hun kinderen. Hieronder vat ik mijn bevindingen samen en bespreek ik de implicaties ervan voor wetenschap en praktijk.

### **Het meten van impliciete overtuigingen in sport**

In het eerste empirische hoofdstuk (Hoofdstuk 2) bespreek ik de ontwikkeling van een Nederlandstalige vragenlijst die impliciete overtuigingen in de sportcontext beoogt te meten. Allereerst heb ik de herziene versie van de Conceptions of the Nature of Athletic Abilities Questionnaire (CNAAQ-2; Biddle et al., 2003) in het Nederlands vertaald. Vervolgens heb ik de psychometrische kwaliteiten van die Nederlandse lijst onderzocht. In een eerste studie ben ik nagegaan of de items geclusterd konden worden tot duidelijk onderscheidbare factoren. Dat bleek het geval te zijn, maar de betrouwbaarheid van sommige factoren was nog niet optimaal, wat suggereert dat enkele items verduidelijking behoeften. In een tweede studie heb ik items aan de vragenlijst toegevoegd en deze vernieuwde lijst afgenomen bij drie groepen sporters. De data van de totale groep heb ik in twee helften opgesplitst. De eerste helft van de data heb ik gebruikt om de factorstructuur van de items te exploreren en de beste items te



selecteren. De tweede helft van de data heb ik gebruikt om na te gaan of de verwachte factorstructuur van de geselecteerde items kon worden bevestigd. Dat bleek het geval te zijn; een model met vier eerste-orde factoren (leren, verbeteren, onveranderlijk en talent) en twee hogere-orde factoren (ontwikkelgericht en gefixeerd) bleek bij de data te passen.

In een derde studie heb ik de test-hertest betrouwbaarheid, de convergente validiteit en de criterium validiteit van de CNAAQ-2-NL onderzocht. De deelnemende sporters vulden de vragenlijst twee keer in met drie weken ertussen en ze beantwoordden ook items van andere vragenlijsten, zoals impliciete overtuigingen over intelligentie en sportvaardigheden, het belang van hard werken en talent voor succes in sport en doeloriëntaties in sport. De resultaten laten zien dat de test-hertest betrouwbaarheid van de CNAAQ-2-NL in orde is. Ook de convergente validiteit van de CNAAQ-2-NL wordt ondersteund, maar de verwachte relaties tussen ontwikkelgerichte overtuigingen en leerdoelen en die tussen gefixeerde overtuigingen en prestatiedoelen (criterium validiteit) werden slechts ten dele gevonden. In Hoofdstuk 4 worden die relaties opnieuw onderzocht.

Op grond van de drie studies uit Hoofdstuk 2 kan worden gesteld dat de CNAAQ-2-NL vooralsnog bruikbaar is om impliciete overtuigingen in sport te meten.

### **Veranderbaarheid en effecten van impliciete overtuigingen**

In Hoofdstuk 3 beschrijf ik de effecten van het manipuleren van impliciete overtuigingen op prestatiebepalende factoren in sport. Ik wilde te weten komen of impliciete overtuigingen in sport te beïnvloeden zijn middels het lezen van een tekst. Daarnaast wilde ik onderzoeken of veranderingen in impliciete overtuigingen effect zouden hebben op doeloriëntatie, motivatie om te oefenen en prestaties. Voor zover mij bekend is er maar één studie in de sportcontext die laat zien dat een manipulatie van impliciete overtuigingen leidt tot veranderingen in doeloriëntaties (Spray et al., 2006).

Ik heb drie studies uitgevoerd met een vergelijkbare opzet. Deelnemers doorliepen een experiment op de computer waarbij hen verteld werd dat een computertaak een eigenschap meet die belangrijk is voor succes in hun sport. Daarbij kregen deelnemers in de ontwikkelgerichte conditie een tekst te lezen waarin gesteld werd dat de betreffende eigenschap ontwikkelbaar is en deelnemers in de gefixeerde-overtuiging conditie lazen dat de eigenschap onveranderbaar is en bij de geboorte bepaald. Deelnemers in de controleconditie lazen een neutrale tekst. Na de eerste ronde op de taak kregen

alle deelnemers te horen dat ze slecht gepresteerd hadden. Daarna werd hen gevraagd om aan te geven wat hun doel was voor de tweede poging en of ze na afloop van het experiment wilden oefenen met de taak. In alle drie de experimenten vond ik na de manipulatie verschillen tussen de condities in de impliciete overtuigingen van de deelnemers. Er waren echter maar weinig effecten op doelkeuze, motivatie en prestatie. In Studie 1 vond ik dat deelnemers in de ontwikkelgerichte-overtuiging conditie gemotiveerder waren om te oefenen dan deelnemers in de gefixeerde-overtuiging conditie. In Studie 2 vond ik dat deelnemers in de gefixeerde-overtuiging conditie meer prestatievermijddoelen stelden dan deelnemers in de andere twee condities. In Studie 3 vond ik dat deelnemers in de ontwikkelgerichte-overtuiging conditie beter presteerden dan deelnemers in de gefixeerde-overtuiging conditie.

Omdat veel correlatieve onderzoek relaties laat zien tussen impliciete overtuigingen en doeloriëntatie in sport, is het denkbaar dat het ontbreken van die relaties in mijn experimentele studies samenhangt met de opzet van het experiment. Het is kennelijk mogelijk om de impliciete overtuigingen van sporters te beïnvloeden zonder dat dit effect heeft op doeloriëntatie, motivatie en prestatie. Dit kan betekenen dat het experiment niet krachtig genoeg was, dat de theorie minder houdbaar is dan werd aangenomen, of dat dit situatie-afhankelijk is.

Ik concludeer dat het de moeite waard is om in toekomstig onderzoek de experimentele manipulatie verder te versterken, maar ook dat het niet eenvoudig zal zijn om een manipulatie voor sporters geloofwaardig te maken. Verder lijkt het waarschijnlijk dat doeloriëntatie nog door andere determinanten dan impliciete overtuigingen worden beïnvloed, zoals factoren in de omgeving van de sporter. In het laatste hoofdstuk van mijn proefschrift heb ik daarom de rol van ouders onderzocht.

### **Gedrag van ouders en de doeloriëntatie van hun sportende kinderen**

In Hoofdstuk 4 heb ik onderzocht hoe het gedrag van ouders samenhangt met de doeloriëntatie van hun sportende kinderen en of die samenhang kan worden verklaard uit het motivatieklimaat dat ouders door hun gedrag creëren. Eerder onderzoek laat zien dat doeloriëntaties van ouders en die van hun kinderen met elkaar samenhangen (e.g., Bergin & Habusta, 2004). Het lijkt aannemelijk dat het gedrag van ouders daarvoor verantwoordelijk is, maar de vraag is welke oudergedragingen belangrijk zijn. Daarom heb ik sportende jongeren vragenlijsten laten invullen over vier soorten gedrag van hun ouders, te weten: autonomie ondersteuning, responsiviteit, gedragscontrole en psychologische controle. Daarnaast beantwoordden zij vragen over hun eigen

doeloriëntaties, het motivatieklimaat dat hun ouders creëren en het motivatieklimaat dat hun coach creëert.

Autonomie ondersteuning, responsiviteit en gedragscontrole hingen positief samen met leerdoelen via het door de ouders gecreëerde leerklimate. Psychologische controle hing positief samen met prestatiedoelen via het door de ouders gecreëerde prestatieklimaat. Opvallend was dat de doeloriëntaties van de sporters samenhangen met het door de ouders gecreëerde motivatieklimaat, terwijl die samenhang er niet was met het door de coach gecreëerde motivatieklimaat. Dit suggereert dat ouders een grotere impact hebben op de doeloriëntaties van kinderen dan sportcoaches.

### **Theoretische implicaties**

Om te beginnen laat dit proefschrift zien dat sporters ontwikkelgerichte en gefixeerde overtuigingen hebben over sportvaardigheden. Dat was wel eerder aangetoond, maar nog niet vaak bij gevorderde sporters. Verder vond ik ondersteuning voor een conceptuele verfijning van ontwikkelgerichte en gefixeerde overtuigingen over vaardigheden in sport in gedachten over leren, verbeteren, onveranderlijkheid en talent. Die verdeling maakt het mogelijk om meer in detail te onderzoeken welke gedachten over vaardigheden in sport effect hebben op sportmotivatie en -prestatie.

In de tweede plaats blijkt uit mijn bevindingen dat ontwikkelgerichte of gefixeerde overtuigingen over intelligentie min of meer elkaars tegenpolen zijn, terwijl ontwikkelgerichte of gefixeerde overtuigingen over sportvaardigheden naast elkaar kunnen bestaan. Om die reden is het van belang om in sportonderzoek allebei de overtuigingen te meten. Mensen kunnen bijvoorbeeld geloven dat zowel een bepaalde natuurlijke aanleg voor sport als ook leren en training van belang zijn voor het leveren van goede sportprestaties.

Ten derde vond ik ondersteuning voor de theoretisch voorspelde relaties tussen impliciete overtuigingen en doeloriëntaties in sport. Ontwikkelgerichte overtuigingen waren gerelateerd aan leerdoelen en gefixeerde overtuigingen aan prestatiedoelen. De sterkte van de relaties varieerde echter tussen mijn studies. Dit suggereert dat moderators mogelijk een rol spelen, zoals bijvoorbeeld de setting waarin de vragenlijsten werden ingevuld. De correlaties waren sterker als de data werden verzameld op de sportlocatie rondom een training en zwakker als de data werden verzameld bij psychologiestudenten als onderdeel van hun studieverplichtingen.

In de vierde plaats laat dit proefschrift zien dat het mogelijk is om impliciete overtuigingen te manipuleren via het lezen van een tekst, maar dat een

geslaagde manipulatie niet altijd resulteert in de verwachte effecten. Dit kan betekenen dat de manipulatie in mijn experiment te zwak was om effect te sorteren of dat de theorie over impliciete overtuigingen moet worden bijgesteld. Op grond van de bevindingen van correlatieve studies en de enkele effecten van impliciete overtuigingen die ik mijn onderzoek vond, lijkt vooralsnog de eerste verklaring plausibeler. Om de effecten van impliciete overtuigingen in de sportcontext te kunnen onderzoeken moet het experimentele paradigma worden versterkt.

Naast impliciete overtuigingen blijken ook andere variabelen van invloed te zijn op de doeloriëntaties van sporters. Zo vond ik dat het gedrag van ouders samenhangt met de doeloriëntaties van hun kinderen. Door oudergedragingen zoals autonomie ondersteuning en responsiviteit ervaren kinderen een leerklimaat waardoor het stellen van leerdoelen wordt gestimuleerd. Ik verwachtte dat oudergedragingen zoals psychologische controle en gedragscontrole een prestatieklimaat zouden creëren waardoor het stellen van prestatiedoelen zou worden bevorderd. Dat bleek echter alleen het geval te zijn als ouders psychologische controle uitoefenden op hun kinderen. Gedragscontrole door ouders bleek juist samen te hangen met het ervaren van een ontwikkelgericht klimaat, waardoor kinderen geneigd zijn om leerdoelen te stellen. Tenslotte was een opvallende uitkomst dat ouders belangrijker zijn voor de doeloriëntatie van sportende jongeren dan coaches.

### **Praktische implicaties**

De resultaten van dit proefschrift laten zien dat impliciete overtuigingen inderdaad een rol spelen in sport en dat sporters verschillen in de mate waarin zij geloven dat sportvaardigheden ontwikkelbaar zijn. Het heeft dus nut om de impliciete overtuigingen van sporters te meten, zoals met de CNAAQ-2-NL. Bij het gebruik van de CNAAQ-2-NL moet echter nog wel een voorbehoud worden gemaakt want deze vragenlijst is weliswaar voldoende valide gebleken voor het doen van onderzoek, maar hij kan –mede door het ontbreken van goede normen– nog niet worden ingezet voor individuele diagnostiek.

Het startpunt voor dit onderzoek was het idee dat de doeloriëntatie van sporters beïnvloed zou kunnen worden door beïnvloeding van hun impliciete overtuigingen. Op basis van de relaties die ik heb gevonden tussen ontwikkelgerichte overtuigingen en leerdoelen is mijn advies aan sporters, coaches en ouders om zichzelf -en elkaar- ervan te overtuigen dat vaardigheden te leren zijn mits mensen zich er genoeg voor inzetten.

Verder is mijn advies aan coaches en ouders om een leerklimaat te creëren en een prestatieklimaat af te zwakken. Het centrale kenmerk van een leerklimaat is dat de aandacht uitgaat naar de ontwikkeling van sporters en niet zozeer naar winst of verlies. Om een dergelijk klimaat te bevorderen zouden prestaties van sporters vergeleken moeten worden met hun eerdere prestaties en niet met de prestaties van anderen. Verder kunnen coaches en ouders benadrukken dat het leren en verbeteren van vaardigheden in sport een geleidelijk proces is. Vooruitgang gaat soms langzaam, maar het geeft voldoening als na verloop van tijd dingen lukken waarop lang en intensief is geoefend.

Na afloop van trainingen en wedstrijden kunnen coaches en ouders vragen wat goed ging en wat (nog) niet. Coaches kunnen na wedstrijden met sporters bespreken hoe bepaalde punten verbeterd of geoefend kunnen worden. Zo worden wedstrijdprestaties in dienst gesteld van het ontwikkelproces.

Het hoofdstuk over oudergedrag laat zien dat het goed is als ouders de autonomie van hun kind ondersteunen, responsief zijn en redelijke verwachtingen hebben van het gedrag van hun kinderen. Die drie oudergedragingen hangen samen met een leerklimaat wat weer samenhangt met het stellen van leerdoelen door hun sportende kinderen.

Om de autonomie te ondersteunen is het goed als ouders de intrinsieke motivatie van hun kinderen in stand houden door die te erkennen en te stimuleren. Verder zijn er drie vuistregels voor autonomie ondersteuning, namelijk (1) bied keuzevrijheid, (2) erken gevoelens en (3) leg uit waarom bepaalde dingen nodig of belangrijk zijn (Gaudreau, et al., 2016). Die uitleg moet uiteraard van hoge kwaliteit zijn: Hoe duidelijker het is dat het advies in het belang van het kind is, hoe makkelijker het geaccepteerd wordt.

Om responsief te zijn kunnen ouders interesse tonen in de belevingswereld van het kind, luisteren naar wat het kind wil vertellen zonder daar een waardeoordeel over te vellen en proberen om de wereld te zien door de ogen van hun kind. Voor de juiste mate van gedragscontrole kunnen ouders erop letten dat ze redelijke verwachtingen hebben van het gedrag van hun kind, wat wil zeggen: niet te hoog en niet te laag. Verwachtingen kunnen het beste gebaseerd worden op eerdere prestaties. Als kinderen beduidend beter presteren dan voorheen is dat reden voor een compliment, en een minder goede prestatie is reden om te onderzoeken of daar een verklaring voor is. Overigens is het aan te bevelen om juist ook bij goede prestaties te onderzoeken waarom het goed ging. Dat is vaak leerzaam en goed voor het zelfvertrouwen.

Ten slotte zouden ouders psychologische controle moeten vermijden. Het kenmerk van dit oudergedrag is dat ouders proberen te sturen hoe hun kinderen denken, voelen en zich gedragen, waarbij ze gebruik maken van opvoedtechnieken zoals het onthouden van liefde en het opwekken van een schuldgevoel. Mijn resultaten laten zien dat psychologische controle door ouders samenhangt met een prestatieklimaat dat vervolgens weer samenhangt met prestatiedoelen bij sportende adolescenten.

## **Conclusies**

De resultaten in dit proefschrift bevestigen dat impliciete overtuigingen samenhangen met doeloriëntaties: ontwikkelgerichte overtuigingen hangen samen met leerdoelen en gefixeerde overtuigingen hangen samen met prestatiedoelen. Echter, impliciete overtuigingen zijn niet de enige bron voor het ontwikkelen van doeloriëntaties. Ook het gedrag en de oriëntaties van belangrijke anderen spelen een rol. Vooral ouders - en veel meer dan coaches - lijken invloed te hebben op de doeloriëntatie van hun sportende kind. In toekomstig onderzoek bij sportende kinderen en adolescenten mogen ouders daarom niet ontbreken.

Oorzakelijke verbanden, zoals die tussen impliciete overtuigingen en doeloriëntaties, kunnen alleen via gecontroleerde experimenten worden vastgesteld. Tot op heden zijn experimenten in de sportcontext weinig succesvol gebleken. De theoretisch veronderstelde verbanden zijn alleen in correlatief onderzoek aangetoond. Toekomstig sportonderzoek zou zich kunnen richten op het ontwikkelen van andere en betere experimentele paradigma's.

Op basis van mijn ervaringen doe ik drie aanbevelingen voor toekomstige experimentele studies. In de eerste plaats is het zaak om een taak of combinatie van taken te gebruiken die geloofwaardig is als meting van sporttalent, zodat sporters hun prestatie op de test verbinden aan hun toekomstperspectief in sport. Ten tweede is het raadzaam om een geloofwaardige faalervaring in het experiment op te nemen, omdat falen de effecten van impliciete overtuigingen oproept en versterkt. Ten slotte is mijn aanbeveling om van tevoren na te gaan of deelnemers bekend zijn met de werking van impliciete overtuigingen in sport zodat onderzocht kan worden of dat verschil maakt voor het effect van de experimentele manipulatie.



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# **About the author**

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## **About the author**

Gerald Weltevreden started studying psychology at the University of Amsterdam, and graduated cum laude at Leiden University in 1999, specializing in personality studies.

After his graduation he worked as a career counselor and trainer in the business sector. At the same time he started a sport psychology practice under the name of Weltevreden Sportpsychologie. He has worked with athletes from various sports such as basketball, swimming, speed skating and tennis.

Together with Ivo Spanjersberg he was hired in 2004 by the Dutch Tennis Federation to provide psychological skills training for the national youth selection, their parents, and their coaches. In December 2015 their book *Hits: tips for tennis parents* (in Dutch: *Slagen: tips voor tennisouders*) was published, containing advice based on their workshops with tennis parents.

Since 2004 Gerald has been a sport psychology lecturer at the University of Amsterdam. In 2010 he was asked to develop the master's track in sport and performance psychology together with Edwin van Hooft. Since then he has been coordinator of this track and teacher of the courses Advanced sport and performance psychology and Interventions in sport and performance psychology.