Development and Validation of the Attitude Towards Transgression Scale (ATTS)

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Abstract

Transgression in sport can be defined as overstepping boundaries or limits—or in other words, breaking the rules. Whether exhibited as antisocial behaviour towards teammates or opponents, aggression, or cheating, transgression in sport is widespread and a difficult problem to solve. The aim of this thesis was to contribute to the body of research seeking to understand transgression in sport by developing an effective method of measuring attitude towards rule-breaking among triathletes. The development of the attitude towards transgression scale (ATTS) began with a mixed-methods pilot study that enrolled experienced academics and triathlete participants. A methodical developmental protocol was followed, with the objective of ensuring the creation of a robust measure. For the second phase, a quantitative cross-sectional and correlational design study incorporating 126 experienced United Kingdom (UK)-based triathletes was conducted. The theory of planned behaviour (TPB) was adopted as the theoretical framework, and conceptually the ATTS corresponds to the 'attitude towards the behaviour' component of the TPB model. The study aimed to investigate and highlight potential correlations between intention (dependent variable) and attitude (the ATTS), personality, social desirability, athletic identity, and self-control, as well as subjective norm and past behaviour questions developed using the TPB item construction guidelines. For the final phase, a further 162 participants from the UK, United States (US), Canada, and Ireland were recruited. We employed the same quantitative cross-sectional and correlational design with the primary aim of re-examining the ATTS and its effectiveness. The findings suggested that one's intention was significantly predicted by attitude (ATTS), subjective norm, and past behaviour. The results (to some degree) support the TPB as the theoretical framework. It is hoped that researchers can further test the ATTS to understand its effectiveness across wider sporting contexts.

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Chapter 1

Literature Review

1.1 Overview

The following review of the current literature provides extensive insight into transgression in sport and focuses on several key areas. First, the introduction provides an overview of transgression in sport, highlighting common methods of rule-breaking and their prevalence. The review provides comprehensive details of the efforts required to enforce rules, as well as the financial burden doing so poses for those agencies responsible for maintaining the integrity of sport. The sport of triathlon was selected due to the researcher having extensive knowledge of that sporting discipline. Given the potential for variation in attitude towards rule breaking across sports (Potgieter, 2013), a single sport approach was adopted. Therefore, the review covers rule-breaking in the sport of triathlon, a multisport consisting of swimming, cycling, and running. The theoretical understanding of transgression is elaborated, providing insight into previous research and its approach to explaining transgressive behaviour in sport. The difficulties associated with asking athletes questions of sensitive nature—for instance, questions relating to doping and/or other forms of transgression in sport—are examined and discussed. The review of the current literature also focuses on socially desirable responding (SDR), which is one of the common barriers that researchers face when attempting to learn more about transgression in sport and rule-breaking in general.

Finally, the following section provides a comprehensive overview of the current thesis, highlighting its aims and objectives, as well as emphasising the necessity for further research.

1.2 Introduction

The word ‘transgression’ can be defined as overstepping boundaries or limits (Ruddock, 2016). Transgression—defined either in the legal, social, psychological, religious,

or geological sense of the word—refers in general to the process of overstepping a boundary. Etymologically, transgression has its root in the Latin verb *transgredi*, which is composed of *trans* meaning 'through' or 'the other side' and *gredi* meaning 'to go' (Haandrikman & Schipper-van Veldhoven, 2024). Whether the word is referring to a legal transgression, a civil law transgression, or a social transgression (i.e., violating what is perceived to be a social norm), the word transgression describes, fundamentally, an act that goes against a law or code of conduct (Rodriguez, 2015). The following literature review focuses on transgression in the sport of triathlon and highlights the seriousness of transgression, its implications, and its negative impact on all those involved.

Transgression in sport is widespread, extensive, and problematic for numerous reasons. First, its prevalence was highlighted in a paper by Alaranta et al. (2006) that investigated the attitudes of elite athletes towards doping. The findings suggested that 30% of those involved in the study personally knew an athlete who had used banned substances and that 15% of participants also reported that they had been offered performance-enhancing substances at some point in their lives. This study suggests how common performance-enhancing drug use really is. Notably, doping is only one of many acts of transgression commonly reported within sport; hence, the task of addressing transgression in general is inevitably, difficult. Figures provided by the International Olympic Committee (IOC) reveal that the total amount spent on anti-doping in sport amounts to £242 million each year (Butler, 2017). This includes the costs borne by all international and national federations, as well as the costs for non-Olympic and Paralympic sports. This cost encompasses the sizable task of conducting an estimated 300,000 drugs tests each year. Notably, of the £242 million spent each year, only 3.35% is allocated to research.

Whether through the use of performance-enhancing substances or other forms of transgression, rulebreakers are becoming increasingly adept at covering their tracks

(Mottram, 2022) and avoiding the repercussions associated with being caught in the act, and it is not only the athletes who are being deceitful (Mathis-Lilley, 2022). Research suggests that athletes and coaches are often complicit in their actions, with the former Austrian biathlon coach Walter Mayer, being a good example: Mayer was found guilty of selling EPO and other prohibited substances and was subsequently banned from the Olympics (Paoli, 2017). In other scenarios, athletic and university personnel have found themselves under the spotlight for covering up the actions of those attempting to cheat their way to victory in an attempt to protect their own reputations and the competitive status of their athletic programmes (Nixon, 2014). Given that transgression in sport is an issue at both the individual and institutional levels, combating the issue is complicated and difficult.

Transgression in sport is both extensive and concerning, and more needs to be done to prevent the issue from growing any further. A few possible solutions might help to remedy transgression in sport, namely prevention, punishment, and a combination of both. The current programme of research aims to take an educational approach by focusing on preventative solutions to transgression in sport. In light of the fact that one study found that 15% of athletes believed that breaking the rules was acceptable behaviour (Corbin et al., 2014), researchers need to understand these individuals from a psychological standpoint—that is, *why do some athletes believe that transgressing rules is acceptable while others do not?* To answer this question, the researcher aims to present informative content to educate athletes and potentially improve the integrity of sport.

1.3 Transgression in Triathlon

Triathlon is a multisport event that combines three completely different disciplines-swimming, cycling, and running. It is a complex sport that tests competitors' mental and physical toughness. Due to its complexity, there are a multitude of rules which govern the behaviour of competitors to ensure competition is safe and fair. All athletes should familiarise

themselves with these rules, in order to comply fully and avoid incurring a penalty for infringement. However, as with sports in general, there are the minority who either intentionally or unintentionally, violate these rules. From cutting the course and drafting (illegally riding in the slipstream of an opponent to gain an unfair advantage; Lehénaff et al., 1999), to using illegal performance-enhancing substances, as with many sports, there are many forms of cheating. According to Rutberg (2016), helmet and transition violations, as well as blocking and drafting are commonly reported examples of rule breaking in triathlon. Drafting is a technique to reduce wind resistance and conserve energy during a race. It is important to first highlight that drafting is illegal in most, but not all races. The World Triathlon has two types of races: draft-legal and non-drafting. In draft-legal races, drafting is allowed. In non-drafting races, cyclists must stay at least 10 meters behind the cyclist in front of them. Further, many drafting violations are unintentional (i.e., the athlete gets too close to the athlete in front without being aware of it). Nevertheless, race officials will treat both intentional and nonintentional drafting violations the same given their inability to know for certain the athlete's intentions. All athletes are responsible for their actions—and thus, they should do their utmost to avoid situations that might result in unintentional transgressions. Further, as drafting is so common, penalties are relatively lenient. Depending on the race, drafting will incur a time penalty of between 2 and 5-minutes. However, if an athlete continues to repeat the violation, this can lead to disqualification.

A further common rule violation within triathlon is littering outside of designated areas on the course. During the both the bike and rule section, there are drink stations at various points on the course. When an athlete takes a drink, they are only allowed to discard empty bottles and other packaging within the specified designated areas. For safety reasons, discarding litter outside of these areas is a rule violation and therefore, the athlete will be penalised accordingly. Similarly to drafting, littering violations are often unintentional. Due

to the amount of unintentional rule violations, many races now make race briefings mandatory, meaning athletes must attend the briefing prior to the race. This is done to ensure that athletes are aware of the rules, thus any rule violations cannot be responded to with mere ignorance.

The sport of triathlon is complex; there are a multitude of moving parts and therefore, there are various rules to maximise fairness and ensure athlete safety. Due to the vast amount of rules, many violations are reported (Baird, 2011; Brown, 2025; Heisler, 2025), from technical and equipment infractions, to misconduct and violating anti-doping regulations, rule violations are varied (see section 1.4: for Typology of Transgressions in Triathlon). Although rule violations are diverse, doping (i.e., use of performance enhancing substances) arguably receives the most media attention and interest from academic researchers. This is perhaps due to doping violations often receiving the most severe punishments (e.g., banned for a specified period of time or indeed, a ban for life). Anti-doping agencies such as UK Anti-Doping (UKAD) – an organisation responsible for protecting sport in the UK, often publicise their findings, meaning that when an athlete is found guilty of doping, details of the case are easily accessible to the public.

In recent years, a vast amount of research has focused on transgression in sport (Birzniece, 2015; Lippi et al., 2008; Yesalis & Bahrke, 2002). Researchers have provided crucial insights into a wide array of topics relating rule-breaking in sport; some of these areas of research are combatting doping, with a focus on medicine and science, understanding transgressive behaviour in sport, moral disengagement in competitive sport, and corruption in sports (Catlin et al., 2008; Corrion et al., 2009; Kavussanu, 2019; MacRae, 2023). As mentioned previously, the use of performance enhancing substances receives great interest from academic researchers (Gündoğdu, 2017; Docherty, 2008; Inai, 2023) – with substantial focus on doping cases and anti-doping initiatives (Gündoğdu, 2017; Docherty, 2008; Inai,

2023). While the researcher acknowledges the severity of doping violations, in comparison to many other rule violations, they seldom occur. Considering this, researchers should perhaps incorporate various and more common infractions into their investigations, thus potentially positively impacting the sport of triathlon and leading to improvements where they are required most. For instance, in relation to wetsuit violations, an experienced professional triathlete claimed that in 15-years of racing at the highest level, they had never had their wetsuit checked before the start (Heming, 2022). If this statement is indeed accurate, there are fundamental issues with enforcing rules in triathlon which need to be addressed. And while some may question the importance of addressing such concerns, others might argue that an illegal wetsuit (i.e., a wetsuit that exceeds 5mm thickness and/or it incorporates raised panels on the forearms which are designed to help catch more water with each stroke and propel the swimmer faster through the water; Heming, 2022; Shelby, 2024), 'could' potentially provide the same, if not more, advantage than doping.

In summary, there are various opportunities for athletes to gain an unfair advantage in triathlon. However, there is scant research that incorporates the variety of transgressive acts, as most research is focussed on doping. Thus, in this PhD programme of research, transgressions wider than doping are considered, a somewhat novel approach compared to the extant literature. Due to the nature of the current research programme (i.e., making considerations for various acts of rule violations), the following section will explore a typology of transgressions in triathlon.

1.4 Typology of Transgression in Triathlon

1.4.1 Introduction.

Triathlon is a complex multisport consisting of swimming, cycling, and running. Popular races include the Super Sprint: swim 400 m, bike 10 km, run 2.5 km; Sprint: swim 750 m, bike 20 km, run 5 km; Olympic Triathlon: swim 1.5 km, bike 40 km, run 10 km; Half

Ironman / 70.3: swim 1.9 km, bike 90 km, run 21.1 km; and Ironman: swim 3.8 km, bike 180 km, run 42.2 km. Triathletes race again each other, completing each discipline with the aim of achieving the fastest overall time. Since its creation, triathlon has grown year-by-year into one of the most popular sports today, with data suggesting that over four million athletes participate in triathlon worldwide (Kennedy et al., 2020). There are many forms of cheating in the sport of triathlon, many of which are documented in the following literature.

Given its complexities, for those who govern the sport (i.e., World Triathlon; World Triathlon Competition Rules, 2025), there are a multitude of considerations to make to ensure a safe and fair environment for competitors. Founded in 1989, World Triathlon (previously known as the International Triathlon Union), is the international governing body for the multi-sport disciplines of triathlon, duathlon, and aquathlon. With headquarters in Lausanne, Switzerland, World Triathlon is the sole governing body who specify the conduct and behaviour of athletes during World Triathlon Competitions (Cipriani et al., 1998; Markus & Arimany, 2019; Phelps, 2006). As of today (year 2025) World Triathlon produces a 220-page document containing hundreds of detailed rules, however, the rule book has not always been so comprehensive. In 1989, when World Triathlon (previously known as the International Triathlon Union) was founded, there was not a standardised rule book like there is today. There were, however, a handful of basic rules focusing primarily on the swim, bike, run, and the transition. Then, over the years, more and more rules were introduced – detailed rules relating to technical infringements, equipment, drafting, regulations, and more. In an effort to ensure safety and maintain fairness, World Triathlon update their rules annually. By listening to feedback from athletes, coaches and officials, additional rule suggestions are put before the executive board and if approved, the new rules are enforced at the start of the triathlon season (Dick, 2025; Gary, 2025; Gray, 2025).

With hundreds of rules and regulations to which athletes must abide, enforcing these rules is a sizable task. Below is a typology of transgressions in triathlon as specified by World Triathlon. The researcher emphasises that these rules are applicable to all events sanctioned by World Triathlon. In addition, where rules may conflict, World Triathlon will enforce their rules to override the laws of the jurisdiction to the extent of the inconsistency.

1.4.2 Type of Infraction.

There are a vast array of potential rules violations in triathlon, however, some more common than others. While it is the athletes responsibility to understand the rules, due to the vast amount, many rule violations are unintentional. Arguably the most common are related to equipment, technical, and conduct, however, a comprehensive typology of transgressions in triathlon is presented below (See Table 1.1).

Table 1.1. Type of Infraction

Type	Rule Violation Example
Fraudulent	Entering under an assume name or age, falsifying an affidavit, giving false information.
Technical	Mounting the bike before the mount line.
Sabotage	Interfering with another athlete's equipment.
Unsportsmanlike Conduct	Blocking, charging, obstructing, or interfering the forward progress of another athlete.
Equipment and Clothing	Using any device distracting the athlete from paying full attention to their surroundings.
Misconduct	Using abusive language or behaviour toward event personnel.
Political, Racial, and Religious	Displaying political, religious or racial propaganda.

Pre-Competition	Not attending the Athletes' Briefing, without notifying the Technical Delegate; (not applicable to age-group).
Violating anti-doping regulations.	Using prohibited performance enhancing substance such as steroids.

1.4.3 Severity.

Infractions in triathlon vary in terms of severity. The severity of rule-breaking, as well as whether it is deemed intentional or unintentional, will determine which of the following punishments the athlete will receive: being verbally warned, issued with a time penalty, disqualified, suspended, or expelled. First, a verbal warning will be given to an athlete by a race official for minor rule violations such as wearing a wetsuit that does not cover the torso, when the wetsuit is mandatory. For time penalties, they often vary in length depending on the event (e.g., 3 minutes in long distance events; 2 minutes in middle distance events; 1 minute in standard distance events, and 30 seconds in sprint and shorter events). Rule violations that may result in a time penalties include (but not limited to), having the helmet strap fastened in transition, or disposing rubbish or equipment around the course outside the clearly identified places. For severe infractions such as using illegal, dangerous or unauthorised equipment to provide an advantage or which will be dangerous to others, an athlete may be disqualified. In this instance, the athlete may finish the competition if they wish, however, their finish time or position will not stand. For fraudulent actions, severe rule violations, and dangerous unsportsmanlike conduct, a suspension may be given. The suspension means that the athlete cannot take part in World Triathlon competitions or competitions sanctioned by National Federations affiliated with World Triathlon during a suspension period. Finally, expulsion. For the most severe rule-breaking actions (e.g., anti-doping violations), an athlete may be

expelled (i.e., they will not participate in World Triathlon competitions or competitions sanctioned by National Federations affiliated with World Triathlon for life).

1.4.4 Intention.

For many infractions in triathlon, intentional or nonintentional actions determine the potential penalty. Depending on the type of infraction, the race officials will make a decision as to whether their actions were intentional, or not. For instance, blocking, obstructing, and/or interfering the forward progress of another athlete would result in the officials' being consulted. For this, they may receive a warning if their actions were deemed unintentional. A warning such as this is usually given when an athlete violates a rule unintentionally, or when no advantage is gain during the race. However, if their actions were considered to be deliberate, they could be disqualified immediately. Further, depending on the type of rule infringement, the athlete may receive a time penalty. During the swim, for example, if an athlete makes contact and impedes the progress of the other athlete without making an effort to move apart, they could receive a time penalty. To conclude, for many rule violations in triathlon, it is for the race official to make a timely decision that will determine the repercussions.

1.4.5 Classification and Practical Use.

The typology of transgressions in triathlon is designed to cover and classify all rule violations in triathlon. As mentioned within this literature, triathlon is a complex sport and there are a multitude of rules for athletes to consider. The typology (presented above) is comprehensive in that it applies to all stages of triathlon competition (e.g., pre-competition, event entry and potential fraudulent activity, equipment, technical, and more).

The typology could be used by researchers so that they can be more targeted in their investigations. For instance, technical rule violations, equipment and clothing, and unsportsmanlike conduct are among the most common rule violations (Rutberg, 2016), but

research is sparse in these areas, with most extant psychology research focussing on doping. But, as can be seen in the typology, there are many infractions that bring the sport into disrepute or present fairness and safety concerns that can be the focus of psychology research, not just doping. Indeed, the identification of empirical examples beyond what is perhaps commonly known, may offer those with limited knowledge and experience in triathlon, crucial insight into the various infraction categories. When working within triathlon, it is important for key holders of athlete welfare to understand where transgression can take place, so that warning signs can be spotted more quickly and easily. For those researchers wishing to explore unintentional, less severe, equipment transgressions, for example, the typology may provide valuable insights. Unsurprisingly, more severe infractions are more interesting to researchers, due to the consequences of said infractions (i.e., doping, fraud). But, as presented in the typology, there are many ways to transgress the rules of triathlon, each worth spending time investigating in research. One might want to understand how an unintentional infraction occurs, so as to avoid athletes being disqualified for acts that they were unaware were breaking the rules.

The typology is however, unable to offer researchers specific details on severity in relation to all infraction types. For instance, unlike doping, which is arguably severe regardless of the specific circumstances in which it occurs, other types presented include multiple infractions of varied severity. For swimming equipment and clothing alone, there are more than 30 rules for athletes to learn, understand, and of course, abide by. Considering this, to obtain such detailed information on severity and indeed, associated repercussions, it is advised that the extensive World Triathlon Competition Rules (2025) are reviewed. The typology may also be useful for those athletes (and indeed researchers) wishing to understand the difference between intentional and unintentional infractions. Intentionality has a significant practical impact – one that requires considerable caution. For instance, it is

difficult to argue that displaying political, religious or racial propaganda (Political, Racial, and Religious) can be unintentional, however, other infraction types are not so obvious. Perhaps an athlete was unaware of the ingestion of a banned substance, or is part of an athletics program whereby third parties are adding banned substances to nutritional supplements, unbeknown to the athlete. Due diligence is key to limiting the likelihood of unintentional rule violations and indeed, gaining a comprehensive understanding of all aspects of infraction types. Finally, although the typology is a comprehensive descriptive tool, it should not be viewed as a rigid construct, nor should it be used as a single source of information.

1.4.6 Summary.

In summary, the typology of transgressions in triathlon provides an overview of common infractions. Severity, intention, both play significant roles in determining the punishment. While there are indeed subtle differences in rules and regulations for age-groupers (i.e., amateurs), elite triathletes, and para triathletes, the structure is similar for all competitors. Finally, as mentioned previously, rules are reviewed annually and therefore, for those with an interest in competing in triathlon, they are advised to review the most recent and up to date rules and regulations document prior to participating.

1.5 Combatting Transgression

The regular news reports and social media coverage of athletes and organisations breaking the rules provide insight into the prevalence of transgression in sport (Edouard, 2021; Zimniuch, 2009). The use of dubious tactics to gain an unfair advantage over opponents began many years ago, and as times have changed, so have sports, which have evolved and grown into a $414 billion dollar industry (as of 2010) in the US alone (Gerretsen & Rosentraub, 2016). As a result of sport science and developments in coaching, sport has advanced throughout the years, with athletes becoming more skilful, powerful, and

knowledgeable. Further, as sports have changed so too have the rules, with more stringent guidelines and regulations being introduced each year. Rules are in place to promote both safety and equity, providing all competitors with the same rights (Vamplew, 2007). However, arguably, the implementation and enforcement of additional rules may provide more opportunities to break them.

It was not until the late 1920s that the International Amateur Athletic Federation introduced its first official ban on performance-enhancing substances (Savulescu et al., 2004). With peaks in the 1960s and in the 1980s (Rosen, 2008; Shackleton, 2009), doping violations and other forms of transgressions have become a major problem and one that has continued to grow. The regularity—and continual increase—of rule-breaking in sport and the rate at which such rule-breaking grew led to the creation of the IOC Medical and Scientific Commission, which is the oldest permanent IOC commission, having been officially formed in 1967 (although it started as a working group in 1962; Wassong & Krieger, 2012). The IOC organises the modern Olympic Games and the Youth Olympic Games and is responsible for the governance of healthcare at both of the aforementioned competitions (Ljungqvist, 2009; World Health Organization 2010). With headquarters in Lausanne, Switzerland (Maughan & Shirreffs, 2011), the IOC has come under investigation for allegedly not adhering to the 'rule book'; the IOC has been accused of taking bribes from bid cities seeking to secure the hosting rights to the Olympics. Nevertheless, the IOC is known for their important and significant contribution to sport, and its efforts in doping ultimately led to the adoption of the Anti-Doping Charter for Sport by the Council of Europe (hereafter 'Charter'; Casini, 2009).

The Charter was adopted in 1984 and recommends to the governments of Member States of the Council of Europe to take all appropriate steps within their competence to eradicate doping in sport (Serby, 2015). In 1999, the IOC held the World Conference on Doping in Sport, in Lausanne, Switzerland, and from this conference, the World Anti-Doping

Agency (WADA) was established to combat doping violations and their ever-growing impact on sport (Hanstad et al., 2008). With its headquarters in Montreal, Canada, WADA is a global organisation with approximately 185 employees representing some 57 nationalities. Since the formation of WADA, sport has become stringently policed, with further regulations put in place to ensure that, at least to some degree, sports are undertaken on a 'level playing field' (Andreff & Andreff, 2019; Gonsalves, 2021). WADA is a global body, but it is not alone in the fight against athletes opting to take an illegitimate route to achieve success. Along with various national anti-doping agencies, such as UK Anti-Doping (UKAD) and the US Anti-Doping Agency (USADA), WADA and others form a coalition centred on their common objective to uphold the integrity of sports.

WADA, UKAD, and USADA face a challenging task. These anti-doping agencies must test athletes on a regular basis, which is a costly process, and they also investigate doping allegations, engage in lengthy legal battles, manage whistleblowers, and coordinate with national and international customs organisations (Read et al., 2020). Furthermore, anti-doping agencies have the arduous task of ensuring that they stay 'one step ahead' of rulebreakers; this involves scientific development, which ultimately requires a substantial amount of funding. Anti-doping agencies are already somewhat proactive in their development of educational initiatives—arguably a key strategy in the fight against rule-breaking—and are striving to ensure that the athletes of tomorrow understand the risks associated with rule-breaking and receive the necessary guidance to remain on the legitimate path during their careers.

The legal costs of agencies such as WADA can run high (Facibene, 2022; Maennig, 2014). Whether allegations are true or false, they are certainly not welcomed, as they are accompanied by financial implications for both parties involved, as well as unwanted media attention (Hambrick et al., 2015; Spalletta & Ugolini, 2014). For instance, Floyd Landis, a

former American cyclist who finished first at the 2006 Tour de France. Pennsylvania-born Landis, with 7 years of professional experience at the time, had issues during Stage 16 but managed to come back, finishing strong and taking victory at the 2006 Tour de France (Elcombe, 2020; Glantz, 2010). Floyd Landis would have been the third non-European winner in the event's history, but his victory was short-lived (Van Reeth, 2022), as he was subsequently disqualified for testing positive for performance-enhancing drugs. To litigate this ruling, WADA spent around $2 million (Ljungqvist, 2012). On the face of it, $2 million may not seem like an extraordinary amount of money for a large organisation such as WADA, but with so many athletes attempting to cheat the rules, this results in numerous legal battles, and the aggregate legal costs can quickly grow. On the other hand, when an agency is wrong in its accusations against an athlete (Moston & Engelberg, 2019), the cost of damages and other legal fees can often be much greater, which was the case regarding Harry Reynolds. American-born Reynolds, known within the world of track and field as Harry 'Butch' Reynolds, competed in the 400-meter dash (Newman, 1994) and was a former 400-m world record holder; however, he was disqualified for doping, but in 1990, a court ordered the International Association of Athletics Federation to pay him over $27 million in damages (the ruling was later overturned). This case highlights how not all allegations are confirmed. In the case of a wrongful accusation, the damage can be considerable, with the athlete's name and reputation tarnished; here, compensatory damages may not truly remedy the harm. For Reynolds, however, his ordeal did not stop him from pursuing and achieving greatness by becoming a coach at Ohio Dominican University in Columbus and being inducted into the Track and Field Hall of Fame in 2016.

USADA is also subject to doping violation disputes (Straubel, 2001; Tygart, 2003; Weston, 2017). American sprinter Latasha Jenkins was an accomplished champion when she failed a drug test for the banned substance Nandrolone, which is a drug that stimulates the

growth of skeletal muscle and a lean body composition, and may provide benefits in reducing components of metabolic syndrome (Pan & Kovac, 2016; Patanè et al., 2020). Chicago-born Jenkins, the 2001 World Indoor and Outdoor Championship silver medallist, appealed the allegations. Claiming her innocence, Jenkins remained defiant, fighting until she was exonerated of all charges. Subsequently, WADA agreed with their verdict and dropped their appeal (Straubel, 2009). Stories such as these (i.e., those of professional athletes winning their cases against anti-doping agencies) are not uncommon (Zaksaite, 2022). Sporting enthusiasts with a passion for football are more than likely aware of the Mamadou Sakho case. Paris-born Sakho, a professional footballer who plays as a centre-back (M'bayo, 2022), was accused of failing a drug test in 2016. The French star firmly denied the allegations, and his lawyers fought for over 4 years to clear his name. The former Liverpool player finally won his case against WADA (Pitsch & Gleaves, 2020), with the agency clearing his name and expressing regret for the defamatory allegations. Sakho commented on how the ordeal had impacted his career: he stated that the situation had damaged his relationship with Liverpool, which ultimately resulted in him being transferred to Crystal Palace in 2017.

Whether an athlete is found guilty or innocent, the literature highlights the tremendous financial implications for both parties involved. With rule-breaking allegations and lawsuits come unwanted media coverage, at least for the athlete under the microscope. High-profile cases within the world of cycling—for instance, those of Lance Armstrong (Moore, 2017) and professional cyclist André Cardoso (Dimeo & Møller, 2018)—remind us that, as well as the substantial fines to pay, legal fees, and loss of earnings, the athlete's name and reputation are often damaged for long after the case receives public attention.

In many cases, some would argue that rule-breaking in sport should be considered an illegal action. For instance, depending on the sporting disciple, and the level of competition, winning is often rewarded financially. Where athletes stand to receive substantial prize

money, a lucrative sponsorship deal, or any other reward, in the past, such actions have been deemed attempted theft, and those responsible have been disciplined accordingly. Research suggests that anti-doping agencies such as USADA and the judges responsible for overseeing rule-breaking cases are indeed beginning to take a firm stand against cheating in sport by attempting to build criminal cases and convict those who disregard the rulebook (Morgan, 2006). This was the case during a fishing competition held in Texas, USA. Robby Rose, a 45-year-old Dallas man, was caught inserting a 1-lb weight into the mouth of a fish, in an attempt to bulk up the fish and scoop the winner's prize: a $55,000 fishing boat. Rose was taken to court, charged with attempting to steal the prize, and fined $3,000. The disgraced fisherman was also ordered to surrender his fishing licence and to serve 15 days in prison (Drilling & Fire, 2011; Hlinak, 2011; Hunt et al., 2011). Further, a similar case occurred more recently. In this case, Jacob Runyan and Chase Cominsky, fishermen from Cleveland, Ohio, pleaded guilty to the crime. The judge imposed a 3-year suspension of their state fishing licenses and ordered both fishermen to pay $2,500, as well as to serve 10 days in jail and 6 months' probation (Babineau, 2023). One could argue that prosecuting cheating as a crime is going too far; however, the similarities between these cases and, for example, someone attempting to steal or defraud a bank are clear.

So far, we have highlighted the development of agencies such as WADA and UKAD and provided insight into their often costly legal proceedings. However, arguably, one of the biggest challenges (and the most financially straining) in the fight again transgression is the process of testing athletes for banned substances; this process is often complex and expensive to carry out, and worse, some argue that these tests are not entirely accurate (Crowley, 1995). Anti-doping agencies and governing bodies across all sports have found themselves in a continual battle with the athletes who are implementing innovative methods of deception. From providing agency drug testers with an incorrect address or hiding when a test is

imminent to using masking agents that disguise illegal substances in their systems, athletes will go to great lengths to avoid being caught (Bowers, 1998; Crouch & Shelby, 2020). Furthermore, and in relation to drug testing, a study by Hermann and Henneberg (2014) revealed a low probability of doping detection, with odds of 0.029 for discovering doping once a week by a single random test with average sensitivity (40%) and a window of detectability of 48 hours. With 12 tests a year, the probability of detecting continuous doping is only 33%. To detect 100% of doping in one year, 16–50 tests per athlete must be done, at a cost of around $25,000. Given this cost, 100% accuracy is out of the question. The research by Hermann and Henneberg indicated that a more cost-effective strategy is required.

Often called ‘designer steroids’, performance-enhancing drugs are continually evolving, and many of these prohibited substances are found in off-the-shelf products (Auchus & Brower, 2017; Gheddar et al., 2019; Kazlauskas, 2010). However, WADA has begun to make major strides in their work by developing methods to detect new substance, but the emergence of new drugs continues to pose a challenge (Gabriels et al., 2023; Joseph & Parr, 2015; Kazlauskas, 2010; Malvey & Armsey, 2005). For anti-doping programmes to remain effective—that is, to detect the ingredients and molecules contained in these substances—further funds are needed for scientific research and for the development of new techniques to help in the fight against rulebreakers (Abushareeda et al., 2014).

Some also would argue that the process of testing athletes is unethical. A study be Malloy and Zakus (2002) investigated the ethical implications of testing athletes for the use of banned substances and assessed whether the current approach is a morally justified suspension of privacy. While there are indeed valid arguments against testing because of the ethical implications, most would assert that testing athletes is necessary to ensure a fair and level playing field (Buzuvis, 2010; Henne, 2014).

Finally, sports allow an escape from the daily grind of modern life. For those who participate at the amateur level, sport provides an opportunity improve one's health and to socialise, as well as offering excitement and camaraderie. For professionals, sports offer individuals an opportunity to accomplish their dreams and provide for themselves and their families. No one wants to see sports tarnished by match fixing, dishonest coaching behaviours, or illegal drug taking. Athletes are often role models for the millions of youngsters who tune into watch their favourite team each week and dream of following in the footsteps of their sporting heroes. Regulations must thus remain strong, the process of testing athletes must be refined, and rulebreakers should be brought to justice. This literature review has highlighted that agencies such as WADA, USADA, and UKAD serve a vital role in rooting out rule-breaking in sports.

1.5.1 Educational Programmes and Initiatives.

The world of sport has become plagued with rule-breaking, however, efforts are being made to prevent it. First, UK Anti-Doping (UKAD) is a national body responsible for creating a UK-wide environment of confidence in clean sport. They place much of their attention and resources into young people – offering education programmes focusing on the spirit of sport, for example. Researchers support the strategy stating that anti-doping education should focus on young athletes (Sipavičiūtė et al., 2020). Further, researchers have investigated the effectiveness of anti-doping programmes designed for adolescents (Sagoe et al., 2016). For instance, a programme named Hercules was found to be valuable in providing adolescents with knowledge on anabolic-androgenic steroid (AAS; also known as anabolic steroids), as well as highlighting their harmful effects. In addition to educational programmes for youngsters, UKAD offers opportunities to gain qualifications, engage in e-learning courses, as well as providing an array of downloadable resources that anyone can access. Athletes, parents, and coaches can all benefit from the educational content offered by UKAD.

Considering their sizable efforts, it is evident that UKAD are striving to ensure that coaches, and indeed, the next generation of athletes are better educated, and they are not alone in their efforts.

The World Anti-Doping Agency (WADA) is an international agency co-founded by the governments of over 140 nations. WADA's role in education is to regulate anti-doping policy and enable the development of education programs. Further, ADEL, part of WADA's educational initiatives, is a learning platform providing courses on prohibited substances, as well as offering resources for teachers and anti-doping practitioners to assist in the development and implementation of anti-doping programmes. WADA offers a variety of e-learning courses, quizzes, videos, webinars, and offers opportunities to connect with likeminded individuals (e.g., researchers, anti-doping practitioners) as a way to share and learn together.

As mentioned previously, anti-doping agencies are actively engaged in education and training, as too are other organisations. The Football Association (FA) are also doing their best to promote a fair and safer sport. The FA's anti-doping education programme aims to uphold and preserve the ethics of sport, improve integrity, and to ensure that all players have an equal chance on the field. This FA's programme provides various resources such as online courses, videos, and even face-to-face classes. These resources aim to help players, coaches, and clubs. While much is being done, researchers argue that education does not necessarily translate into prevention. For instance, Houlihan (2008) argues that education (information and knowledge) may prevent doping under conditions where people are either ignorant or incompetent. This assumes that if someone makes the conscious decision to dope, knowledge will have no impact. While this assumption may hold some truth, one could argue that this would not be the case for everyone. Further, a systematic literature review was conducted to assess the effectiveness of doping prevention and education in young age groups. The review

which included 30 articles found that programmes that actively engage their participants appear superior to lecture-based knowledge transfer (Pöppel, 2021). This study leads one to believe that it is not education that may impact an athletes decision to rule-break or not, but the way in which the education is delivered. Further studies provide some evidence that content is a determining factor. The study found that provoking critical thinking in athletes about using banned substances in sport might be more effective in preventing doping than programmes focusing only on health education (Sipavičiūtė et al., 2020).

It is evident that organisations are proactively implementing strategies to combat rule-breaking in sport. However, literature is scant in terms of educational initiatives focusing on the various forms of rule-breaking in sport. As highlighted previously (sections: 1.3 Transgression in Triathlon and 1.4 Typology of Transgressions in Triathlon), in relation to triathlon, there are many rules and a wide range of violations. Unfortunately, the focus seems to be primarily on anti-doping initiatives, rather than rule-breaking as a whole. Nevertheless, it is clear that athletes and coaches are indeed motivated to build a better future for sport, however, not everyone is enthusiastic. Researchers argue that coaches are often made aware of education programmes but they are reluctant to engage with them (Patterson et al., 2014). In light of this, and to ensure that all coaches are equally engaged, researchers also suggest that anti-doping education must become a standard part of the coaching education process, and there should be legislation that obliges coaches to take part in continuous education and provide proof that they provide preventive measures for their athletes (Engelberg et al., 2019; Patterson et al., 2014). Coaches should do more as they are an influential part of an athletes development. Further, studies have demonstrated the effectiveness of intervention programmes aimed at coaches to evaluate their attitude in favour of fair play in sports (Palou et al., 2020). In addition, a study by Ferris et al. (2015) examined coaches' perspectives about a character-based coach education workshop and found that participation in workshops

contributed to the value coaches attributed to individuals, to coach-oriented character development, and to positive relationships within youth sports (Ferris et al., 2015).

To conclude, while some questions remain in relation to the effectiveness of education, some researchers provide compelling evidence that programmes can have a positive impact on doping knowledge, anti-doping attitudes, and morality (Nicholls et al., 2025). Considering this, we should therefore, continue to explore and seek new data, and develop and deliver educational content to athletes and coaches alike.

1.6 Current Research

Transgressions in sports attract considerable attention from academic researchers, who endeavour to understand the prevalence as well as root causes and offer suggestions for mitigating the problem (e.g., Alaranta et al., 2006; De Hon et al., 2015; Potgieter, 2013). To date, researchers have focused on a number of key areas, such as attitudes towards doping, and studies are crucial to our understanding of the issues (Madigan et al., 2016; Morente-Sánchez et al., 2013; Vangrunderbeek & Tolleneer, 2011). For instance, if we learn more about athletes' attitudes towards transgression, educational programmes can be implemented to alter their attitudes, thus hopefully resulting in fewer individuals breaking the rules. In addition, researchers have closely investigated how social factors such as age, gender, disability status, education, and family may influence an individual's propensity to dope (Backhouse et al., 2018; Johnson, 2012; Zucchetti et al., 2015). Psychological characteristics have also come under close scrutiny, with scholars aiming to understand common traits seen among those more likely to transgress rules (Hayward et al., 2022; Nicholls et al., 2020). Emotional state, intelligence, temperament, and personality are all psychological characteristics thought to be the key to understanding many behaviours, whether transgressions by athletes or otherwise. Academics have conducted investigations to develop various questionnaires, with these measures designed to understand more about an

individual's views on prohibited performance-enhancing substances and those who use them (Boardley et al., 2018; Kavussanu et al., 2016; Sullivan et al., 2015).

The Doping Moral Disengagement Scale (DMDS) and Doping Self-Regulatory Efficacy Scale (DSRES) were created to measure moral attitudes in the context of doping. While these measures were developed using a robust process (Backer, 1972; Loewenthal & Lewis, 2018), some flaws may undermine their design. For instance, many measures such as these adopt a very direct questioning approach—a strategy that raises concerns regarding suitability and effectiveness. The development of measure such as these must take into consideration SDR and consider that a direct questioning strategy may increase the likelihood of SDR (Latkin et al., 1993; Schuetzler et al., 2018). For instance, Boardley et al. (2018) developed the DMDS, a measure comprising 18 statements/questions describing thoughts that athletes might have about doping. The measure underwent content validity assessment and pilot testing, which involved a review of the extant instruments and qualitative papers within the physical activity context, as well as consultation with experts. All the necessary steps were taken during its development, however, the DMDS includes some statements of questionable relevance—for instance, Statement 9 reads, 'Compared to smoking, doping is pretty safe'. Not only does this statement lack relevance—smoking and doping are not related—but it could be argued that in order to answer this statement with any degree of meaning, an athlete would require adequate knowledge of the health implications of both smoking and doping. From another angle, one could argue that very little is learned if an athlete opines that smoking is safer than doping, for example.

The DSRES was designed with an arguably more appropriate methodology, but it still lacks in many areas. First, the six-item measure begins with the following statement: '*Here we would like to get a better understanding of experiences that can be difficult to manage. For each of the questions listed below, please circle the number that best corresponds to your*

level of confidence right now. Please respond honestly'. This statement highlights the primary issue with many of these measures—asking potentially dishonest athletes to 'respond honestly'. For those athletes willing to break the rules, answering these questions honestly may not necessarily bring about detrimental repercussions if the responses are anonymous. However, if the athletes were to be identified, they certainly would not be looked upon favourably by their coach or whoever administered the questionnaire. Even if assured of the anonymity of their responses, athletes may not answer truthfully. Overall, the DSRES has both positive and negative aspects. Unlike the previously mentioned DMDS, the DSRES incorporates valuable questions such as 'How confident are you right now in your ability to resist doping even if your training group encouraged you to do it?' and 'How confident are you right now in your ability to ignore the temptation to dope even if you knew it would improve your performance?' This questioning style is arguably more robust.

A further measure worth mentioning is the Doping Willingness in Sport Scale (DWiSS), which is an eight-item measure designed to predict doping in sport by capturing athletes' beliefs and attitudes towards using prohibited performance-enhancing substances (Jowett et al., 2023; Stanger et al., 2020). The measure employs a 5-point Likert scale (anchors: 1 = *not at all willing* and 5 = *extremely willing*) and adopts a first-person written perspective and a somewhat direct questioning approach. The measure poses the stem question 'Would you be willing to use a banned substance if you…' and presents items such as 'You suffered an injury and needed to recover quickly', 'You were struggling to keep up in training/competition with those around you', and 'You thought everyone you were competing against was using a banned substance and getting away with it'. Whether any potential rule-breaker, or indeed, those with a more lenient attitude towards acts of transgression, would be willing to answer these questions honestly is, questionable. Although many rule-breaking and antisocial behaviours are impulsive (Luengo et al., 1994; Maneiro et

al., 2017; McTernan et al., 2014; Young et al., 2020), doping in sport is often premediated (i.e., an athlete decides to use a prohibited substance in advance of their competition; Evans, 2004; Hartgens & Kuipers, 2004; Mazzeo, 2018). Hence, athletes who are capable of breaking the rules of sport would likely be cautious when responding to a measure inquiring into their behaviours.

The aforementioned measures are questionable in terms of their design and content, and the process of administering them also raises some concerns. For example, when a coach distributes a measure to an athlete or a group of athletes and the measure contains questions of a sensitive nature (i.e., questions relating to doping or any other form of transgression in sport), the person distributing the measure is arguably a significant enough factor to increase the likelihood of socially desirable responding. Even sealing questionnaires in large envelopes in the presence of the participants (Lee et al., 2000) does not adequately ensure that the respondents felt comfortable providing a truthful response. However, researchers who have focused on administering questionnaires have revealed the benefits of anonymous versus identified measures (Boynton, 2004; King, 1970; Russo et al., 2012): an anonymous response strategy that encourages respondents to be truthful (Patten, 2016). However, even some athletes may remain sceptical of promises of anonymity.

Researchers have implemented measures to investigate attitudes towards doping, targeting both youth and adult athletes (Gürpınar, 2014; Petróczi & Aidman, 2009; Wagnsson et al., 2016). For instance, a study incorporating the Performance Enhancement Attitude Scale (PEAS; Petróczi & Aidman, 2009) found that female cyclists were significantly more open to the use of performance-enhancing substances than triathletes were (Morente-Sánchez et al., 2013). Further research supports this notion, with a study revealing that rugby players exhibited greater tolerance for deliberate rule violations than did participants from other sports (Potgieter, 2013), thus indicating that attitudes across sports do indeed differ. The

PEAS, a measure similar to the DMDS, DSRES, and DWiSS, is a 17-item measure designed to capture self-declared attitudes towards doping and has been used to investigate attitudes towards doping among Spanish female cyclists and triathletes. The study was conclusive in its findings, and while females cyclists were more open to doping, neither group (cyclists and triathletes) exhibited a high tolerance for the use of performance-enhancing substances.

Researchers across the globe have endeavoured to understand more about rule-breaking in sports. To date, studies suggest that several factors influence an individual's propensity to cheat, with many focusing on the idea that transgressive behaviours are influenced by the environment in which the athlete develops and grows, for example (Harris, 2020; Henning et al., 2021). Other researchers have argued that cheating behaviour is perhaps more likely determined by an individual's personality (Hoff, 2012; Sipavičiūtė & Šukys, 2019; Zelli et al., 2010). Other studies have investigated the relationship between the so-called Dark Triad and attitudes towards cheating behaviour in athletes (Nicholls et al., 2020). The Dark Triad describes a collection of negative personality traits, namely Machiavellianism, narcissism, and psychopathy (Adams et al., 2014). Nicholls et al. (2022) implemented an innovative strategy to investigate the issue of transgression in sport and obtained crucial findings regarding attitudes towards doping and cheating behaviour and their relationship to various personality characteristics. The study recruited 164 athletes, all of whom completed two Dark Triad questionnaires designed to measure the following three traits: Machiavellianism, a trait characterised by interpersonal manipulation, lack of empathy, and a strategic focus on self-interest; narcissism, characterised by selfishness, a need for admiration, entitlement, a lack of empathy; and psychopathy, characterised by a failure to experience emotional responses, a lack of empathy, and poor behavioural controls (Casey et al., 2013; Jakobwitz, & Egan, 2006; Jones, 2016; Krizan & Johar, 2012). The design incorporated an activity in which athletes were unknowingly given the opportunity to cheat

and a financial incentive to do so. The findings revealed that all personality traits within the Dark Triad correlated positively with attitudes towards doping and cheating behaviour. Furthermore, the analysis revealed that psychopathy and narcissism positively predicted attitudes towards doping, and narcissism emerged as a positive predictor of cheating behaviour. In addition, attitudes towards doping correlated positively with cheating behaviour (Nicholls et al., 2020). These findings are arguably consistent with what one might expect to see. For instance, individuals with Dark Triad traits—for instance, a willingness to be cunning and manipulative and demonstrating a lack of empathy and poor behavioural control—are more likely to engage in cheating in sports (Anderson & Kiehl, 2014; Austin et al., 2007; Paramboukis et al., 2016). During the development of measures aimed at learning more about those individuals with the intention to cheat, researchers need to learn from key studies such as Nicholls et al. (2020), as well as the vast amount of literature that provides additional insight into the relationship between rule-breaking and personality characteristics (Barkoukis & Elbe, 2021; McTernan et al., 2014; Thorpe et al., 1999). The notion that one's propensity to break rules is influenced by personality characteristics highlights challenges in relation to athlete education. For instance, social factors such as lifestyle and environment and attitudes are arguably simpler to alter through educational interventions than are personality characteristics and traits, which are considered to be more fixed (Hudson & Fraley, 2015; Hudson & Roberts, 2014; Bleidorn et al., 2021; Roberts et al., 2017).

Researchers have also found that perceived social norms, namely the unwritten rules that define appropriate behaviour and actions within a given group or community (Chung & Rimal, 2016), and positive attitudes towards doping were the strongest positive correlates of doping intentions and behaviours (Ntoumanis et al., 2014). These findings were identified during a review of current research publications and data obtained from WADA's website. The review included 63 independent datasets that primarily implemented self-report measures

and used the theory of planned behaviour (TPB) as theoretical framework. Attitudes, perceived norms, and self-efficacy—referring to an individual's belief in their capacity to execute behaviours necessary to produce specific performance attainments (Bandura, 1977)—predicted the intention to dope and, indirectly, doping behaviours.

Many factors influence human behaviour (Milner-Gulland, 2012; Schmidt, 2005; Zabel, 2005), and psychology-focused research has also identified that peer pressure and social surroundings play a pivotal role in shaping humans as individuals and the actions people take (Adegoke & Ayoade, 2007; Barberis et al., 2022; Connor, 1994). Erickson et al. (2015) determined that various factors influence the likelihood of doping. These include having a strong moral stance against cheating, an identity beyond sport, self-control, and resilience in the face of social group pressures. Additional studies support the idea that often several interlinking factors are in play, which increases the likelihood of transgressing rules. Researchers have also investigated the relationship between personal and social correlates of poor sportsmanship (Shields et al., 2007). Although poor sportsmanship is not exactly outside of the rules, it is certainly looked down upon and goes against the 'unwritten rules' of sports. Shields et al. (2007) enrolled over 600 participants who played sports such as football, hockey, and basketball, and their study revealed that self-reported poor sporting behaviours among youth were best predicted by perceived coach and spectator behaviours.

Considerable psychological research supports these findings, with results demonstrating that many behaviours are learned and influenced by peers and social surroundings (Guell et al., 2012; Ricciardelli & Mellor, 2012; The & Otman, 2018). In addition, many behaviours are potentially developed at a young age (Shephard et al., 2014; Tremblay, 2000), and this is no different for athletes. Extensive research has investigated the relationship between coaches and athletes and tried to understand whether an athlete is influenced by their coach's behaviour and personality (Bartholomew et al., 2009). One study

found that coach narcissism was directly and positively associated with athletes' perceptions of controlling behaviours and was indirectly and positively associated with athletes' reports of needs frustration. In addition, athletes' perceptions of coach behaviours were positively associated—directly and indirectly—with attitudes towards doping. These findings promote the understanding of controlling behaviours by coaches, their potential antecedents, and their associations with athletes' attitudes toward doping (Matosic et al., 2016).

The prevalence of cheating, as well as variations in attitudes towards transgression, may depend on the sport, as well an athlete's culture and gender. One study assessed perceptions of cheating in sports (Potgieter, 2013) by enrolling 233 final-year sport science students (male: n = 137, and female: n = 96). The responses to a self-designed questionnaire revealed that females were less accepting of cheating than were male respondents. These findings highlight the importance of including gender as a variable whenever researchers are attempting to understand the issue of transgression in sport.

A further investigation by Erickson et al. (2017) incorporated semi-structured interviews and included 28 university track and field athletes. The study revealed that student-athletes favoured the option of confronting a performance-enhancing drug user directly rather than doing nothing or reporting the issue to someone (e.g., the university or an anti-doping agency). While these findings are somewhat encouraging, one would hope to see more athletes willing to report performance-enhancing drug users. However, this raises a whole other issue relating to the fight against transgression in sport: the whistleblower.

The term 'whistleblower' is used to describe those who inform coaches, senior members of staff, and/or organisations such as WADA and USADA of potential rule-breaking in sport (Epstein, 2018; Newman et al., 2022). However, and unfortunately for the fight against transgression in sport, whistleblowing is not common (Bondarev et al., 2022). Nevertheless, organisations promote reporting channels, such as WADA's Speak Up and the

IOC's reporting platform, where athletes can provide information on rule-breaking activities. For the few athletes who are willing to do the right thing, they typically prefer to use internal reporting channels to do so (e.g., reporting to their coaching staff); Bondarev et al. (2022) revealed that 38% of athletes who observed doping behaviour reported it, whereas 62% did not. Further, it was identified that athletes will refrain from reporting doping because it is not their problem, they fear consequences, they adhere to a so-called 'team code of silence', or lack the knowledge, trust, or evidence to support such potential claims. Turning a blind eye is, of course, the easier option and one that does not involve possibly damaging reputations and friendships (Bondarev et al., 2022).

The widespread and ever-growing issue of transgression in sport requires a collective fight. As highlighted in the literature, there is much being done to combat rule-breaking in sports, and standing shoulder-to-shoulder is 'perhaps' the best solution; thus, having more athletes who are willing to stand up and uphold the integrity of sports is a necessity.

1.7 Theoretical Understanding

To understand transgression in sport, many researchers have attempted to explain cheating behaviours by applying psychological theories (Kirby et al., 2015). Behavioural theories are psychological models that potentially explain many or all aspects of human behaviours (Blair-Stevens et al., 2010). There are hundreds of behavioural theories, many of which tend to emphasise individual capabilities and motivation (Davis et al., 2015; Kwasnicka et al., 2016). Further, while there are an array of theories, there are often contradicting opinion as to whether they are capable of explaining. In addition, there have been criticisms of the extent of theory use and the type of theory applied in higher-education-research (Madara et al., 2016). The following literature will focus upon the theoretical frameworks that researchers have used to explain rule-breaking behaviour in both a sporting and nonsporting context.

First, the theory of reasoned action (TRA). The theory of reasoned action is often used by researchers to explain cheating behaviours. Developed by Fishbein and Ajzen (1975), the TRA proposes that human intentions are influenced by both attitudes and subjective norms, which ultimately drive individuals' actions and behaviour (Montano & Kasprzyk, 2015). Studies have incorporated the TRA when investigating academic cheating (Silva et al., 2022), the violation of traffic laws (Yagil, 2001), as well as tax evasion (Hessing et al., 1988). However, as with all theories, there are some limitations (e.g., the significant risk of confounding between attitudes and norms. This happens because attitudes can often be reframed as norms and norms as attitudes (Nickerson, 2023). Further, the TRA was later extended to the theory of planned behaviour (TPB) – incorporating the additional perceived behavioural control component.

The TPB was developed by Icek Ajzen in an attempt to predict human behaviour (Ajzen, 1991). The theory maintains that three core components, namely attitude, subjective norms, and perceived behavioural control, contribute to an individual's behavioural intentions. Researchers have used the framework to understand cheating behaviours. For instance, a study by Ibañez (2020) used the TPB to examine the extent to which the model could predict intention to cheat among students. The study found that intention strengthens the positive relationship between attitude and behaviour (i.e., the better the behaviour that a student exhibits). Further, attitude, subjective norms, and perceived behavioural control were significant predictors of students' cheating behaviour. In the context of sport, a study was conducted to understand elite athletes' reasons for intentional and actual doping and match fixing. Using the TPB as the theoretical framework, Gray and Porreca (2024) recruited 21 elite athlete match fixers and 33 elite athlete dopers from multiple countries. The findings suggested that attitude, subjective norms, and perceived behavioural control influenced doping. However, in relation to match fixing, perceived behavioural

control did not exert an influence. The authors suggested that these findings were due to differences in motives for transgressions and doping attitudes. Further, Kang and Kim (2021) examined predictors of deviant behaviour in young athletes by using the TPB and found that perceived behavioural control and an individual's sense of moral obligation greatly influenced the intention to engage in deviant behaviours. Hence, the three core components of the TPB may explain and even predict transgression in sport. For instance, when an athlete's attitude is more favourable towards cheating behaviour and subjective norms and their perceived behavioural control is higher (i.e., perception of their ability to cheat), they may have a stronger intention to perform that particular behaviour. The previously mentioned TRA, and the TPB, share a same limitation. For instance, researchers claim that there potentially a variance between measured intention and subsequent behaviour depending on the time interval, thus, alteration in opportunity and intention might arise in an extended period of time (East, 1993). Nevertheless, the TPB is said to be a robust theoretical framework – one capable of explaining and predicting cheating behaviours, however, other theoretical models may provide further understanding of the issue.

It is clear that many factors that may influence the decision to either transgress rules or demonstrate unsportsmanlike tendencies (Nicholls et al., 2020; Shields et al., 2007). Researchers suggest that behaviour occurs within a system, and as such, so do behaviours in performance-related domains (e.g., athletics, academics). A study by Johnson (2011) explains that doping behaviour in sport, for example, is a function of systemic transactions between historical doping practices, the present environment, current antidoping interventions, one's genetic makeup, developmental milestones, social factors, and epigenetics. Further research supports this idea, claiming that the interplay between performance goals and behavioural pathways determine the way athletes think about doping and these mental representations are

reflective of the degree of cognitive dissonance between attitude towards performance-goals and behaviour (Petroczi, 2013).

Cognitive dissonance theory (Festinger, 1957) posits that individuals seek to maintain consistency among multiple cognitions (e.g., thoughts, behaviours, attitudes, or values). In other words, individuals experience discomfort when holding conflicting beliefs or attitudes, leading them to change one to resolve the inconsistency. Considering this, it is plausible to suggest that one, two, or even three factors may not determine whether an athlete would cheater or not. In relation to the theory of planned behaviour, for example, an individual's attitude, subjective norms, perceived behavioural control, may indeed jointly or independently indicate one's greater intent to transgress rules, however, perhaps there is a more complex explanation as to whether they would engage in that behaviour, or not. For instance, an individual may feel like doping is completely fine; their attitude towards doping is lenient, and many of their fellow athletes are using such methods in sport. However, if their performance is at a level where they feel it is not worthwhile, they may have no real intention to engage in that particular behaviour. Further to this, it could also be the case whereby an athlete does not have the means, or indeed, the opportunity. In human behaviour, opportunism concerns the relationship between people's actions, and their basic principles when faced with opportunities and challenges. Considering this, one may argue that a multitude of factors determine behaviour - it is complex, thus, models such as Maslow's Hierarchy of Needs many only scratch the surface when it comes to explaining human behaviours.

According to Maslow (1943, 1954), there are five sets of basic needs that are related to each other in a hierarchy of strength. Maslow proposed a pyramid of human needs, starting from basic physiological needs to self-actualization, suggesting that lower-level needs must be satisfied before higher-level needs become motivating. The model has been used to

understanding cheating behaviour in academia. The study by Kurniawati and Ariyanti (2022) incorporated variables that were designed based on Maslow's models, with six dependent and five independent variables. The found that gender and grade did not affect students' motivation to cheat during online exams. While there are indeed strengths to the model (e.g., intuitive, easy to understand, and its applicability across various fields), researchers suggest that it lacks empirical support and that the complexity of human behaviour cannot be fully captured by a single model.

A further area to explore are theories incorporating morality. Kohlberg's Moral Development Theory (1977) outlines a three-level, six-stage theory where individuals progress through distinct stages of moral reasoning, from a focus on self-interest to a broader, universal ethical principle. In addition, the moral disengagement theory (MDT) was developed to explain how people justify their actions and commit immoral behaviours (Moore et al., 2012). Proposed by Bandura et al. (1996), the theory suggests that individuals tend to cognitively separate the moral component from an otherwise unprincipled act in order to rationalise engaging in it (Bandura et al., 1996; Bandura, 1999). In other words, when an individual or a group carries out an unethical behaviour, they must first go through a process of moral disengagement. Considering this, one could argue that this theory would explain rule-breaking behaviour in a sporting or nonsporting context. Further to this, a study by Farnese et al. (2011) investigated the role of domain specific self-efficacy beliefs and academic moral disengagement in influencing students' cheating behaviours. Incorporating a sample of 416 Italian students, findings suggested that academic moral disengagement facilitated cheating behaviours beyond the impact of self-efficacy beliefs.

Bandura's social cognitive theory and social learning theory both propose that individuals acquire new behaviours by observation and the influence of social interactions. While this theory may explain transgression in sport, one could also argue that many

individuals would not transgress rules regardless of social interactions. However, researchers suggest that social-cognitive theory (Bandura, 1986) is a comprehensive framework explaining why people engage (or not) in misbehaviour in different settings and domains (Fida et al., 2018), and has been used to explain rule-breaking behaviours (O'Fallon & Butterfield, 2008, August). Created by Bandura (1986), the SCT proposes that human learning and behaviour occur in social environments (e.g., through observation, modelling, and motivation; Schunk & Usher, 2012). The theory suggests that individuals do not respond to past or current environmental influences but possess the ability to foresee the consequences of their actions (Lee & Bong, 2023). However, critics suggest that the SCT proposes a somewhat simplistic view of behaviour, as well as showing little consideration for emotion and biological factors (Armitage & Conner, 2000; Bandura, 2009; Bussey & Bandura, 1999).

In summary, several psychological frameworks are often applied to provide insight into the constructs of rule-breaking behaviours. Encouragingly, theoretical frameworks such as the TPB are somewhat robust in providing a deep understanding of rule-breaking behaviours (Chan et al., 2015; Hurt et al., 2024; Kirby et al., 2015; Petróczi et al., 2007). The inclusion of such theories into research has been crucial for understanding rule-breaking intention and behaviours in sport. For instance, research has shown that athletes' attitudes towards the use of banned performance-enhancing substances are reliable predictors of their intentions to use these substances, which in turn can be relevant predictors of their actual doping behaviours (Horcajo et al., 2019). However, there are indeed question marks surrounding the TPB and its ability to comprehensively explain transgression in sport. Further, as mentioned previously within this literature, one may argue that due to the complexity of human behaviour, it cannot be fully captured by a single model. To conclude, the literature indicates that the theory of planned behaviour can shed light on the constructs of

transgression in sport, thus the researcher is confident that further research implementing the TPB as theoretical framework is necessary to continue developing our understanding of transgression in the context of sport.

1.8 Socially Desirable Responding

From a psychological perspective, more needs to be understood about those potentially more willing to transgress rules in sport, and in order to fully understand the problem and develop a solution, difficult questions must be asked. However, with sensitive topics such as transgression in sport, one of the major issues that researchers face is socially desirable responding—more commonly referred to as SDR (Van de Mortel, 2008). Socially desirable responding (SDR) is typically defined as the tendency to give positive self-descriptions (Braun et al., 2001). The SDR phenomenon introduces extraneous variation in scale scores and consequently, SDR has been called "one of the most pervasive response biases" in survey data (Steenkamp et al., 2010). For more than 60 years, researchers have remained concerned about the false relationships or the obscuring of relationships between variables, as a result of socially desirable responding. While it may always be present in research, researchers can do their upmost to implement strategies to limit it, control for its presence, and acknowledge SDR in their findings.

Asking an athlete 'would you cheat?' is essentially asking a potentially dishonest person, or indeed, a person with leniency toward transgression, to be truthful in their response. For many professional athletes, lucrative sponsorship deals, substantial salaries, the ability to provide for their family, and their reputations are on the line. Although many questionnaires are administered anonymously, respondents may still hesitate. They may avoid taking any risk of having their intentions to transgress rules, revealed, thus potentially responding in a socially desirable manner.

The literature suggests that SDR is common and that respondents systematically overreport socially desirable behaviours and systematically underreport socially undesirable behaviours (Poltavski et al., 2018; Van de Mortel, 2008). SDR impacts the reliability of data relating to rule-breaking in sport and is also a concern when inquiring into sexual activities, illegal behaviours such as social fraud, or antisocial attitudes such as racism (Krumpal, 2013). However, regardless how sensitive an area may be, we need to develop ways of attaining information so that new knowledge can emerge. For instance, without acquiring comprehensive knowledge of dyslexia, for example, assistance tools such as visuals aid and coloured paper would certainly not have been introduced; a similar concept applies to transgression in sport.

In an attempt to gain a better understanding of SDR, researchers have suggested that SDR is closely related to age (i.e., the tendency to present oneself in the most favourable light may be mitigated in older subject groups; Park & Lessig, 1977). Other studies have found that gender may influence SDR. For example, a study investigating SDR and the fear of crime found that for men, but not women, reported fear levels were inversely related to scores on a so-called 'lie scale' that measured the tendency to provide socially desirable rather than totally candid responses. In further support of this, a study tested whether disguising the purpose of the Beck Depression Inventory-II would significantly reduce socially desirable responding; the study found sex differences, with men tending to minimise their depressive symptoms more than women (Hunt et al., 2003). This pattern held irrespective of age, suggesting that the genders are affected differently by social pressure to downplay fears about crime (Sutton & Farrall, 2005).

The consensus view is that SDR is problematic for the reliability of data. Considering the prevalence of SDR, researchers must be proactive and take necessary measures to at least limit the impact of SDR on their data. Fortunately, there are processes that can be

implemented to reduce SDR, many of which focus primarily on questionnaire design and content. For questionnaires developed to understand transgression in sport, as well as those investigating sexual activities, illegal behaviour, and race, the language is often unavoidably intrusive and sensitive in nature. One of the key strategies for attempting to limit SDR is the manipulation of questions and their context by using 'forgiving' wording to disguise the general purpose of the questionnaire (Näher & Krumpal, 2012). Using forgiving wording (also referred to as "loading"-strategy in survey methodology), means that every word encourages respondents to answer more truthfully to sensitive questions (Bradburn et al., 2004; Groves et al., 2004). For instance, rather than saying "have you been participating in the last national election?" or "have you personally been prescribed antidepressants by a doctor within the last 2 years?", one might say (using forgiving wording) "many people do not have the time to vote anymore. Have you been participating in the last national election?" and "nowadays, performance expectations are increasing. As a consequence of this, depressive disorders are on the rise as many scientific studies indicate. Have you personally been prescribed antidepressants by a doctor within the last 2 years?" (Näher & Krumpal, 2012). When compared to a direct questioning method, researchers suggest that using forgiving wording may increase the probability of reporting sensitive behaviour.

Dissimilar to forgiving wording, indirect questioning has also been used in marketing and other social sciences to reduce SDR. By incorporating brief question phrases such as "may I ask" and "may I know", indirect questioning can project a more positive and less intrusive approach. For instance, questions such as "where is he/she going?" and/or "what is your last name?", are very direct in their approach. This 'may' make the respondent feel uneasy and result in the desire to project a favourable image (Fisher, 1993). However, using indirect questioning we can attain the same information, but in a more subtle manner, for example "may I ask where he/she is going?" and "may I know what is your last name?".

Fisher (1993) investigated three studies that examined indirect questioning (i.e., structured, projective) and compared this approach to a direct questioning strategy (i.e., structured, personal). Indirect questioning reduced SDR for variables subject to social influence and had no significant effect on socially neutral variables. These findings support the view that subjects project their beliefs and evaluations in an indirect response situation. It must also be noted that although such strategies may limit the impact of SDR, when questionnaire items are altered too much (i.e., by incorporating an indirect approach), this may lead to obtaining data not directly related to the question's objective; thus, the research question may not be answered accurately.

Other methods that could potentially reduce SDR are the use of forced-choice items (Feldman & Corah, 1960), the randomised response technique (Moshagen et al., 2010), and the less conventional, bogus pipeline (Jones & Elliott, 2017). A forced-choice item is a survey question with no option for a neutral response and has been suggested to be a viable strategy to prevent SDR (Kreitchmann et al., 2019). The randomised response technique provides participants with questions randomly selected to comprise a group of questions. This technique may reduce the likelihood of socially desirable responding due to the researcher or whoever is administering the questionnaire at the time being unaware of which questions are being answered.

The aforementioned mentioned methods may only be effective depending on the research question, its design, and the research setting. Not all strategies would be suitable or practical when developing a measure to ascertain which athletes are more likely to transgress rules in sports. For instance, the bogus pipeline is a procedure intended to improve truthfulness when collecting self-report data (Roese & Jamieson, 1993). It is essentially a fake polygraph apparatus, meaning it is not actually measuring physiological responses such as blood pressure, pulse rate, and respiratory rate. It is used to get participants to respond

truthfully by making them believe that the apparatus can detect dishonest responses. However, this methodology is somewhat intrusive (and perhaps unethical), certainly impractical, and arguably unrealistic for use on athletes in a professional setting. In addition, genuine polygraphs have also been used by researchers investigating the issue of socially desirable responding. A study conducted on a group of 16 college students investigated socially desirable responding in self-report measures of aggression. The study by Poltavski et al. (2018) found that polygraph systems may potentially highlight sensitive items on self-report instruments where SDR is possible. However, as mentioned previously, such approach is arguably intrusive and unethical, and may not be an effective solution long-term, nor would it be practical.

Efforts like altering and manipulating the question context and disguising the general purpose of the questionnaire (Sudman & Bradburn, 1982) are laudable, but it is also clear that more needs to be done. Social desirability bias in qualitative research may be intractable, but it can be minimised (Bergen & Labonté, 2020); one of the methods commonly used by researchers is the use of a social desirability scale to detect and control for social desirability bias. For those questionnaires containing sensitive items, researchers should consider the impact of SDR on the validity of their research and use a social desirability scale to detect and control for social desirability bias (Van de Mortel, 2008). The inclusion of this methodology may highlight those respondents who provide answers that sound good but are in reality untruthful. Further to this, a review of nearly 20 years of published research suggests many authors did not modify their scales even though a significant relationship between their content scales and social desirability bias scales was noted (King & Bruner, 2000).

Other research examined over 14,000 studies to report on how many included a social desirability scale, and how many found that SDR influenced the data. The research found that

only 31 studies (0.2%) used a social desirability scale, and almost half (43%) of those that used a social desirability scale found that SDR influenced their results (Van de Mortel, 2008). We might thus conclude that many research papers lack adequate reliability. Williams and Krane (1989) suggested that the field of sport psychology may need to re-examine some of the theoretical and practical conclusions drawn from previous research in which no attempt was made to eliminate data from subjects who may have distorted their responses. It must also be emphasised that regardless of the research process, the question, or the aim of the research project, a methodical design process must be the primary objective.

To conclude, while there are indeed strategies one can adopt to try limit socially desirable responding, as researchers, we must accept SDR as part of the process. Whether researchers are focusing on sexual activities, illegal behaviour, antisocial attitudes, transgression in sport, or any other sensitive subject area, making every effort to ensure research design is robust is all one can endeavour to achieve.

1.9 Summary

The present literature review has provided a comprehensive overview of transgression in sport, shedding light on the issue from various perspectives. One of the primary issues with rule-breaking in sport is its prevalence. The issue is widespread, representing a global problem among both males and females and across various sports. The literature has provided fundamental insights into the financial implications associated with combatting rule-breaking, highlighting that much is being done to police sports but that it comes at a high price. The annual amount spent by the IOC, namely £242 million, leaves one wondering whether it is a sustainable fight. However, with substantial efforts being made to combat the issue, one should remain hopeful that a brighter future for the next generation of athletes is attainable.

One of the key components in the fight against rule-breaking in sport is developing our understanding of the issue through academic research. The literature review presented a

comprehensive overview of the current research. Researchers are proactively seeking to understand more about those willing to commit rule transgressions and are implementing various strategies in an attempt to contribute to existing literature. Through the application of theoretical frameworks such as the TPB, researchers have compiled compelling evidence that may explain rule-breaking behaviours. However, there is still much we can learn, and the need for further research is evident.

1.10 Aims of Thesis

The primary aims of this thesis were to develop and validity test a method for assessing transgression intentions in the sport of triathlon.

This PhD thesis is reported in five phases.

1) This first phase of the research (Pilot Study 1a) aims to understand whether the proposed measure is an effective method of asking athletes sensitive questions and gaining an unbiased response (Chapter 2). The 12-item vignette style measure will be written in both the first-person perspective and third person perspective. Each vignette will incorporate a scenario detailing an act of transgression in the sport of triathlon. These included: wetsuit and tri-suit violations; cycling rule infringements; injectable doping violations, and consuming oral energy products containing prohibited ingredients.
2) The second phase (Pilot Study 1b) will involve a series of focus groups to gain further feedback and openly discuss participants' experience of the measure with an emphasis on the extent to which they were able to remain unbiased when completing the questionnaire (Chapter 2).
3) The third phase will involve the implementation of the newly developed measure into a study with a sample of experienced triathletes, with the objective to understand their attitude towards various acts of transgression through the lens of TPB (Chapter 3).

4) The fourth phase (Chapter 5) will offer some replication of the previous phase with an independent sample of triathletes, after the measure has undergone necessary refinements based on data collected thus far (Chapter 4).
5) The final phase of this research programme will put forth a comprehensive discussion in relation to the development of the ATTS. As well as highlighting limitations and problematic areas, the researcher will use this opportunity to put forth recommendations for further research (Chapter 6).

Chapter 2

A Pilot Study Assessing the Design, Readability, and Methodology of the Attitude Towards Transgression Scale (ATTS)

2.1 Introduction

The primary objective of this pilot study was to gain expert opinion and feedback to inform the development of the attitude towards transgression scale (ATTS)—a novel vignette-style method for assessing respondents' attitude towards transgressions in sport. The ATTS has been developed using a unique methodology, and ultimately, the wider programme of research aims to ascertain its effectiveness in measuring leniency in relation to one's attitude towards transgression. However, to ensure the ATTS is effective in acquiring this information, it first went through a design and piloting process.

First, the researcher considered its epistemological approach. Epistemology is a theory of knowledge, and is concerned with all aspects of the validity and methods, as well as the distinction between justified belief and opinion (Audi, 2010; Rescher, 2012). To gain a deeper understanding of a phenomenon (i.e., attitude towards transgression among triathletes), the researcher adopted a predominantly post-positivism approach - a philosophical perspective which became prevalent in social research in the 20th century (Fox, 2008). Post-positivism is a research paradigm that emerged as a response to the limitations of positivism – a largely deterministic and quantitative approach (Panhwar et al., 2017). Positivists contend that reality is absolute, and aim to understand facts and laws (Kouam, 2025), and in contrast, post-positivists incorporate subjective perspectives and believe that reality can be known only imperfectly, and seek to understand patterns and relationships within a particular context (Tripathi et al., 2024).

For the current research, considerations were made which informed its methodologies. First, a review of the current literature informed the researcher that sportspersons tend to exhibit lower or greater tolerance for deliberate rule violations depending on their sporting

discipline (Potgieter, 2013). Due to this, a single-sport approach was adopted (i.e., triathlon was selected to gain rich knowledge of transgression). This meant that potential findings may not necessarily be generalised across the wider context of sport. In addition, the post-positivism approach is non-deterministic, meaning that outcomes are not predictable with certainty, and due to the current research being somewhat exploratory, one cannot be certain that findings would be replicated, even under the same conditions (Faes & Moens, 2020). Further, a mixed-methods design was employed. This selection of methodologies is crucial to developing new research from the bottom-up, as well as gaining insight into theories, data, and for gaining a deep and comprehensive knowledge during measure development (McAbee et al., 2017; Nawrin & Mongkolsirikiet, 2012).

For the current pilot study, a thorough investigation of the current literature was conducted, and then several key factors were considered in relation to asking questions of a sensitive nature; these factors concerned the ATTS content, the construction of each vignette-style question presented, and the overall format (Meadows, 2003). Per the literature, a researcher must closely consider the content when creating a measure such as the ATTS because, among other things, the terminology used can influence respondents' answers (Magnus, 2008). Hence, for the ATTS, the researcher scrutinised the content, implementing neutral language and gender-neutral names to minimise the risk of unwanted influences. The researcher methodically considered all reasonable possibilities and made every effort to ensure that a robust measurement tool would be created through the developmental process.

The literature also suggests considering the issue of bias in relation to respondents selecting the first or last responses because those are the ones more easily remembered (Alreck & Settle, 1995). Hence, the current design incorporated a mixed order of responses, and one of the objectives of this pilot study was to gain expert opinion and feedback on this approach. Posing personal or intimate questions is common in the domain of psychology

(Raghubir & Menon, 1996; Tourangeau & Smith, 1996), and asking questions concerning transgressions sits firmly amongst the sensitive areas of psychology. Certainly, a poorly designed measurement tool may lead to bias; however, when they are designed appropriately (i.e., by undergoing a developmental process using a pilot study such as this), it is often an efficient and effective method of data collection (Gratton & Jones, 2004).

A key strategy adopted in this pilot study was the inclusion of both academic participants and experienced triathletes. Principally, the ATTS is a measurement tool in the form of a questionnaire, and therefore, its development required feedback and knowledge from those experienced in questionnaire design. This was a fundamental part of the developmental process: to gain informed knowledge on various components of design. Further, the ATTS is designed to target triathletes; therefore, collecting the expert opinions of experienced triathletes was necessary. The sport of triathlon (a multisport activity consisting of swimming, cycling, and running) was selected due to the researcher having extensive knowledge of that sporting discipline. As previously mentioned, given the potential for variation in attitude towards rule breaking across sports (Potgieter, 2013), a single sport approach was adopted to ensure that a robust measurement tool was created.

Researchers must adopt a methodical approach to designing measurement tools such as the ATTS, and consulting experts within the field under investigation is a key element of this (Rattray & Jones, 2007). Numerous studies have highlighted the importance of the piloting phase, claiming that when content is clear, concise, and user-friendly, it provides a useful tool of analysis (Bateman et al., 2002). By conducting a pilot study, the researcher proactively implemented a strategy to minimise the risk of designing and creating a weak scale. The current project took into consideration the shortcomings of previous research and made considerable efforts to attain expert opinion on the methodology and other components of the scale's design. This stringent approach enabled the researcher to address all issues,

flaws, and weaknesses through collaboration with those with expert knowledge in the field of psychology, measure design, and in the sport of triathlon.

The first stage of this study (Pilot Study 1a) consisted of the development and piloting of a scale (the ATTS) intended to collect respondent attitudes on various acts of transgression in sport, such as doping and other forms of violating the code of conduct for the sport of triathlon. A series of vignettes/scenarios were created—six were written in the first-person perspective, and six were written in the third-person perspective. This first phase was followed by Pilot Study 1b, consisting of a series of focus groups, which is a method of qualitative data collection in a research setting (Parker & Tritter, 2006). This strategy was implemented to attain further feedback, openly discuss the scale, and obtain rich and idiographic insight into the participants' experience of the scale, with an emphasis on the extent to which they were able to remain unbiased when completing the questionnaire.

The primary objective of this pilot study was to solicit expert opinion that would enable the researcher to make developmental changes and potentially validate the measurement tool (i.e., to confirm that the ATTS is fit for its intended purpose). The current pilot study took all necessary measures to heed the literature; namely, the researcher engaged and collaborated with expert and knowledgeable participants to gain feedback on key areas including design, content, and methodology.

2.2 Method

2.2.1 Participants. As a pilot study designed to acquire expert opinion on a proposed research endeavour, the sampling decision was based upon the following considerations. First, the research team agreed that experienced scholars would provide crucial insights from a design and methodology standpoint. Scholars with a minimum of 3-years' experience in qualitative research and questionnaire design, who were working at a higher education institute, and who had a PhD and experience publishing research in sport psychology were

recruited. Relevant guidelines suggest 12 participants when selecting an appropriate sample size for a pilot study (Viechtbauer et al., 2015), but the current study was unique in its design and objectives, and the decision to recruit 12 participants was based primarily on the need for sufficient knowledge, experience, and expertise. In addition to academic participants, experienced triathletes meeting the inclusion criteria would also provide vital insights but from a different perspective. Critically, this study aimed to acquire expert opinion and feedback on a triathlon-focused questionnaire, and therefore, selecting participants who were experienced in triathlon was a crucial element for ascertaining whether the vignettes and their content were both realistic and appropriate (i.e., face validity; Rattray & Jones, 2007). Upon receiving ethical approval from Manchester Metropolitan University (see Appendix 2.1), the current study recruited 12 participants in total: 6 experienced triathletes with a minimum of 3-years' experience competing in amateur or professional competitions, and 6 academics with a minimum of 3-years' experience in qualitative research and questionnaire design (M_{age} = 38.50, SD_{age} = 9.16). No equal gender split was required for this study (participants' gender: male = 9; female = 3). Participant consent (see Appendix 2.2) was obtained prior to all data collection.

2.2.2 Research Design. The pilot study adopted a mixed-methods approach, employing both quantitative and qualitative methods of data collection. Quantitative data collection was implemented using a 7-point Likert scale, which participants used to rate each of the 12 vignettes/scenarios. The aim was to obtain participant opinions on whether the scale was realistic, readable, and understandable by using a quantitative scale. In other words, participants were asked to use a 7-point Likert scale to indicate how realistic, readable, and understandable each vignette-style scenario item was. Responses to the scenarios were presented twice throughout the survey; in one instance they were written from the third-person perspective (e.g., Their actions are concerning. They should be dealt with accordingly

and receive disciplinary action.), and in the other, they were written from the first-person perspective (e.g., My actions are concerning. I should be dealt with accordingly and receive disciplinary action.). Qualitative data collection was also implemented during Pilot Study 1a. In addition to the previously mentioned 7-point Likert scale, participants were presented with a 'comments' section to provide additional feedback; they could add additional written details and/or any information they felt might prove insightful. This strategy was fundamental to the development of the ATTS because it provided the respondents an opportunity to elaborate on and provide the reasoning for their quantitative responses and to offer details and information beyond what could be elicited through the quantitative method. For Pilot Study 1b, focus groups were conducted. The implementation of focus groups and one-on-one sessions provided an opportunity to obtain further qualitative data using a semi-structured approach. Through this methodology, participants could provide additional comments regarding the survey structure, questionnaire design, and its content and its methodology; further, they could provide comments regarding their overall experience and participation in the pilot study.

2.2.3 Measures.

2.2.3.1 Vividness of Visual Imagery Questionnaire (VVIQ). A key component of the pilot study was for participants to possess the essential skill of being able to imagine scenarios clearly. To assess this ability, the researcher applied the Vividness of Visual Imagery Questionnaire (VVIQ; Marks, 1973), which measures the vividness of one's imagination and has been proven to be an accurate test of the vividness with which one can imagine people, objects, or settings (Walczyk & Hall, 1988). The ATTS is a vignette-based measurement tool that incorporates fictional scenarios that require some degree of imagination, and scenarios are written from both the first-person and the third-person perspective. Therefore, it was paramount for the pilot study that the visual imagery ability of

the participants was at a high level. Participants who were unable to imagine clearly (i.e., they did not achieve the predetermined minimum score of at least 32) were disqualified (see Appendix 2.7 for VVIQ).

2.2.3.2 Attitude Towards Transgression Scale (ATTS). The development of this 12-item vignette-style measure took into consideration the relevant literature, and its key components are supported by research. Each of the vignettes presents an act of transgression within the sport of triathlon, with six scenarios written from the first-person perspective and six scenarios written from the third-person perspective. This design was adopted in order to learn whether participants believed a true and unbiased response could be given and which perspective would elicit responses more appropriate to achieve this objective. The researcher proposed that questions written from the third-person perspective would evoke a more honest response and hypothesised that individuals would be less truthful when responding to sensitive questions inquiring into their personal experiences. In support of this idea, studies have suggested that asking sensitive questions in a direct manner invariably increases the risk of socially desirable responding and threaten the validity of research and the associated data (Donaldson & Grant-Vallone, 2002). In regard to vignette length, vignettes were kept to a similar length of between 174 words and 244 words. The researcher wanted to ensure that each vignette was written with the same amount of depth and description, making certain to achieve consistency throughout. Each vignette described a scenario that varies the competition level, motivation, and general reason for breaking the rules. For instance, vignettes may describe amateur triathletes transgressing rules or professionals committing the same act or situations with a high financial reward or a low one. Each scenario incorporated a different act of transgression; examples include wetsuit and tri-suit violations, cycling rule infringements, injectable doping violations, and the consumption of oral energy products containing prohibited ingredients. The measure also incorporated fictional names of banned

substances, impartial language, and gender-neutral names for those breaking the rules. The implementation of gender-neutral names was crucial to ensure the data were not compromised as a result of gender bias (Moulton et al., 1978). The researcher scrutinised each vignette for its readability and credibility by assessing whether the vignette presented a realistic scenario—that is, it described an action that an athlete would do to gain an unfair advantage in a competition setting.

2.2.4 Procedure. Two sets of participants were recruited for the pilot study—six academics and six triathletes. For the triathlete recruitment process, the principal investigator targeted potential participants using a social media channel dedicated to triathletes, both professional and amateur. An advertisement containing a detailed description of the study was posted to the channel (see Appendix 2.3) to solicit athletes to come forward, express their interest, and contact the principal investigator at their leisure either by email or private direct messaging.

For the recruitment of academic participants, a slightly different approach was adopted. As well as using social media channels such as LinkedIn, academic participants were recruited using email (see Appendix 2.4). Scholars from various institutions throughout the UK were contacted and asked to take part in the pilot study. Potential participants were provided with comprehensive details regarding the study and an explanation of why they were being approached to participate. All participants (both academics and triathletes) were provided with an opportunity to read detailed participant information and ask questions if they wished. After recruitment of the required sample, the researcher sent the participants an email outlining the study, what the process would entail, and when the study would begin.

The initial stage involved the issuing of the Qualtrics link to the pilot study. Qualtrics is a simple web-based survey tool for conducting survey research, evaluations, and other data collection activities. When participants visited the survey, they were presented with a consent

form; they digitally signed the form to agree to participate and confirm their consent, and they were then permitted to participate in the study. Participant information (see Appendix 2.5) and consent were explained clearly so that participants would fully understand the nature of the research. All participants involved in this study were provided with the contact details of the principal investigator, and if at any time a participant wished to ask questions or obtain any further information, they were encouraged to do so.

After completing the consent form, the participants completed the demographics section of the survey. The requested demographic information included age and gender only. The next phase of the survey incorporated the VVIQ, after which participants were presented with the 12-item ATTS. Each item consisted of a fictional scenario describing an act of transgression within the sport of triathlon. Upon reading each scenario and selecting the corresponding answer/statement (see Appendix 2.8), participants were asked to use a 7-point Likert scale to rate the following aspects: whether the scenarios were easy or enjoyable to read, whether the information presented could be easily comprehended/understood, and whether the fictional scenarios were accurate and true to life. The Qualtrics survey (Pilot Study 1a) took around 40-minutes to complete (M_{time} = 39.40, SD_{time} = 30.12).

Upon completion of the survey (Pilot Study 1a), participants took part in Phase 2 of the study (Pilot Study 1b): the focus groups. This was a crucial part of developing the ATTS; the researcher collecting additional feedback through the use of focus groups and by asking participants to expound on their responses and comments given during the first stage of the study. A convenient and suitable time was arranged with the participants to engage in groups sessions. Once their availability was determined, focus group sessions were scheduled to take place using Microsoft Teams. In addition, and due to time constraints of the participants, two one-on-one session were also scheduled. This minor deviation from the original research design was unavoidable and was not considered detrimental to the study or its data.

Two sets of focus group questions were created, namely one set specifically designed for academic participants and another for triathletes. This strategy was employed to gain targeted insight into specific areas of expertise, and therefore, the sessions were split accordingly. Focus group questions included the following: 'Did you feel like you could answer the questions honestly?' and 'In relation to credibility, do you feel that this methodology is credible and effective?' These were used to gain deeper insight into the methodology (see Appendix 2.9 for the full list of focus group questions). Each focus group and one-on-one session lasted for approximately 30 minutes, and during these sessions, feedback and details were obtained in relation to key areas of the measure, including (but not limited to) the use of fictional names for products and banned substances, the structure and design of the measure, and the implementation of first- and third-person perspectives.

Upon completion of the focus groups and the pilot study, participants were debriefed (see Appendix 2.6), and thanked on behalf of the principal researcher and Manchester Metropolitan University for their participation in the research study. All necessary measures were taken to ensure the privacy of all those involved in the research, and data were stored in compliance with the UK Data Protection Act 2018.

2.2.5 Data Analyses.

2.2.5.1 Quantitative. Using IBM Statistics 26 for analysis, the Kolmogorov-Smirnov test (Smirnov, 1939) was conducted to analyse the Likert-scale data. Data included the ratings for scenario readability, understandability, and how realistic each scenario was perceived to be. Furthermore, a combined analysis was performed on all three previously mentioned variables. The researcher expected and hypothesised that the most realistic and well-written scenarios would receive the highest Likert-scale rating.

2.2.5.2 Qualitative. Braun and Clarke's (2006) thematic analysis was applied to the qualitative data obtained from the 'additional comments' section in Pilot Study 1a and the

focus group data recorded during Pilot Study 1b. For the focus groups, each session was audio-recorded so that thematic analysis could be conducted upon completion of all scheduled sessions. Themes, subthemes, and codes were created, and data were presented in table format. The objective was to implement thematic analysis to reveal and highlight common themes within the qualitative data, as well as topics, key ideas, and any meaningful patterns that would contribute to the development of the ATTS. In addition, the researcher hypothesised that participants would favour vignettes written in the third-person perspective and that this would be evident in the data from Pilot Study 1a and/or from the focus groups (Pilot Study 1b).

2.3 Results

2.3.1 Study 1a—VVIQ. The measure consisted of 16 questions that the participants scored between 1 and 5 according to how vividly they imagined the prompt. The participant scores were 58, 43, 52, 55, 50, 70, 77, 55, 62, 61, 55, and 16 (M = 54.50, SD = 15.07, range = 16–77; see Figure 2.1). Participant 12 did not achieve the minimum VVIQ score of 32, and therefore, their data were not included in the results. An important participant requirement for this pilot study was to have an adequate imaginative ability to read each vignette. It was crucial that participants be able to deeply consider each scenario with a vivid visual imagination and to provide meaningful insight for the development of the ATTS. Failing to achieve the minimum score of 32 disqualified the participant.

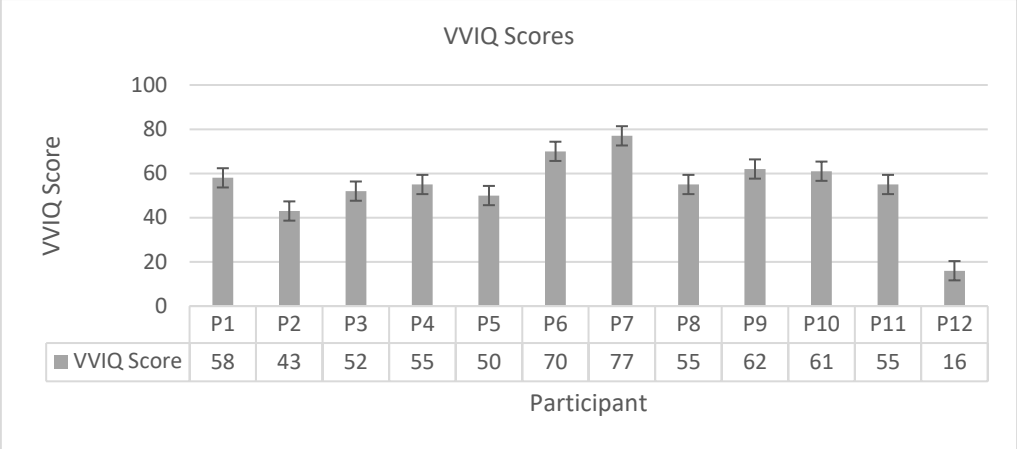

Figure 2.1 VVIQ Scores

2.3.2 Study 1a—Scenario Rating. The researcher used IBM Statistics 26, and the Kolmogorov-Smirnov test (Smirnov, 1939) was conducted to analyse the Likert-scale data for each of the 12 scenarios.

Table 2.1. Pilot Study 1a—Example of Quantitative data - Pre-Analysis.

Participant 5 – ID: 0411	
Completion Time: 35 minutes, 27 seconds	**VVIQ Score:** 50
Gender: Male	**Age:** 44 years, 6 months

Scenario 3P	**Readable**	**Understand**	**Realistic**	**Total: /21**
1	6	7	5	18
2	7	7	6	20
3	6	7	7	20
4	7	7	6	20
5	6	7	5	18

6	5	7	6	18
Scenario Rating	5	7	7	19

Scenario 1P	**Readable**	**Understand**	**Realistic**	**Total: /21**
7	6	7	6	19
8	3	5	6	14
9	6	6	2	14
10	6	6	5	17
11	7	7	5	19
12	7	7	6	20
Scenario Rating	6	6	6	18

Note: 3P = third person; 1P = first person

Readability – Scenario readability was measured using a 7-point Likert scale (see Figure 2.2). For each of the 12 scenarios, the possible minimum and maximum scores were 11 and 77, respectively. Data revealed that Scenarios 10, 11, and 12 were the highest performing in relation to readability, with scores of 71, 72, and 70, respectively (scores: 65, 69, 67, 69, 68, 68, 68, 65, 67, 71, 72, and 70; $M = 68.25$, $SD = 2.14$). The null hypothesis was retained and no significant difference was observed ($p > .05$). The results provide important insight into the readability of the scenarios. Although statistical analysis showed no significance, the mean value of 68.25 is encouraging. Given that the possible minimum and maximum scores were 11 and 77, respectively, the mean value indicates that all scenarios were written with a high degree of readability.

Figure 2.2 Scenario Rating—Readability

Understandability – Understandability was measured using a 7-point Likert scale (see Figure 2.3). For each of the 12 scenarios, the possible minimum and maximum scores were 11 and 77, respectively. Scenarios 6, 7, and 11 were the highest performing in relation to understandability, with scores of 71, 70, and 70, respectively (scores: 67, 68, 65, 69, 69, 71, 70, 69, 66, 69, 70, and 68; $M = 68.42$, $SD = 1.73$). The null hypothesis was retained and no significant difference was observed ($p > .05$). In relation to understandability, the data provide insight crucial to the development of the ATTS. As presented in the results, the analysis revealed no significance, however, the mean value of 68.42 indicates that participants considered all scenarios to be understandable.

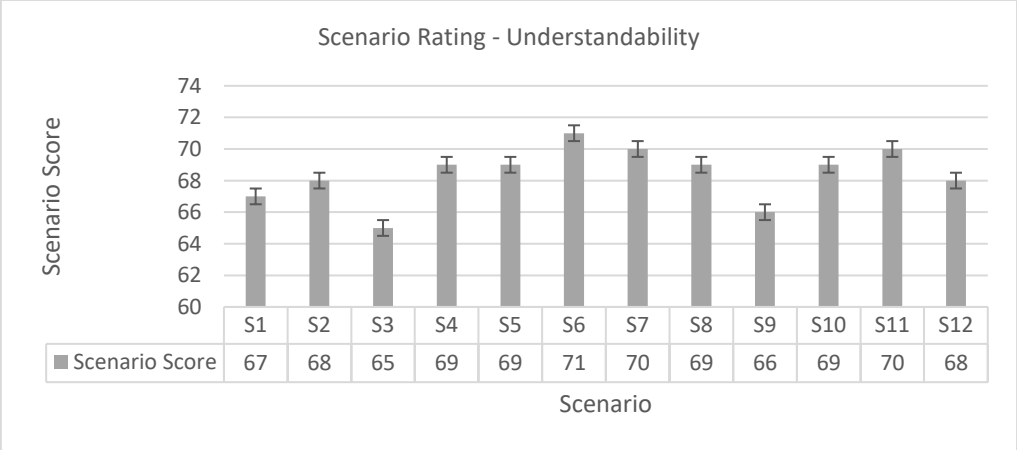

Figure 2.3 Scenario Rating—Understandability

Realistic – Likert-scale data relating to how realistic participants thought each scenario was, were also obtained (see Figure 2.4). For each of the 12 scenarios, the possible minimum and maximum scores were 11 and 77. Scenarios 2, 8, and 3 were the highest performing in relation to realistic, with scores of 66, 66, and 65, respectively (scores: 60, 66, 65, 63, 58, 62, 63, 66, 58, 61, 60, and 61; $M = 61.92$, $SD = 2.78$). The null hypothesis was retained and no significant difference was observed ($p > .05$). Notably, 'realistic' was rated the lowest out of the three variables measure of readability, understandability, and realistic. Nevertheless, given the possible minimum and maximum scores of 11 and 77, respectively, the mean value of 61.92 can be considered a somewhat positive outcome, indicating that expert participants believed the scenarios to be realistic.

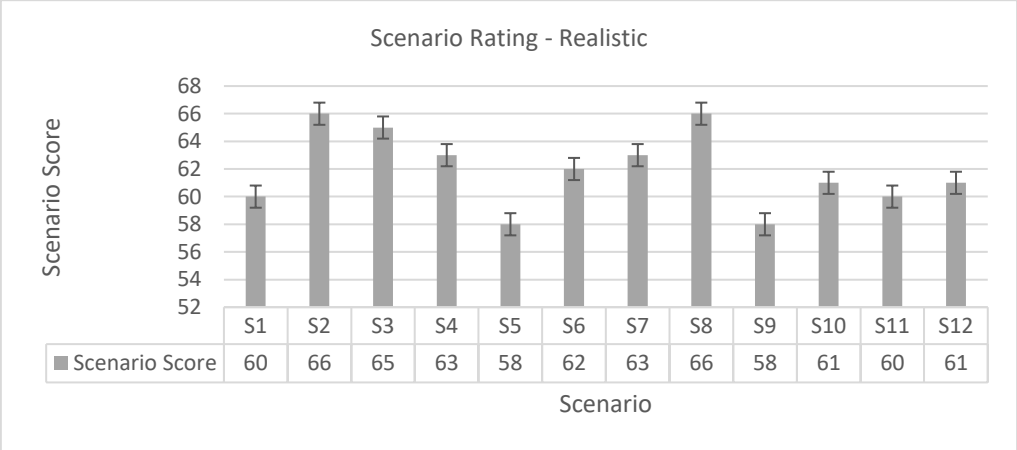

Figure 2.4 Scenario Rating—Realistic

Combined – The combined scenario rating (see Figure 2.5) incorporated Likert-scale data for readability, understandable, and realistic. For each of the 12 scenarios, the possible combined minimum and maximum scores were 33 and 231, respectively. Scenarios 2, 4, 6, 7,

10, and 11 were the highest performing, with scores of 203, 201, 201, 201, 201, and 202, respectively (combined data: 192, 203, 197, 201, 195, 201, 201, 200, 191, 201, 202, and 199; $M = 198.58$, $SD = 3.96$). The null hypothesis was retained and no significant difference was observed ($p > .05$).

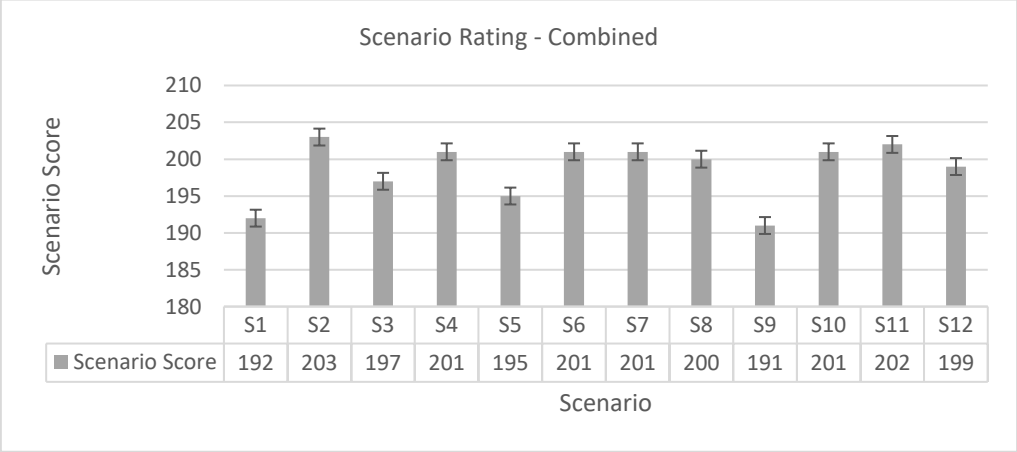

Figure 2.5 Scenario Rating—Combined

In summary, the data provided useful insights into each vignette and its scenario. Although analysis revealed that all 12-items/scenarios were retained and no significance was observed in terms of readability, understandability, and realistic, it is important to highlight the credibility and potential strength of all the scenarios under investigation. Given the possible minimum and maximum scores for each variable measured (min: 11; max: 77), the scores indicated that all 12 scenarios could be considered readable, understandable, and realistic.

2.3.3 Study 1a – Scenario Response Rating. Likert-scale data was collected for the proposed scenario responses (see Figures 2.6 and 2.7). The aim was to ascertain whether participants favoured responses to the scenarios written in the first- or third-person perspective (e.g., *Their actions are concerning. They should be dealt with accordingly and receive disciplinary action.* versus *My actions are concerning. I should be dealt with*

accordingly and receive disciplinary action.). For six scenarios, responses written in the third-person perspective were rated, and for six other scenarios, responses written in the first-person perspective were rated. For the scenario response rating, data revealed that responses to scenarios written in the first-person perspective received a total score of 189, and responses written in the third-person perspective performed better, with a total score of 192.

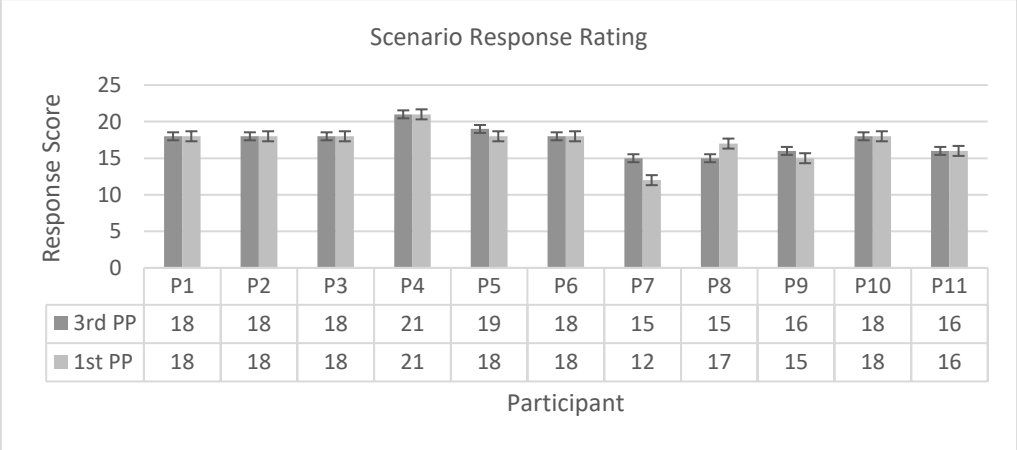

Figure 2.6 Scenario Response Rating

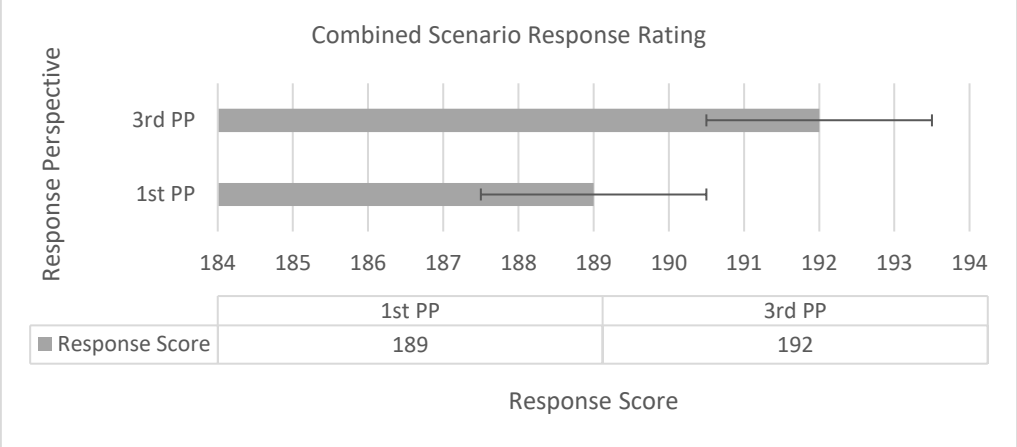

Figure 2.7 Combined Scenario Response Rating

In summary, the data revealed a minimal difference between responses written in the first-person perspective (189) and those written in the third-person perspective (192), however, those written in third-person perspective received higher Likert-scale ratings. This

was encouraging because the mixed-methods design was aimed at providing the researcher with both quantitative and qualitative data by combining both sources of data collectively in an effort to inform the development of the ATTS.

2.3.4 Study 1a—Qualitative Data. During the survey (Pilot Study 1a), the collection of qualitative data (see Table 2.2) proved vital in obtaining key information relating to readability and the use of terminology. All feedback was taken into consideration, and this strategy assisted in the development of the ATTS.

Table 2.2. Pilot Study 1a – Example of Qualitative data - Pre-Analysis.

Participant ID	Scenario 2: Comments
0411	Well written and clear scenario. No issues.
AK36	It is hard to judge realism in this case, to be honest. I've been doing triathlons for 6 year but actually never thought about [the] allowed thickness of the wetsuit.
1608	Scenario is clear and readable.
7347	Will most readers know what a 70.3 event is? [T]his needs to be explained or altered to make it more comprehensible to the lay person.
1906	Unsure what a 70.3 event is.

Thematic analysis was conducted (see Table 2.3), and the results provided key insights concerning each of the 12 scenarios, thus highlighting the importance of the pilot study and the impact of the process on the development of the ATTS.

Table 2.3. Pilot Study 1a – Thematic Analysis.

Theme	Subtheme	Example Code	Count

Readability	Content improvement (general and grammatical)	‘Also, from a readability perspective[,] you do not need the ; after however, instead you could simply write “product online, however,”’.	16
	Poor readability	‘I think the final sentence of the scenario is slightly less readable’.	3
	Ease of reading	‘In general, this reads well’.	4
Understandability	Difficult to understand	‘Unsure what a 70.3 event is’.	6
	Suggestion – Improving understandability	‘Will most readers know what a 70.3 event is? [T]his needs to be explained or altered to make it more comprehensible to the lay person’.	4
	Easy to understand	‘All makes sense’.	2
Realistic	Unrealistic scenario	‘I’m not sure how realistic it is to easily buy a sport drink that contains a prohibited substance’.	11
	Realistic scenario	‘This feels more realistic that some of the other, similar scenarios. The driver for action (sponsorship) possibly makes this feel more realistic’.	1

General	Poor survey functionality	'The box is a little small[,] meaning words are cramped together'.	4
	Scenario response recommendations	'The responses seem rather moralistic and focus very much on individual responsibility'.	4

The primary area of feedback was in relation to content improvements and these suggestions and recommendations were crucial to the development of the ATTS. While a number of participants suggested that scenarios were often 'well written and clear' and there were no changes required, others provided key insights for consideration. For example, in relation to readability and understandability, it was suggested that some long sentences, could be made shorter: '… some areas could be made simpler'. Suggestions such as these helped in adapting and restructuring some of the scenarios and their content during the development of the ATTS. In relation to Scenario 9, for example, two participants both suggested that the content was unrealistic, stating 'increasing endurance capacity by at least 35% is extremely unrealistic'. This scenario was closely reassessed and was subsequently removed from the measure due to this feedback and further data supporting its ineffectiveness.

Readability and understandability comments (both poor and good) and the feedback in relation to scenarios being unrealistic were insightful and a fundamental part of the developmental process. However, not all comments informed the development of the ATTS; rather, much of the feedback was based solely on participants' own life experiences—the experiences of honest rule-abiding individuals, not those who might wish to transgress rules. For instance, it was stated by one participant that 'I'm not sure how realistic it is to easily buy a sport drink that contains a prohibited substance'. Could this mean that it is unrealistic for

everyone, or is it unrealistic for this particular participant? There is no guarantee that any given dietary supplement does not contain prohibited substances. This comment was taken into consideration, but one could argue that the realism of the scenario would be dependent on the circumstances of the individual; that is, who is in their circle of friends, who are their contacts, and whether or not they have the knowledge to purchase such products. In addition, another participant stated, 'It is hard to judge realism in this case, to be honest. I've been doing triathlons for 6-years but actually never thought about [the] allowed thickness of the wetsuit'. Arguably, this comment is expected from an individual who wishes to remain within the boundaries of the rules; however, for those wishing to transgress the rules, such wetsuits are indeed available on the market. Hence, such wetsuits could indeed be purchased and used to gain a performance advantage, and therefore, one could argue that it is completely reasonable and realistic to suggest this as a method of transgression.

Scenarios 1, 5, 6, and 9 received the most feedback, but developmental changes were not influenced by the quantity of qualitative data; rather, each comment was carefully considered according to its credibility and on an individual basis. Both quantitative and qualitative data assisted in ascertaining which scenarios were not fit for research purposes and helped to shape the content of those that were.

2.3.5 Study 1b—Focus Groups – Qualitative Data. Braun and Clarke's (2006) thematic analysis revealed insightful information critical to the development of the ATTS. During this process, focus groups revealed key information that would ultimately drive developmental changes to the proposed measure (see Table 2.4).

Table 2.4. Pilot Study 1b – Focus Groups - Thematic Analysis.

Theme	Subtheme	Example Code	Count
Scenario Perspective	Favouring third-person perspective	'I felt, actually, it was easier to be more honest . . . when it's not first	4

		person, because I could detach myself from it'.	
	Support for first-person perspective	'Looking from the outside, it might be very easy for people to say "yes of course I wouldn't do that", whereas those who adopt the first-person perspective may make people think a little more deeply about the scenario'.	1
Scenario Content	Poor terminology and use of abbreviations	'Needed to re-read some things. Must make sure abbreviations are considered and terminology is clear for the triathletes'.	2
	Unrealistic scenarios	'I know it's difficult to create those transgressions; I guess I also had a problem with the thickness of the suit'.	2
	Realistic scenarios	'Some seems to be more believable that others'.	3
	Adequate scenario length	'The length of the scenarios [was] okay'.	4
	Too many scenarios	'I felt that with too many scenarios people might lose engagement [*sic*] as they go through'.	9
	Support for reducing measure to six scenarios	'[Reduce it by half] – towards the end, it was a bit long'.	5

	Support for using gender-neutral names	'It is absolutely appropriate to use gender-neutral names'.	3
	Effective fictional names for products	'I did actually think it was really creative … some of the terms used for the fictional products—it's quite believable'.	3
Scenario Responses	Need for simplification	'I know it's quite obvious to us what that means, but perhaps this could be simplified slightly'.	1
VVIQ	Support for its inclusion	'Measuring someone's [imaginative] ability could be quite useful, certainly in the scenarios'.	5
Qualtrics design	Improvements required	'The way you set up Qualtrics … the consent form was quite laborious [to go] through, [and] maybe this could be made shorter'.	3

The focus groups revealed insightful information on key areas of the ATTS, thus assisting in its development. First, there was clear support for the measure to be reduced from 12 to 6 scenarios to help respondents to maintain adequate focus. There was support for the use of gender-neutral names in the scenarios, as well as support for the inclusion of the VVIQ. It was revealed that scenarios written in the third-person perspective were more effective. The majority of participants agreed that scenarios written in the third-person perspective would potentially limit socially desirable responding. It was made clear that those who use the measure are likely to respond more freely, honestly, and more openly to third-

person scenarios. One participant claimed ‘I felt, actually, it was easier to be more honest . . . when it’s not first person, because I could detach myself from it’. This comment was further supported by the statement that ‘it is that kind of distancing effect you get when it’s somebody else, rather than yourself … it is easier to detach and then form an opinion’. However, not all participants were in agreement, with one participant opining, ‘looking from the outside, it might be very easy for people to say “yes of course I wouldn’t do that”, whereas those who adopt the first-person perspective may make people think a little more deeply about the scenario’. While this comment was acknowledged and taken into consideration, the majority of respondents concluded that socially desirable responding would be less prominent by using the third-person perspective approach.

During this phase of the pilot study, participants were asked to provide further information on how realistic they believed each scenario to be, and there were mixed opinions. For the fictional names used to describe banned substances and products, participants suggested that these were both believable and realistic. When asked to provide more thoughts, one participant stated, ‘I did actually think it was really creative … some of the terms used for the fictional products—it’s quite believable’. This comment was supported by one participant who asserted, ‘the fictional names were quite believable’ (see Figure 2.8).

‘Harley is a professional triathlete with over nine years of experience. Canadian-born, Harley moved to the United Kingdom, settling with a family and continuing to pursue a much-loved career as a professional triathlete. Being family-orientated, it is often difficult for Harley to juggle the demands of an unforgiving training regime and parent life. However, Harley remains disciplined and focused and continues to train hard regardless of other commitments.

This season has been poor for Harley. With only a couple of races left on the calendar, it is not possible to finish in a strong position and the championships are completely out of reach. Nevertheless, Harley does not want to finish in an even worse position than last year and decides to act. Harley purchases some TestAnabol, an injectable steroid which may improve endurance and race performance.

Harley's training has been going fantastically and race day quickly arrives, offering the perfect opportunity to see if improvements would be made because of the TestAnabol. The race finishes and Harley is delighted with a personal best time and a strong finish position. Fully convinced that TestAnabol may be the answer, Harley plans to continue using the product during off-season training in preparation for a more successful campaign the following year'.

Figure 2.8 ATTS Item

As previously mentioned, participants were in support of the third-person perspective format; however, a number of scenarios written in the first-person perspective were considered more realistic and credible in terms of their content. This meant that the researcher could adapt and alter some scenarios accordingly by simply changing their perspective during the final selection phase for the measure.

A key strategy for this pilot study was to understand which scenarios (if any) were more (or less) effective. In addition, it was important to ascertain at what point participants might lose focus when reading them (i.e., would the measure need reducing in size, and if so, by how much?). Participants agreed that the number of scenarios (i.e., measure length) needed to be reduced considerably. One participant asserted that 'participants might lose engagement [*sic*] if there are too many scenarios'. It was suggested that reducing the measure

from 12 to 6 scenarios would help maintain respondent focus, which ultimately could potentially improve the quality of the data obtained from it.

As highlighted within the qualitative results in Pilot Study 1a, for some participants, the difficulties of 'going inside the mind of a cheater' were clear. For an honest individual to imagine breaking the rules in the manner presented within some scenarios was a difficult objective. For instance, one participant stated, 'I remember thinking, is it likely for someone to go to these length if they're just an amateur?'. However, after further reflection, the participant came to a realisation: 'I realised that amateurs do cheat—we hear stories of people taking shortcuts on marathons'. During the development of the ATTS, the researcher took necessary steps to ensure that transgressions were both possible and realistic. It was somewhat anticipated that rule-abiding individuals might encounter difficulties imagining the lengths that amateur triathletes would go to in order to gain a performance advantage. One participant argued that it is not only professional athletes transgressing the rules: 'I think that even at [the] amateur level, people look [for] ways to cheat—I play amateur cricket and there is a lot of change in the bat sizes … erm, the materials in [the] bats … some people have still used those, even though they are not allowed to at [the] club level, because they know they will get away with it…'.

2.4 Discussion

The researcher initially hypothesised that the most realistic and well-written scenarios would receive the highest Likert-scale ratings. While all items were retained during analysis and no significant difference was observed, the study did, however, find that each variable, namely readability, understandability, and realistic, was rated highly according to the Likert-scale data. Due to this outcome, the qualitative component (Pilot Study 1b) became even more crucial in the development of the ATTS. The qualitative phase of this study identified that the measure should be shortened by half and that Scenarios 2, 4, 6, 7, 10, and 11 were

considered to be the most effective and realistic; therefore, they were included in the final measure. Scenarios 1, 3, 5, 8, 9, and 12 were considered to be less effective, and therefore, they were removed from the measure.

The implementation of both qualitative and quantitative techniques yielded crucial information necessary to make adaptations and improvements to the measure. Researchers recognise the value of a mixed-methods design for obtaining detailed contextualized information (Creswell et al., 2003); therefore, this study achieving its objective can be largely attributed to its design. While research purists might disagree with the use of a mixed-methods design (Doyle et al., 2009), this approach has gained popularity for its ability to collect a multitude of detailed data (Velez, 2008). For the current study, the collection of qualitative data through the implementation of focus groups was crucial, and researchers rightly argue that this process provides insights not attainable through general quantitative surveys (Jick, 1979).

Receiving expert opinions was both insightful and fundamental for the development of the ATTS and the next phase of this research programme (Chapter 3). For many researchers, a piloting process is a crucial part of the development process (Hassan et al., 2006) and common practice for those aiming to achieve a robust measure informed by expert opinion (Gifford et al., 2015; Papaioannou, 1994).

Here, the decision was made to reduce the size of the measure. Initially, it was a 12-item measure, but the pilot study was conclusive in its feedback suggesting that the measure be reduced to improve its effectiveness. Expert opinion informed the researcher that the 12 scenarios would potentially result in respondents losing focus, and therefore, it was agreed that the measure would be reduced from 12 to 6 items. From the 12 scenarios originally piloted, Scenarios 2, 4, 6, 7, 10, and 11 were considered to be the most effective and realistic and were therefore included in the final measure. With the measure reduced to six items (see

Appendix 2.10), the researcher was confident that respondents could answer each statement and maintain attention throughout the process.

Another key aspect of the development process was to determine which perspective (i.e., first-person or third-person) was suitable for the measure and more likely to elicit an unbiased response (or whether a mixture of both methodologies would be optimal). The third-person perspective proved to be more likely to elicit an honest opinion, thus potentially limiting socially desirable responding. The majority of participants in the pilot study agreed that those who use the measure will be more likely to respond freely, honestly, and more openly when reading scenarios written in the third-person perspective. Due to this feedback, Scenarios 7, 10, 11 (included in the final measure) were originally written in the first-person perspective; however, based on data from the pilot study (i.e., participants considered them to be realistic), they were subsequently changed to the third-person perspective and included in the final measure.

Further changes were also made to the measure, and these involved grammatical changes and terminology alterations. This process was crucial to ensuring each statement would be realistic and true to life. However, key information from the pilot study led to the measure being reduced in size, and the most effective perspective was ascertained. Nonresponse is a common issue associated with questionnaires and measures (Donald, 1960), and it is due to either poor design or the process being too time consuming for respondents to remain interested. Considering this, the pilot study achieved its objective of obtaining feedback that informed its development.

2.4.1 Limitations. The ATTS's developmental was informed by several factors and various strategies were employed to ensure vignettes were created robustly and were suitable for their intended purpose. A study by Skilling and Stylianides (2020) proposed a framework for developing effective vignettes, and put forth the following considerations: 1. conception,

2. design, and 3. administration. First, conception, or (devising and planning; Kreitler & Kreitler, 1987), consist of capturing content, realistic and hypothetical portrayals, and purpose. The ATTS's vignette development was a team approach. First, as HCPC registered sport psychologists with an abundance of experience and expertise in this area, both Dr Martin Turner and Dr Andrew Wood were instrumental in the ATTS's development. In addition, the researcher drew upon personal experiences. As a triathlon enthusiast for several years, the researcher incorporated lived experiences – making every effort to ensure credibility and realism.

The framework suggests that vignettes are often based on events, episodes, characters, and descriptions of real-life situations. During the creation of the ATTS's vignettes, the researcher ensured a high degree of realism by reviewing rules and regulations, as well as the current literature focusing on rule-breaking within triathlon (see Chapter 1: Typology of Transgression in Triathlon). Further to this, the framework stresses that this 'realism' element is crucial to ensuring that vignettes are credible. The final component of conception is purpose - meaning that vignettes are intended to elicit responses, encourage discussions, and probe for understandings. The ATTS and its six vignettes were developed to elicit a response to various acts of transgression. They were developed as a sole method of data collection, i.e., a standalone measure intended to elicit a response using a scale methodology.

The next core component of the framework is design, which consists of presentation, length, settings and terminology, open or closed questioning, participant perspectives, and piloting. As mentioned previously, the research team worked together - embarking on a year-long process by which of the aforementioned elements were addressed. Vignette length, terminology, written perspective, and more were critically discussed – resulting in drafting and redrafting the vignettes until the team were confident in their approach. For presentation, Skilling and Stylianides's framework suggests that vignettes should be designed according to

their aim and indeed, the sole purpose of the study. They can be 'static' and portrayed as a 'snapshot' of a situation, they may follow a developmental or narrative approach where the vignette unfolds through a series of stages, or they can be truncated. For the ATTS, the researcher adopted a narrative approach (Dakin & Giampapa, 2024) – meaning that the vignettes unfold through a series of stages. As an example, item-3 within the ATTS presents Finley, a fictional character portrayed as a triathlete. The vignette first details Finley's competitive experience, followed by their personal enjoyment and pastimes such coaching. The vignette then describes prior reasoning and explanation for the transgression about to ensue, as well as details of the transgression itself and even post-transgression content. When reading the vignette, the series of events unfolding through various stages becomes apparent. This approach was designed to take the reader/respondent on a journey - a detailed journey through Finley's eyes.

Following on from presentation, the next areas of design are vignette length, settings and terminology, open or closed questioning, participant perspectives, and piloting. Each of the aforementioned were considered during the creation of the ATTS's vignettes. First, the length. The framework suggests that written vignettes can range from fifty to several hundred words in length. Although the framework suggests that unfolding vignettes can be quite lengthy, for the ATTS's development, it was also paramount to make considerations for respondent fatigue (Steyn, 2017). Vignettes were therefore kept to a similar length of between 174 words and 244 words in an attempt to ensure that each vignette was written with the same or similar amount of depth to achieve consistency throughout.

In addition, the framework states that setting and terminology should be considered. It suggests that the participants' ability to respond to the vignette is crucial and therefore the setting and language used in the vignette should resonate with potential participants. Skilling and Stylianides puts forth the idea that names, gender, and use of gender-neutral language

should be considered. These guidelines (e.g., the use of gender-neutral language, and the adoption of language that would resonate with triathletes), were adhered to during the development of the ATTS (see Chapter 2: Procedure). Next, the framework focuses on open or closed questioning - suggesting that vignettes often ask for responses in a written form and can elicit detailed open-ended responses. For the ATTS, the researcher adopted a Likert scale approach for participants to respond to each vignette. In support of this methodology, the framework acknowledges that responses in a standardized format allows for potential differences to be analysed with ease. Further, it is also suggested that participant perspectives are also considered. As highlighted within the framework, the perspective from which participants are asked to respond to vignettes can vary depending on the purpose of the research. Skilling and Stylianides propose participant perspectives may include: the vignettes character's viewpoint, a general viewpoint, and the participant's personal viewpoint. Further to this, it is important to note that these aforementioned design elements (gender-neutral language, length, terminology, perspective, and more) would subsequently be examined closely during a pilot study.

The concluding component of 'design' within the framework, is piloting. Upon creation of the ATTS and its vignettes, a rigorous piloting phase took place – a common practice for those aiming to achieve a robust measure (Gifford et al., 2015; Papaioannou, 1994). While the researcher acknowledges that a pilot study does not guarantee success in the main study, the literature suggests that it does indeed increase its likelihood (Van Teijlingen & Hundley, 2002). The pilot study was carefully considered and key components mentioned previously were rigorously scrutinised. A review of the literature suggested that consulting experts within the field is a key element of the piloting phase (Harrison, 2012; Rattray & Jones, 2007); an approach adopted for the ATTS's development – with experienced academics and triathletes informing the measure's design, structure, content, methodology,

and more. Subsequently, the piloting phase played a crucial role in informing a multitude of changes, thus resulting in a robust 6-item, vignette-style measure suitable for research purposes.

The final of the three core components presented within the framework is administration, which includes: instructions, timing and responses, and delivery mode and frequency. In relation to the ATTS, the researcher created a brief written instruction to respondents, however, the researcher also acknowledges that additional instruction may have been beneficial. A study by Richman and Mercer (2002) focusing on vignettes used in behavioural sciences and health care suggested that participants often digress from the scenario to relate similar personal experiences. Considering this, adding a prompt to instruct participants to not draw upon their own personal experiences, may have perhaps been a valuable addition. The framework proceeds to discussing timing and response and highlights research by Stravakou and Lozgka (2018). The study investigated vignettes in qualitative educational research and puts forth the suggestion that vignettes are read separately and time is taken to comprehend the vignette and respond accordingly. The ATTS takes a similar approach – offering respondents time to carefully consider their responses.

The final component of administration and indeed, the framework, is delivery mode and frequency. The framework put forth by Skilling and Stylianides presents details and published suggestions regarding delivery - these include: presenting vignettes in paper form (Stecher et al., 2006), as well as electronic delivery, such as videos (Beilstein et al., 2017). The ATTS adopted a questionnaire-style approach that would be delivered using software such as Qualtrics. While the researcher acknowledges the various modes of delivery, by using the current method, the measure can be delivered both anonymously (e.g., digitally and online), and at various locations to suit the needs of the research programme. To conclude, the framework emphasises the importance of considering frequency – highlighting two

contrasting publications: repeated use of vignettes may lead to a loss of interest from respondents (Hughes & Huby, 2004), as well as support of using vignettes multiple times – claiming that change can be observed (Veal, 2002). Further to this, at this stage of the exploratory programme, the researcher plans to administer the vignettes one time per sample of participant. However, going forward (and if necessary), both valuable viewpoints with be considered accordingly. Finally, the researcher took the necessary steps to ensuring that a robust measure would be developed, and the same stringent and methodical approach will be continued throughout following explorations.

Due to the study taking place in the midst of the global COVID-19 pandemic, the researcher was forced to reconsider some design elements for this pilot study. Safety was paramount, and therefore, online focus groups rather than in-person focus groups were convened. On the one hand, online focus groups can save time and cost, and participants can be based anywhere in the world, thus providing researchers with convenience and flexibility. But on the other hand, during online focus groups, there is often a limited apprehension of body language, less group interaction, and often less input from those involved (Schneider et al., 2002). Considering this, under normal circumstances, this methodology would not usually be favoured. In addition, one participant (a triathlete) did not score adequately on the VVIQ, and due to this, their data were not included in results for this study. A further limitation to this study was the unavailability of all the participants for the scheduled focus groups. It is understandable that academics and athletes are busy people, and everything was done to arrange focus group sessions at a time suitable to everyone involved. However, this was not possible to achieve, and consequently, a couple of one-on-one interviews were conducted, and the same format used during the focus groups was implemented. While this was a slight deviation from the original study design, it must be emphasised that insightful feedback was obtained during all sessions, both group and one-on-one sessions.

2.5 Conclusion

The primary objective of this pilot study was to gain expert opinion and feedback to aid in the development of the ATTS. The researcher sought to gain knowledge from two perspectives; specifically, the researcher wished to gain expert opinion from academics regarding the design and methodology components of the measure, and the researcher sought informed feedback from the triathletes in the areas of terminology and realism. The objectives were met, and key information was attained. Subsequently, this information was carefully considered and discussed, and changes have been implemented as a result of this pilot study, ensuring the robust development of the ATTS. Experienced scholars and seasoned triathletes provided vital information leading to the adoption of a number of important developmental changes. Crucial feedback in relation to the written perspective, the length of the measure, and its terminology resulted from taking a proactive approach and strategically incorporating participants with experience and expertise in the areas of sport psychology, questionnaire design, and the sport of triathlon. Due to the developmental changes made as a result of this pilot study, and considering that these changes were informed by expert opinion, it is plausible to suggest that the ATTS will be more effective in achieving its intended objectives.

Moving ahead with the research, there is confidence in the measure because it has been piloted and created with the assistance of world-leading academic experts and experienced athletes. For the next phase of this research programme (Chapter 3), the research aimed to incorporate the developed six-item ATTS into a study using a sample of experienced triathletes. The objective was to understand how triathletes felt about various acts of transgression and, in doing so, to learn about their own moral standards, values, and personality characteristics. In addition to the ATTS, participants completed a number of additional questionnaires that were incorporated to capture key information about the

individual and their personality characteristics and to determine how these variables correlate with one another. The research aimed to understand what a lenient or punitive view of transgressive behaviour would highlight about those participants as individuals. Could it mean, perhaps, that if an athlete is more lenient towards transgressive behaviour (identified using the ATTS), that they too are more likely to commit acts of transgression? Ultimately, the next phase of research aimed to answer this question; however, the learning and development process continued and further improvements were considered, if necessary.

Chapter 3

Investigating Attitude Towards Transgression: A Theory of Planned Behaviour (TPB) Perspective

3.1 Introduction

Prior to the current study, the ATTS underwent a developmental phase. The researcher implemented recommendations and suggestions by published literature to ensure that the ATTS was developed methodically and robustly. As detailed within Chapter 2, the process of conducting a pilot study informed the development of the ATTS in several key areas. Experienced academics informed the measure's design, structure, and methodology. In addition, experienced triathletes provided crucial advice and feedback on areas such as content, use of terminology, and the measure's credibility. Following piloting, alterations were made to the measure's terminology, grammatical changes were implemented, and the written perspective was determined. Furthermore, items deemed unsuitable were removed. As such, the current ATTS consists of 6 vignette-style items, each presenting a fictional scenario of transgression within the sport of triathlon, written in the third-person perspective. The measure incorporates a 6-point Likert scale, to which respondents rate the severity, leniency, or support of the transgression by selecting the corresponding statement to each point on the Likert scale.

The current quantitative study incorporated the six-item ATTS into a cross-sectional and correlational design and used a sample of experienced triathletes. Considering the ATTS's intended purpose, (i.e., to measure attitude towards transgression), it was important to ascertain whether the measure is capable of measuring this accurately, therefore, the following criterion validity study aims to shed light on this research question (Amirkhan, 1994; Haertel, 1985; James, 1973). Validity testing is an empirical demonstration of the ability of a measure to record or quantify what it purports to measure, in other words, a process that will potentially give meaning to ATTS scores (Cizek, 2020; Raines-Eudy, 2000).

Criterion validity (or criterion-related validity) is an important process that highlights the extent to which a scale measures a specific idea or concept, and more specifically to the current study, one's attitude towards transgression in triathlon (Borsboom et al., 2004; Sireci, 1998).

To achieve criterion validity, the current study incorporated the 6-item ATTS into a quantitative cross-sectional and correlational survey design. With the ATTS corresponding to the 'attitude towards the behaviour' component of the TPB model (see Figure 3.1), the following variables were included in the design: measure of intention, past behaviour, subjective norms, personality traits, self-control, and athletic identity.

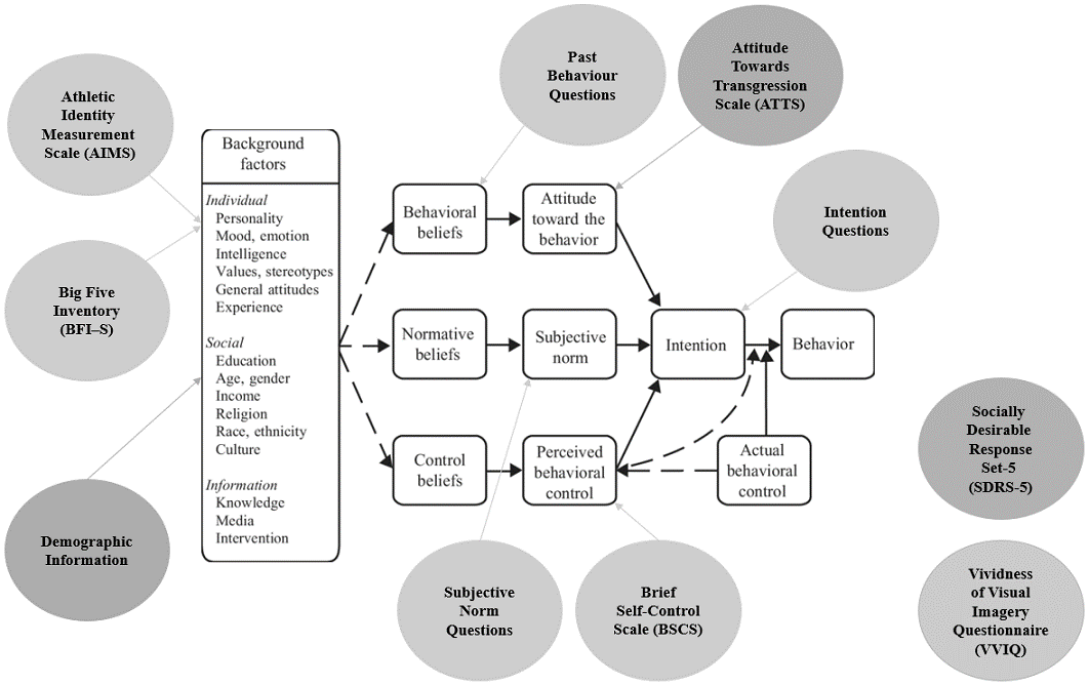

Figure 3.1 Adapted TPB Model

First, intention, past behaviour, and subjective norm measures were developed using the TPB item construction guidelines (Ajzen, 2006). Each measure consisted of three items and were strategically incorporated to capture key data supported by the theory of planned behaviour. Following an extensive review of the literature, the researcher hypothesised a strong association between the ATTS and intention, (i.e., those strongly opposed to

transgressive acts would have less intention to transgress rules themselves). To measure potential associations between the ATTS and personality traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness), the BFI-S was incorporated into the design. Researchers have suggested that emotion (a potential TPB background factor) may influence one's behaviour (De Pelsmaeker et al., 2017), therefore, the researcher hypothesised that personality traits, namely neuroticism, may be significantly associated with ATTS scores, (i.e., those high in emotional instability may exhibit leniency towards acts of transgression (Underwood et al., 2011). In addition, beliefs concerning the controllability of the behaviour (Sheeran et al., 2003; Terry & O'Leary, 1995) was assessed using the Brief Self-Control Scale (BSCS). Finally, the study featured the novel incorporation of an athletic identity measure. A review of the literature provided some evidence that one's athletic identity could potential be linked to behaviours in sport (Albouza et al., 2022; Mahmoud et al., 2022; Visek et al., 2010; Yukhymenko-Lescroart, 2018).

The theory of planned behaviour is a psychological theory detailing the process of one's behaviour and is made up of three main components: attitude towards the behaviour, subjective norm, and perceived behavioural control. The theory suggest that an individual's behaviour or actions are influenced and/or dependent upon these three components (Prati et al., 2014) and can be used to understand or even predict behaviours. While the TPB has been implemented as theoretical framework in previous studies with similar objectives —for instance, explaining academic misconduct such as plagiarism in Stone et al. (2010) and deviant behaviour in young athletes in Kang and Kim (2021)—the current project is unique in its development and piloting of the 'attitude towards the behaviour' component of the TPB model. Unlike much research, the current project did not attempt to ascertain attitude towards a 'general' behaviour but aimed to understand attitude towards transgression specifically—a sensitive area with increased risk of socially desirable responding. As mentioned previously,

the study included a number of additional measures (independent variables; IVs), many of which represented components of the TPB. Research supports the TPB as a framework suitable for explaining and predicting dishonest intentions (Beck & Ajzen, 1991). For instance, the intentions to perform behaviours of different kinds can be predicted by an individual's attitude towards the behaviour (Ajzen, 1991). Following an extensive review of the literature, the current programme of research employed the TPB as a model to explain the process of transgressive behaviour among triathletes.

Finally, the current study was conducted to test the aforementioned hypotheses and to continue the learning and developmental process, making further improvements to the ATTS where necessary.

3.2 Method

3.2.1 Participants. Upon receiving ethical approval from Manchester Metropolitan University (see Appendix 3.1), the researcher recruited 126 'All Gender' participants. No equal gender split was required for this study. The sample consisted of experienced triathletes with a minimum of 3-years' experience competing in amateur and/or professional competitions. The sample size was determined for the 'Correlation: Bivariate' normal model using G*Power. A recommended sample of 84 was calculated using the following parameters: Tail = 2; Correlation p H1 = 0.3; α err prob = 0.05; Power (1-β err prob) = 0.80; correlation p H0 = 0. For this study, a sample of 126 was recruited (M_{age} = 47.69, SD_{age} = 10.42). Participants were primarily from an amateur triathlon background (M_{exp} = 7.29, SD_{exp} = 5.25), with only four athletes having professional experience (M_{exp} = 0.13, SD_{exp} = 0.92). Participant consent (see Appendix 3.2) was obtained prior to data collection. An inducement of earning £3 for their affiliated triathlon club was offered to participants for taking part in the study (see Table 3.1 for demographic data).

Table 3.1. Demographic Data.

Variables	Percent
Biological Sex	
Male	(58.73)
Female	(41.27)
Current Gender Identity	
Male	(57.94)
Female	(42.06)
Relationship Status	
Married	(65.87)
In a Relationship	(15.87)
Single	(8.73)
Divorced	(7.14)
Widowed	(1.59)
Separated	(0.79)
Employment Status	
Full-Time	(59.52)
Part-Time	(14.29)
Self-Employed	(15.87)
Unemployed	(0.00)
Student	(0.00)
Retired	(10.32)
Unable to Work	(0.00)
Race Experience	
10+ Races	(64.29)
7-9 Races	(11.90)
4-6 Races	(12.70)
1-3 Races	(11.11)
Preferred Race	
Sprint	(34.13)
Olympic	(31.75)
Half Ironman 70.3	(19.05)
Full Ironman	(7.94)
ITU Long Course	(0.00)
No Preference	(7.14)
Education Level	
Level 8	(7.94)
Level 7	(26.19)
Level 6	(41.27)
Level 5	(2.38)
Level 4	(3.17)
Level 3	(4.76)
Level 2	(9.52)
Not Specified	(4.76)
Geographical Location	
West Yorkshire	(30.95)
Devon	(15.87)
Midlothian	(12.70)
Norfolk	(10.32)
Surrey	(7.14)

Lincolnshire	(5.56)
Hertfordshire	(4.76)
Staffordshire	(3.17)
Conwy Country Borough	(2.38)
Nottinghamshire	(2.38)
Worcestershire	(2.38)
West Dunbartonshire	(1.59)
Cumbria	(0.79)

3.2.2 Research Design. The cross-sectional and correlational design incorporated a quantitative approach. The criterion validity study is crucial to establish a connection between ATTS scores and intention, supported by the TPB framework. Upon the recruitment of one sample of UK-based participants, the study took the form of an online Qualtrics survey aimed at investigating potential correlations between the measures highlighted in the following section. IBM Statistics 26 was used to conduct Pearson correlation coefficient analysis and multiple regression analysis.

3.2.3 Measures.

3.2.3.1 Vividness of Visual Imagery Questionnaire (VVIQ). The VVIQ (Marks, 1973) measures the vividness of one's imagination and is proven to be an accurate test of the vividness with which one can imagine people, objects, or settings in the mind (Walczyk & Hall, 1988). The current study's inclusion of the ATTS, a vignette-style measure written in the third-person perspective, meant that the ability to imagine clearly was an essential skill required by participants. With scores given using a 5-point Likert scale and each point on the scale representing a statement (anchors: 1 = *No image at all* [only 'knowing' that you are thinking of the object], 5 = *perfectly clear and as vivid as normal vision*), the VVIQ (see Appendix 2.7) was a key element of the current study.

3.2.3.2 Attitude Towards Transgression Scale (ATTS). Developed through a pilot study and informed by expert feedback (see Chapter 2), the ATTS was incorporated into the current design to represent the 'attitude towards the behaviour' component of the TPB. The

six-item ATTS (see Appendix 2.10) was designed to obtain respondents' opinions and views on various acts of transgression. The ATTS is answered with a 6-point Likert scale; respondents use the scale to select the statement that most accurately reflects their own views of the behaviour presented in each item of the measure (anchors: 1 = *their actions should be commended, such attempts to gain success in sport are positive and should be encouraged* and 6 = *their actions are severely alarming*). The implementation of the ATTS was aimed at learning about possible relationships between responses to the measure and data obtained from additional measures included in the study.

3.2.3.3 Big-Five Inventory (BFI-S). The BFI-S (Gerlitz & Schupp, 2005; John & Srivastava, 1999) is a 15-item measure used for assessing personality traits. The BFI-S incorporates a 7-point Likert scale, with each point on the scale representing a statement (anchors: 1 = *strongly disagree*, 7 = *strongly agree*; see Appendix 3.7). The measure has been used in studies investigating a multitude of research questions, such as individual differences in relation to coping strategies and personality differences between athletes and nonathletes (Allen et al., 2011; Steca et al., 2018). Measuring extraversion, agreeableness, conscientiousness, neuroticism, and openness (Kaiseler et al., 2019), the BFI-S was incorporated into the current study to investigate potential relationships between personality characteristics and respondents' attitude toward transgression.

3.2.3.4 Socially Desirable Response Set-5 (SDRS-5). The SDRS-5 (Hays et al., 1989) is a five-item measure designed to assess the degree to which self-report responses may be influenced by social desirability (i.e., the tendency to give socially desirable responses). The SDRS-5 incorporates a 5-point Likert scale, with each point on the scale representing a statement (anchors: 1 = *definitely true*, 5 = *definitely false*). One of the primary objectives during the piloting of the ATTS was to develop a measure that limits socially desirable responding; this required certain considerations, and the inclusion of the SDRS-5 (see

Appendix 3.11) was a design strategy implemented to assess participants' level of social desirability.

3.2.3.5 Athletic Identity Measurement Scale (AIMS). The AIMS is a 10-item quantitative inventory that measures the level of the respondent's athletic identity (Brewer et al., 1993). The AIMS incorporates a 7-point Likert scale, with each point on the scale representing a statement (anchors: 1 = *strongly disagree*, 7 = *strongly agree*; see Appendix 3.8). The measure includes items such as 'I consider myself an athlete' and 'Sport is the most important part of my life' and measures the three factors of social identity, exclusivity, and negative affectivity (Burns et al., 2012). The AIMS was incorporated into the current design to investigate the possible relationship between athletic identity and responses to the ATTS.

3.2.3.6 Brief Self-Control Scale (BSCS). The BSCS (Tangney et al., 2004) is one of the most widely used instrument for measuring general trait self-control (Lindner et al., 2015). The 13-item quantitative measure (see Appendix 3.9) incorporates a 5-point Likert scale, with each point on the scale representing a statement (anchors: 1 = *not at all like me*, 5 = *very much like me*) and presents statements such as 'People would say that I have iron self-discipline' and 'I refuse things that are bad for me'. Extensive research has used the BSCS to understand self-control (Ent et al., 2015; Li & Vazsonyi, 2021), and studies support its use over the refined version of the measure, the BSCS-R (Pechorro et al., 2021). Representing the 'perceived behavioural control' (IV) component of the TPB, the BSCS was incorporated into the current study to understand the relationship between participant behavioural control and intention (DV).

3.2.3.7 Subjective Norm, Intention, and Past Behaviour. Three measures (see Appendix 3.10) were developed in accordance with the 'Constructing a Theory of Planned Behaviour Questionnaire' guidelines (hereinafter, TBP Questionnaire guidelines; Ajzen,

2006). Research suggests that the intention to perform behaviours of different kinds can be predicted with high accuracy from attitude towards the behaviour, subjective norms, and perceived behavioural control (Ajzen, 1991). In addition, past behaviour is strongly associated with behavioural beliefs, which in turn determine behaviour (Norman et al., 2000). The *intention* questions incorporate a 7-point Likert scale, with each point on the scale representing a statement (anchors: 1 = *agree*, 7 = *disagree*). *Subjective norm* questions incorporate a 7-point Likert scale, with each point on the scale representing a statement (anchors: 1 = *agree*, 7 = *disagree*). *Past behaviour* questions incorporate a 7-point Likert scale, with each point on the scale representing a statement (anchors: 1 = *false*, 7 = *true*). The measures (subjective norm, intention, and past behaviour), were included in the current design to investigate potential relationships with responses to the ATTS and, ultimately, as supported by the TPB, to learn more about the potential relationship between subjective norm and intention.

3.2.4 Procedure

For the current study, purposive sampling was employed. A sample of triathletes with a minimum of 3-years' experience competing in amateur and/or professional triathlons was recruiting for the study. Purposive sampling refers to the random selection of sampling units within the segment of the population with the most information on the characteristic of interest (Guarte & Barrios, 2006). Initially, the recruitment process began by using a social media channel on Twitter. The social media channel was dedicated to triathletes, both professional and amateur; however, due to this recruitment process being ineffective, an alternative method of recruitment was adopted. An email was created (see Appendix 3.4), and a new strategy for recruitment began. UK-based triathlon clubs were contacted directly, and club managers were asked to circulate details of the study to their members to gain interest from eligible participants. The email provided comprehensive details of the study and also

offered the triathlon club the chance to earn money for their valued participation. They were informed that once their club members visited the survey, they would be required to specify which triathlon club they were affiliated with and that upon completion of the study, the principal investigator would pay £3 per survey completed directly to the club. Triathlon club managers were given the opportunity to consider the proposal and request for participants and were asked to email the principal investigator with their interest. Once triathlon clubs responded and indicated their willingness to participate, the survey link, along with the participant information sheet, was issued.

Triathlon club managers circulated details of the study through their newsletters and posted recruitment advertisements to their social media channels. Once club members agreed to participate, they visited the Qualtrics link to the study. Qualtrics is a simple web-based survey tool for conducting survey research, evaluations, and other data collection activities. On the initial pages of the Qualtrics survey, participants were presented with an introduction to the study, an information sheet, and a consent form for digital signatures. Participants were provided with an adequate opportunity to read the information and to consider their involvement before agreeing and giving their consent to complete the study. All study information and the consent form were made clear so that participants completely understood the nature of the research. All those involved in the study were provided with the contact details of the principal investigator and the supervisory team. If at any time participants wanted to ask questions or obtain any further information before giving their consent, they were encouraged to do so by using the contact details provided. Participants were informed that if they agreed and consented to participate, they would continue to the next section, the demographics section. The following demographic information was obtained: age, gender, biological sex, ethnicity, relationship status, highest level of education, current employment status, competitive experience in years, number of triathlons completed, preferred race

distance, and details of their triathlon club. Upon completion of the demographics section, participants completed the 16-item VVIQ, a brief questionnaire that measures the vividness of visual imagery. Participants were then be presented with the ATTS; next, participants completed the BFI-S; SDRS-5; AIMS; BSCS; and subjective norm, intention, and past behaviour questions developed in accordance with the TPB Questionnaire guidelines. The study concluded with a participant debrief. The debrief included the study title, researcher's name and contact details, a 'thank you' statement, and an explanation of why the study was important (i.e., hypothesis, aims, and research question). Furthermore, the participants were reminded that they could withdraw their consent and their participation at any time. Participants were also offered the opportunity to view the study data/results upon request and were advised that they could obtain additional information in relation to the research if they wished.

3.2.5 Analysis. Prior to the main analyses, data were screened for missing values. Analysis was performed using SPSS, and no missing values were identified within the data set. The data were also screened for outliers (standardised z values > 3.29; Hahs-Vaughn, 2016). Five outliers were identified: ATTS = 2 outliers; intention measure = 1 outlier; conscientiousness measure = 1 outlier; past behaviour measure = 1. Outliers were Winsorized (n = 5 from 1,625 cases = 0.31%; Tokunaga, 2018). VVIQ scores were analysed, and one participant was removed from the results due to scoring less than the predetermined threshold of 32, and therefore, 125 participants were included in the main analysis.

The main analyses comprised the following four stages: analysis of social desirability bias, correlation analysis, hierarchical multiple linear regression, and curvilinear/quadratic regression. First, analysis of social desirability bias was performed to ascertain whether or not ATTS scores were subject to SDR. High scores in SDR, and correlations between self-report instruments, indicate the possible distortion of respondents' answers on self-report

questionnaires (Paulhus & Trapnell, 2008). Second, correlation analysis, a statistical method used to quantify the strength of the linear relationship between two variables and compute their association, was performed to investigate and examine the nature of relationships between measures included within the study (Hazra & Gogtay, 2016; Stowe et al., 1980). Third, hierarchical multiple linear regression was conducted to assess explained variance in intention (dependent variable; DV) after accounting for the IVs. Fourth, curvilinear (quadratic) relationships were explored to learn more about potential nuanced associations. Unlike linear regression, which assumes that the relationship between the predictor X and the outcome Y is linear, a parabolic best-fit curve is crucial when the data relationship appears curvilinear. This analysis provided the researcher with a more detailed understanding of existing relationships between variables (Clogg et al., 1995; Gogtay et al., 2017; Mitchell & Beauchamp, 1988).

3.3 Results

3.3.1 Social Desirability. Correlation analysis was performed between the ATTS and the SDRS-5. The results revealed that ATTS scores were not subject to SDR ($\beta = -.253$, $p > .05$).

3.3.2 Relationships Between Variables. Pearson's correlation analyses revealed significant associations between intention and three variables. First, a negative association between intention and the ATTS was revealed ($r = -.283$, $p < .01$). This finding suggested that high ATTS scores (i.e., corresponding to an attitude firmly against acts of transgression) were associated with lower scores in intention; thus, individuals with such scores are less likely to show signs of an intention to break the rules. Data also revealed the following two positive associations with intention. First, high intention scores were associated with high subjective norm scores ($r = .388$, $p < .01$). This association means that individuals with a perception of social expectations to adopt a dishonest behaviour, tend to have greater intent to

transgress rules themselves. In addition, an association was revealed between intention and past behaviour (r= .402, p < .01). This finding suggests that participants who have (to some degree) acted or considered acting without integrity in the past, also show greater intent to transgress rules.

In relation to the ATTS, a further two associations were identified. First, a positive association between ATTS scores and self-control (r = .187, p < .05). This finding suggested that higher ATTS scores (i.e., corresponding to those individuals firmly opposed to transgression) were significantly associated with having greater self-control. Second, there was a significant negative association between the ATTS and subjective norms (r = −.187, p < .05). This result indicates that for those individuals firmly opposed to transgression, they also tend to perceive social expectations to adopt honest behaviour.

Further analysis revealed significant positive associations between several other independent variables. First, extraverted individuals were significantly associated with openness (r= .182, p < .05). Data also revealed a positive association between conscientiousness and self-control (r= .531, p < .01). This finding indicates that conscientious participants, i.e., those who are hard-working, responsible and organised, also tend to have a greater level of self-control. Further, data revealed that high scores in athletic identity, were associated with high scores on the irrational performance beliefs inventory (r= .378, p < .01). This finding indicates that individuals with a strong athletic identity, i.e., they deeply define themselves as an athlete, tend to also have greater irrational beliefs. High subjective norm scores were associated with high scores on the past behaviour measure, i.e., those individuals who have acted devoid of integrity in the past (r= .400, p < .01). There were three positive associations with gender. First, between gender and emotion (r= .285, p < .01). This finding indicates that females score higher in emotion (i.e., they tend to exhibit greater emotional instability). Next, gender and agreeableness (r= .334, p < .01). This finding indicates that

females score higher in agreeableness (i.e., they tend to be kind, sympathetic, cooperative, warm, honest, and considerate). Finally, gender and conscientiousness (r= .176, p < .05). This finding indicates that females score higher in conscientiousness (i.e., they tend to be responsible, careful, or diligent).

Negative associations were also identified between several variables. First, the association between self-control and past behaviour (r= -.220, p < .05). This finding indicates that participants with greater self-control, also tend to act with integrity by adhering to the rules in the past. Further, individuals with greater self-control were also negatively associated with emotion (r= -.189, p < .05); meaning they tend to have greater emotional stability. Data also showed an association between self-control and subjective norms (r= -.207, p < .05) – indicating that individuals with greater self-control, tend to have less perceived social pressure or expectation to engage in rule breaking behaviour. Further, participants with greater self-control, also score lower in iPBI – meaning they are less prone to irrational beliefs (r= -.244, p < .01). In addition, it was also revealed that older individuals (age) are also less prone to irrational beliefs (r= -.276, p < .01).

To conclude the associations identified through correlation analyses, it was revealed that individuals scoring high in conscientiousness, i.e., those who are hard-working, responsible and organised, tend to score lower in subjective norm (r= -.283, p < .01). It was also revealed that gender negatively associated with past behaviour (r= -.235, p < .05). This finding suggests that females, rather than males, tend to act with integrity by adhering to the rules in the past.

3.3.3 Modelling Variable Importance. A hierarchical multiple regression analysis was carried out, with intention as the outcome variable. The hierarchical multiple linear regression was created in six stages, first focusing on fixed traits. Age was entered in Step 1. Gender was entered into Step 2. The five personality traits of the BFI-S (emotion,

extraversion, openness, agreeableness, and conscientiousness) were entered in Step 3. AIMS entered in Step 4. Past behaviour was entered in Step 5. The ATTS, self-control, and subjective norms were entered in Step 6.

Analysis revealed that Stages 1–4 did not significantly predict intention ($p > .05$). The results suggested that Stage 5 of the hierarchical multiple regression (the inclusion of past behaviour) significantly predicted intention ($p < .01$). In addition, Stage 6 of the hierarchical multiple regression (the inclusion of the ATTS, subjective norm, and self-control) significantly predicted intention ($p < .01$).

A further standardised coefficient investigation in relation to Stage 5 of the hierarchical multiple regression revealed that past behaviour significantly predicted intention ($\beta = .466$, $p < .01$). This finding suggests that individuals with less intention to transgress rules also tend to act with integrity by adhering to the rules in the past. Further, and in relation to Stage 6, data showed that subjective norm significantly predicted intention ($\beta = .243$, $p < .01$). This finding means that individuals with a perception of social expectations to adopt a dishonest behaviour, tend to have greater intent to transgress rules. It was also revealed that the ATTS significantly predicted intention ($\beta = -.175$, $p < .05$). This findings shows that participants who scored low on the ATTS (i.e., they are more lenient towards acts of transgression), score high in intention (i.e., they show signs of greater intention to transgress rules). Finally, self-control (added in Stage 6) did not significantly predict intention ($p > .05$).

3.3.4 Predictor Variable and Response Variable. In the linear regression and the correlation matrix, some evidence suggested that the ATTS is related to intention (DV). Curvilinear/quadratic relationships were explored, and the results indicated a stronger relationship than that shown in the linear model between the ATTS and intention ($R^2 = .135$, $p < .001$). The graphed data (Figure 3.2) displayed a U-shaped curve depicting this nonlinear

relationship between ATTS and intention scores. Thus, lower ATTS scores were associated with moderate sample intention scores. That is, those who score lowest and highest in intention are more likely to also score highly on the ATTS.

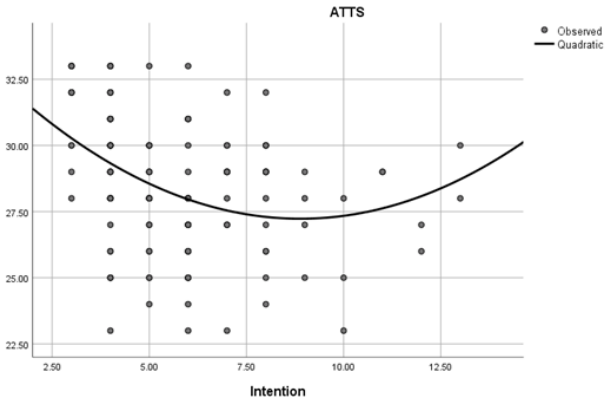

Figure 3.2 Quadratic Model – Intention and the ATTS

3.4 Discussion

The current study revealed that the TPB can (to some degree) contribute to understanding transgression in triathlon. Through correlation analysis, the aim was to highlight potential associations between intention and the ATTS, among others. Arguably the most compelling findings of this investigation were the associations between intention and the ATTS, subjective norms, and past behaviour. In addition, data showed that the same three variables (ATTS, subjective norms, and past behaviour) significantly predicted intention in the regression model, and this will be discussed in the following literature.

First, the correlation between intention and the ATTS was hypothesised prior to the study. This finding suggests that individuals firmly opposed to acts of transgression, measured using the ATTS, are less likely to show signs of an intention to break the rules. Linear regression analysis revealed the ratio of change between the ATTS and intention to be constant, and therefore, each variable could potentially predict each other, reciprocally. Further, curvilinear/quadratic analysis provided a more detailed explanation of the association between intention and the ATTS. The analysis revealed that lower ATTS scores

were associated with moderate intention scores. In addition, the analysis revealed that those individuals who scored lowest and highest in intention were more likely to score highly on the ATTS. Considering this, these scores could potentially be used as a benchmark to predict transgressive behaviour. However, before this can be asserted with a high degree of certainty, further research is needed.

There was an additional correlation which further supported the theory of planned behaviour – the association between subjective norms and intention. This association suggested that individuals with a perception of social expectations to adopt a dishonest behaviour, tend to have greater intent to transgress rules themselves. The two previously mentioned variables (attitude and subjective norm) are key components of the TPB and therefore, these findings are encouraging. However, self-control (a third key component of the theory) was not significantly associated with intention.

While analyses revealed associations between personality traits and other IVs, there were no correlations between personality and the ATTS. As a result, the current study revealed very little insights in relation to the ATTS and personality. Further, the researcher previously hypothesised that personality traits may be significantly associated with ATTS scores. A prior review of the literature suggested that some traits were predictors of cheating behaviour (Nicholls et al., 2020), therefore, it was somewhat anticipated that an association would be revealed.

The six-step hierarchical multiple regression analysis provided further insight. First, the inclusion of age (a fixed trait entered in Stage 1) did not predicted intention. According to previous research, age is often an influencing factor in relation to behaviour (Newstead et al., 1996; Steiner et al., 2011). Researchers have identified that older adults are more willing to forgive others than are younger adults, and that cheating behaviour was found to be more common in younger individuals. Furthermore, Stages 2, 3, and 4, (the inclusion of gender, the

five personality traits, and athletic identity) also did not predict intention. In contrast, previous researchers have revealed that females were said to be less accepting of cheating than male (Potgieter, 2013). Stage 5 (the inclusion of past behaviour) significantly predicted intention. Further to this, it is plausible to consider that those with a less intention to transgress rule, would indeed, tend to act with integrity by adhering to the rules in the past. Stage 6, the inclusion of the theory's three core components (i.e., the ATTS, Subjective norm, and self-control), revealed that the attitude and subjective norms significantly predicted intention. With the exception of self-control, these findings are supported by previous research which identified a positive relationship between attitude and behaviour, and that attitude, subjective norms, and perceived behavioural control were significant predictors of cheating behaviour (Bandura, 1977; Ibañez, 2020).

3.4.1 Limitations. The findings of this study should be considered within the context of its limitations. Some ATTS items described scenarios leaning towards the professional context, and therefore, the recruitment of additional triathletes with professional experience is a necessity for future investigations. Furthermore, the survey-style design incorporated several lengthy measures that inevitably resulted in relatively lengthy completion times. It is thus plausible to suggest that diminished attention and focus may have impacted the data.

3.5 Conclusion

Researchers can learn much from the current study and, indeed, its challenges. First, a review of the current literature emphasised that investigating transgression in sport, is particularly challenging. Sensitive subject matters such as these require considerable thought and planning due to the increased risk of SDR. Due to this, the researcher heeded previous research, took note of their shortcomings, and implemented a rigorous developmental phase (see Chapter 2).

The current study was the first exploration to incorporate the ATTS and a sample of experienced triathletes. The quantitative cross-sectional and correlational study aimed to investigate potential correlations between intention and several other variables, including the ATTS. The ATTS and its unique third-person perspective design significantly predicted intention to transgress rules. This finding was encouraging because previous research revealed that attitude towards doping correlated positively with cheating behaviour (Nicholls et al., 2020). Considering this, and the findings from the current study, the ATTS may be capable of predicting actual transgressive behaviour. However, before we can truly understand the ATTS's potential, further research is required. A recommendation for further development in relation to the ATTS's rating scale is crucial and this will be explained in more detail (see Chapter 4).

To conclude, an extensive review of the literature prompted the researcher to take an innovative approach to designing the ATTS. The current study was the first investigation using the ATTS; its objective of understanding the associations between the strategically incorporated IVs underpinned by the TPB, was achieved. Further, the current exploration revealed that the TPB can (to some degree) contribute to understanding transgression in triathlon. Two of the three TPB's core components (attitudes and subjective norms) significantly predicted intention. While the study and its findings were encouraging, further development is paramount to the ATTS's validation process.

Chapter 4

Data-Informed Changes to the ATTS

4.1 Introduction

The ATTS underwent piloting to gain expert opinion and feedback to ensure that the novel measurement tool would be robust and suitable for research purposes. Following a thorough investigation of the current literature, the piloting phase ensued with a focus on several key areas such as content, format, and the construction of each vignette-style question presented in the questionnaire. The researcher followed stringent developmental guidelines—conducting a mixed-methods pilot study which informed the development of the ATTS through the acquisition of feedback and expert knowledge on key areas of the measure. Although the ATTS underwent piloting, the pilot study was designed to obtain expert feedback on readability and understandability, the written perspective, measure length, and item length, among other aspects. The piloting phase was not designed to fully understand how the ATTS would perform under study conditions. The previous study (Chapter 3)—a criterion validity study, was the first opportunity to examine the ATTS using a sample of experienced triathletes. Considering this, the previous study was not only vital in obtaining various insightful data, but was also crucial for potentially highlighting the need for continued development and improvements.

Upon completion of Chapter 3, data revealed that the TPB can contribute to understanding transgression in sport, to some degree. Correlation analysis revealed key associations between intention and the ATTS, athletic identity, subjective norms, and past behaviour. In addition, the ATTS, subjective norms, and past behaviour significantly predicted intention in the regression model. While the findings were encouraging, upon close inspection of the data, a key issue was identified. The following literature will provide details of this issue, as well as put forth an explanation and rationale for further developmental changes to potentially improve the effectiveness of the ATTS.

4.2 Further ATTS Developments

For the previous study (see Chapter 3) the ATTS incorporated a 6-point Likert scale, to which respondents rate the severity, leniency, or support of the transgression by selecting the corresponding statement to each point on the Likert scale (see Figure 4.1). The 6-point Likert scale incorporated statements of leniency and severity, and two statements (Points 1 and 2 on the Likert scale) in support for transgressive acts.

1.	2.	3.	4.	5.	6.
Their actions should be commended; such attempts to gain success in sport is positive and should be encouraged.	Their actions are acceptable, and it is their right to make every effort to maximise results through any means they so desire.	Given the circumstances, I have a neutral opinion on this, and I have nothing to say regarding their actions.	Their actions are somewhat concerning, but exploiting the rules in this way does not warrant punishment.	Their actions are concerning. They should be dealt with accordingly and receive disciplinary action.	Their actions are severely alarming. The athlete should endure the strictest penalties.

Figure 4.1 Former ATTS 6-Point Likert Scale

The previous study's findings informed the researcher that improvements were required due to limited utilisation of Likert scale Points 1 and 2 (responses in support of transgression) as shown below (see Figure 4.2).

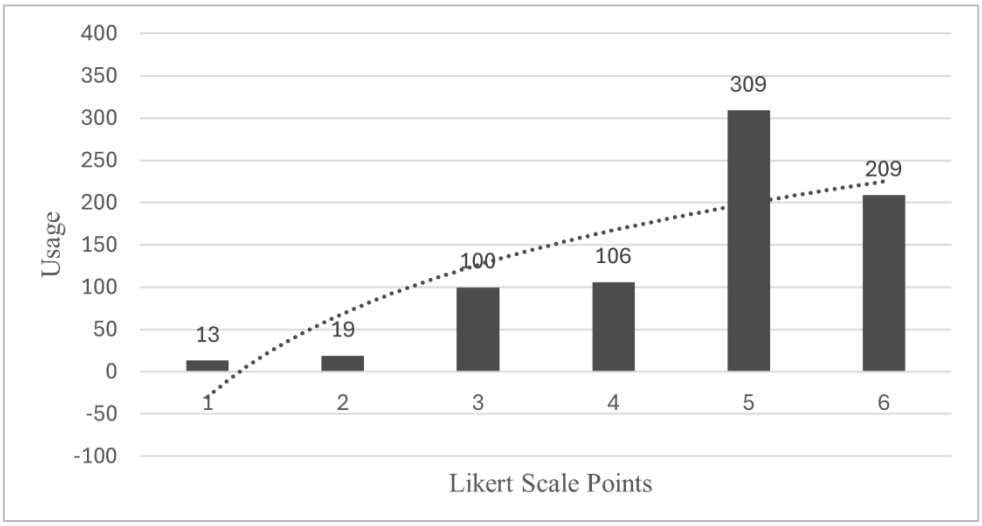

Figure 4.2 Current Rating Scale Usage

In light of study 2 (Chapter 3), the researcher suggested that the scale should be replaced with an improved design: the ATTS Severity Scale (see Figure 4.3). The reasons for this are twofold: first, one of the primary considerations throughout the ATTS's development was to limit potential bias (i.e., SDR). Normal distribution analysis of the ATTS scores revealed that participants predominantly gave ratings between 3.83 and 5.5 and only utilised around 67% of the scale. As such, we might conclude that the respondents consciously avoided selecting Likert scale Points 1 and 2, in support of transgressive acts. Second, the modified severity scale was aimed at providing a greater response range. This will be elaborated on in more detail in the following literature.

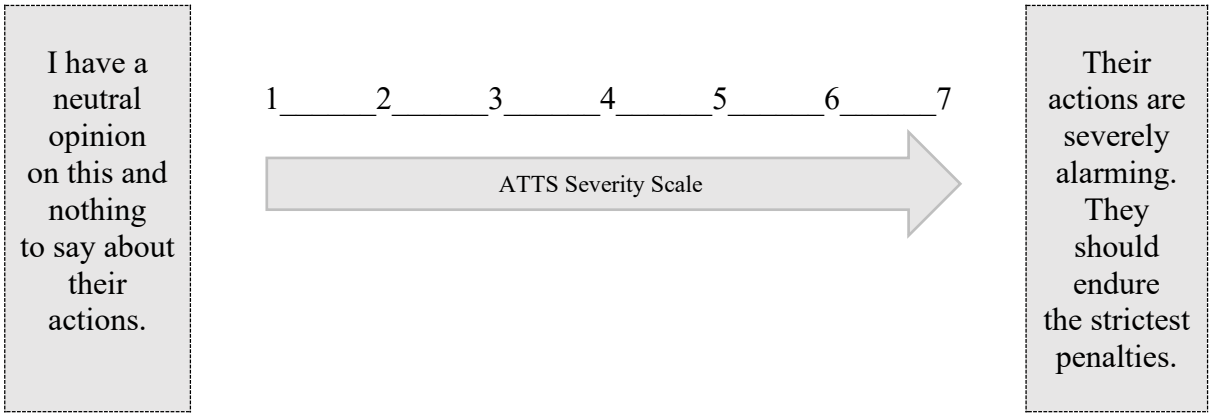

Figure 4.3 Improved ATTS Severity Scale

As mentioned previously, study 2 was somewhat of an extension of the piloting and developmental phase, and thus, potential design modifications were anticipated. As a result of this development, the researcher anticipates that the ATTS will prove more effective during the following exploration (see Chapter 5).

4.3 Explanation of Changes

A Likert scale is often applied in educational and social sciences research, however, they are subjected to debate in relation to both analysis and scale size (Joshi, 2015). Developed by Rensis Likert, an American psychologist (Johns, 2010), rating scales require the respondent to select their answer from a range of verbal statements or numbers. The range of possible responses for a scale can vary, typically 5- or 7-point formats are the most common (Dawes, 2008), however, researchers have advised the use of 7-point Likert scales (Taherdoost, 2019). Note that the severity scale (above) is unlike many conventional Likert scales; for instance, 7-point Likert scales often centralise the neutral point (i.e., Point 4 = *neutral*). This is suitable for researchers when there is a need to have respondents directed to one side or another (Taherdoost, 2019); however, many scales such as these are undermined by a lack of reliability and response style bias (Dolnicar, 2021). Presented in a similar fashion to a slider scale (Funke et al., 2011; Imbault et al., 2018; Roster et al., 2015), the ATTS's new severity scale, on the other hand, is unlike many of these widely used scales in that its unique design incorporates neutral at the *lowest* point of the scale (Point 1). This neutral response represents the most lenient attitude towards the behaviour: 'I have a neutral opinion on this and nothing to say about their actions'. The scale also includes the highest rating of 7 (*maximum severity*) and is the most severe attitude towards the act of transgression: 'Their actions are severely alarming. They should endure the strictest penalties'. In addition, rather than providing participants with a dropdown menu to select points on the scale, the new methodology incorporates a text box, where participants can rate between points if they wish (e.g., 2.5, 4.5, 6.5), thus potentially providing a more precise representation of a respondent's attitude towards transgression. Furthermore, in an attempt to limit response style biases, a tendency to respond inaccurately (McGrath et al., 2010), this unique approach may arguably slow the speed of responding, thus potentially providing an opportunity for respondents to carefully consider their response.

The decision to change the rating scale, rather than merely remove the first two unutilised Likert scale points, was based primarily on two fundamental factors: First, this strategy would leave only four options for respondents to select (see Figure 4.4).

~~1.~~	~~2.~~	~~3~~ **1**	~~4~~ **2**	~~5~~ **3**	~~6~~ **4**
~~Their actions should be commended; such attempts to gain success in sport is positive and should be encouraged.~~	~~Their actions are acceptable, and it is their right to make every effort to maximise results through any means they so desire.~~	Given the circumstances, I have a neutral opinion on this, and I have nothing to say regarding their actions.	Their actions are somewhat concerning, but exploiting the rules in this way does not warrant punishment.	Their actions are concerning. They should be dealt with accordingly and receive disciplinary action.	Their actions are severely alarming. The athlete should endure the strictest penalties.

Figure 4.4 Example 4-Point Scale

As per the literature (Dawes, 2008; Finstad, 2010), 5- or 7-point formats are most commonly used in psychological research. Researchers report very little positivity in relation to a 4-point Likert scale, with some suggesting that a larger scale increases sensitivity (Adelson & McCoach, 2010; Leung, 2011; Xu & Leung, 2018). Second, the modified severity scale was designed to provide participants with a greater response range. Due to the measure containing questions of a sensitive nature, it is imperative that, for future explorations, data is obtained that is a true and precise representation of one's attitude towards transgression. The severity scale, with its unique design incorporating between—point—rating aims to address this concern.

4.4 Conclusion

In summary, although the ATTS underwent piloting, it was not adequate to consider the developmental phase as, concluded. Following the criterion validity study, the researcher proactively implemented further necessary changes to improve the effectiveness of the measure. For the following exploration, the researcher anticipates that the new severity scale

will improve the ATTS and thus potentially strengthen existing correlations, as well as reveal additional associations between variables. Furthermore, the researcher anticipates that a stronger linear relationship will be revealed between potential predictors of intention - in contrast to the previous study, which revealed a stronger quadratic relationship between intention and the ATTS, for example. Finally, it is expected that overall, data more accurately representing relationships between variables will be revealed due to the implementation of a more precise rating scale.

Chapter 5

Attitude Towards Transgression Scale (ATTS):

A Criterion Validity Study

5.1 Introduction

The aim of this programme of research was to develop a questionnaire designed to measure attitude towards rule-breaking among triathletes, thus contributing new knowledge to the area of transgression in triathlon. The development of the ATTS began with a mixed-methods pilot study (see Chapter 2) that recruited experienced academics and triathletes. Upon its creation, the ATTS was incorporated into a quantitative cross-sectional and correlational study assessing criterion validity (see Chapter 3). A number of factors informed the researcher that the ATTS's rating scale required developmental changes; the researcher hypothesised that these design changes would ultimately improve the effectiveness of the measure (see Chapter 4 for further ATTS developments).

For the current study, the objective was to re-examine the effectiveness of the ATTS and, in doing so, validate its ability to predict the intention to transgress rules within the sport of triathlon. To achieve this, the current study employed the same methodology as in Chapter 3 - incorporating the 6-item ATTS into a quantitative cross-sectional and correlational survey design. The researcher hypothesised that high ATTS scores (i.e., corresponding to attitudes firmly opposed to transgression) would score low in intention, meaning that they would have less intention to transgress rules themselves, and vice versa. It was anticipated that many of the correlations identified during the previous exploration (see Chapter 3) would be found. Further, due to the implementation of the ATTS's newly designed rating scale, the researcher hypothesised that these associations would be stronger (i.e., between the ATTS and intention) and that additional correlations between variables could potentially be revealed. Primarily, the current study was conducted to test the aforementioned hypothesis as well as to assess the ATTS's reliability.

5.2 Method

5.2.1 Participants. Upon ethical approval from Manchester Metropolitan University (see Appendix 4.1) the researcher recruited 162 'All Gender' participants (M_{age} = 46.70, SD_{age} = 12.00). No equal gender spilt was required for this study. The sample consisted of experienced triathletes with a minimum of 3-years' experience competing in amateur and/or professional competitions. Adequate sample size was determined for the 'Correlation: Bivariate' normal model using G*Power. A sample of 84 was recommended using the following parameters: Tail = 2; Correlation p H1 = 0.3; α err prob = 0.05; Power (1-β err prob) = 0.80; correlation p H0 = 0. Participants were primarily from an amateur triathlon background (M_{exp} = 9.29, SD_{exp} = 8.00), with only 10 athletes having a combined 64.00 years' professional experience (M_{exp} = 6.40, SD_{exp} = 5.02). Participant consent (see Appendix 4.2) was obtained prior to data collection. A financial inducement of $4 was offered to participants' affiliated triathlon club for taking part in the study (see Table 5.1 for demographic data).

Table 5.1. Demographic Data.

Variables	Percent
Biological Sex	
Male	(52.47)
Female	(47.53)
Current Gender Identity	
Male	(51.85)
Female	(45.68)
Non-Binary	(1.23)
Did Not Disclose	(1.23)
Relationship Status	
Married	(69.75)
In a Relationship	(11.73)
Single	(9.88)
Divorced	(3.70)
Widowed	(2.47)
Separated	(2.47)
Employment Status	
Full-Time	(66.04)
Part-Time	(11.11)

Self-Employed	(11.73)
Unemployed	(0.00)
Student	(2.47)
Retired	(8.64)
Unable to Work	(0.00)
Race Experience	
10+ Races	(65.43)
7-9 Races	(14.20)
4-6 Races	(7.41)
1-3 Races	(12.62)
Preferred Race	
Sprint	(31.48)
Olympic	(30.25)
Half Ironman 70.3	(25.31)
Full Ironman	(8.02)
ITU Long Course	(0.00)
No Preference	(4.94)
Education Level	
Level 8	(3.70)
Level 7	(37.65)
Level 6	(40.74)
Level 5	(1.85)
Level 4	(4.32)
Level 3	(3.70)
Level 2	(2.94)
Not Specified	(3.09)
Geographical Location	
Longford, IRE	(14.20)
Yorkshire, UK	(10.49)
British Columbia, Ca	(8.02)
Michigan, USA	(7.41)
Alberta, Ca	(6.79)
New Jersey, USA	(6.79)
Ontario, Ca	(6.17)
Somerset, UK	(6.17)
California, USA	(5.56)
Tennessee, USA	(4.94)
Oxfordshire, UK	(4.94)
Hampshire, UK	(4.32)
Florida, USA	(3.09)
Surrey, UK	(2.47)
Cheshire, UK	(1.85)
Midlothian, UK	(1.85)
Hertfordshire, UK	(1.23)
Lancashire, UK	(0.62)
Location Not Specified	(3.09)

5.2.2 Research Design. Upon the recruitment of one sample of UK-, US-, Ireland-, and Canada-based participants, the study took the form of an online Qualtrics survey aimed at investigating potential correlations between the measures highlighted in the following section. The criterion validity study is crucial to establish a connection between ATTS scores and the independent variables supported by the TPB framework, thus the more likely the ATTS is to predict transgressive behaviour. The cross-sectional and correlational design incorporated a quantitative approach. IBM Statistics 26 was used to conduct Pearson correlation coefficient analysis and multiple regression analysis.

5.2.3 Measures.

5.2.3.1 Vividness of Visual Imagery Questionnaire (VVIQ). The VVIQ (Marks, 1973) measures the vividness of one's imagination and is proven to be an accurate test of the vividness with which one can imagine people, objects, or settings in the mind (Walczyk & Hall, 1988). The current study's inclusion of the ATTS, a vignette-style measure written in the third-person perspective, meant that the ability to imagine clearly was an essential skill required by participants (see Appendix 2.7).

5.2.3.2 Attitude Towards Transgression Scale (ATTS). Piloted, developed, and informed by previous research (see Chapter 2 and 3), the ATTS was incorporated into the current design to represent the 'attitude towards the behaviour' component of the TPB. The six-item ATTS (see Appendix 2.10) was designed to obtain respondents' opinions and views on various acts of transgression (i.e., their attitude towards rule-breaking). The measure incorporates the newly designed severity scale, which is a bespoke rating scale with neutral (Point 1 on the scale) representing the most lenient attitude towards the behaviour: 'I have a neutral opinion on this and nothing to say about their actions'. The scale also includes the highest rating of 7, which is the most severe attitude towards the act of transgression: 'Their actions are severely alarming. They should endure the strictest penalties'. In addition, and

unlike many conventional rating systems, the scale incorporates a text box, where participants can rate between points (e.g., 2.5, 4.5, 6.5), thus providing a more precise representation of the respondent's attitude towards transgression.

5.2.3.3 Big-Five Inventory (BFI-S). The BFI-S (Gerlitz & Schupp, 2005; John & Srivastava, 1999) is a 15-item measure used for assessing personality traits (see Appendix 3.7).

5.2.3.4 Socially Desirable Response Set-5 (SDRS-5). The SDRS-5 (Hays et al., 1989) is a five-item self-report measure designed to assess the degree to which self-report responses may be influenced by social desirability (see Appendix 3.11).

5.2.3.5 Athletic Identity Measurement Scale (AIMS). The AIMS is a 10-item quantitative inventory that measures the level of athletic identity (Brewer et al., 1993). The measure was incorporated into the current design to investigate the possible relationship between athletic identity and responses to the ATTS (see Appendix 3.8).

5.2.3.6 Brief Self-Control Scale (BSCS). The BSCS (Tangney et al., 2004) is one of the most widely used instruments for measuring general trait self-control (Lindner et al., 2015). The BSCS was incorporated into the current study to understand the relationship between participant behavioural control and responses to the ATTS (see Appendix 3.9).

5.2.3.7 Subjective Norm, Intention, and Past Behaviour. Three measures (see Appendix 3.10) were developed in accordance with the TPB Questionnaire guidelines (Ajzen, 2006). The measures (subjective norm, intention, and past behaviour), each incorporating three questions, were included in the current design to investigate potential relationships with responses to the ATTS and, ultimately, to understand more about the TPB as a model to explain transgressive behaviour within the sport of triathlon.

5.2.4 Procedure

The current study began with the recruitment of 162 participants. First, purposive sampling was employed, and to achieve the required sample, the researcher used social media channels, as well as emailing triathlon clubs directly. UK-, US-, Ireland-, and Canada-based triathlon clubs were approached and asked to circulate details of the study to their members. The researcher provided details of the study and also offered the club a financial inducement. For example, once their club members visited the survey, they were required to specify which triathlon club they were affiliated with, and upon completion of the study, the researcher paid $4 (or equivalent) per survey completed directly to the club. Club managers were given the opportunity to consider participating and to read further information about the study. Eligible and keen participants visited the Qualtrics link and began their survey. On the initial pages of the Qualtrics survey, participants were presented with an introduction to the study, an information sheet, and a consent form containing a digital signature request. Participants were provided with an adequate opportunity to read the information and consider their involvement before agreeing and giving their consent to complete the study. All information was made clear so that participants completely understood the nature of the research. All those involved in the study were provided with the contact details of the principal researcher and the supervisory team. If at any time participants wanted to ask questions or obtain any further information before giving their consent, they were encouraged to do so using the contact details provided. Participants were informed that if they agreed and consented to participate, they could continue to the next section, the demographics section. The following demographic information was obtained: age, gender, biological sex, ethnicity, relationship status, highest level of education, current employment status, competitive experience in years, number of triathlons completed, preferred race distance, and details of their triathlon club. Upon completion of demographic information, participants engaged in the same procedure as outlined in the previous study (see Chapter 3).

5.2.5 Analysis. Prior to the main analyses, the data set was screened for missing values. SPSS was used to conduct the analysis, and no missing values were identified. Data were also screened for outliers (standardised *z* values > 3.29; Hahs-Vaughn, 2016). Seven outliers were identified: ATTS = 2 outliers; conscientiousness = 2 outliers; past behaviour = 3 outliers. All outliers were Winsorized ($n = 7$ from 2,093 cases = 0.33%; Tokunaga, 2018). In addition, VVIQ scores were analysed, and one participant was removed from the results due to achieving less than the predetermined threshold score of 32; therefore, 161 participants were included in the main analysis. The current study employed the same steps during analyses as the previous study (see Chapter 3). These steps included the following four stages: analysis of social desirability bias, correlation analysis, hierarchical multiple linear regression, and curvilinear/quadratic regression.

5.3 Results

5.3.1 Social Desirability. Correlation analysis was performed between the ATTS and the SDRS-5. The results revealed that ATTS scores were not associated with SDR scores ($\beta = -.151$, $p > .05$).

5.3.2 Relationships Between Variables. Pearson correlation analysis revealed significant associations between intention and the following IVs: ATTS, subjective norms, self-control, past behaviour, and agreeableness. First, the negative association between intention and the ATTS ($r = -.348$, $p < .01$). This finding suggests that high ATTS scores (i.e., corresponding to an attitude firmly against acts of transgression) were associated with lower scores in intention (i.e., individuals who are less likely to show signs of an intention to break the rules). A further negative association was identified between intention and self-control ($r = -.203$, $p < .01$). This finding suggests that those with greater self-control have less intention to transgress rules. A third negative association between intention and agreeableness ($r = -.219$, $p < .01$) indicates that those with attributes relating to

greater interpersonal warmth, empathy, and cooperation, tend to have less intention to break the rules. There were also two positive association revealed. First, between intention and subjective norms (r = .336, p < .01). This finding indicates that individuals with a perception of social expectations to adopt a dishonest behaviour, tend to have greater intent to transgress rules themselves. Second, between intention and past behaviour (r = .398, p < .01). This finding suggests that participants who have (to some degree) acted or considered acting without integrity in the past, also show greater intent to transgress rules.

There were a further three associations revealed between the ATTS and other variables. First, a significant positive association was found between the ATTS and conscientiousness (r = .185, p < .05). This finding indicated that those individuals opposed to rule-breaking behaviours tend to be more punctual, harder working, responsible, and reliable. A further association between ATTS scores and athletic identity (r = .164, p < .05) suggested that those strongly opposed to transgression have a high athletic identity (i.e., they consider themselves to be an athlete, and sport is of the utmost importance in their lives). Finally, higher ATTS scores were associated with higher self-control (r = .232, p < .01), indicating that those opposed to rule-breaking tend to possess greater levels of self-control.

Further analysis revealed significant positive associations between a number of independent variables. First, the correlation between extraversion and agreeableness (r= .194, p < .05) suggests that extraverted individuals (i.e., those who are sociable, talkative, and assertive), tend score higher in agreeableness (i.e., they are more polite, friendly and cooperative). Further to this, those individuals scoring higher in agreeableness also scored higher in conscientiousness (r= .251, p < .01) and self-control (r= .337, p < .01). This finding indicates that these individuals tend to be hard-working, responsible and organised, as well as having a greater level of self-control. In addition to this, data revealed a significant association between those scoring high in conscientiousness and self-control (r= .597, p <

.01). Data also revealed an association between athletic identity and past behaviour (r= .185, p < .05). This finding suggests that individuals with a strong athletic identity (i.e., they deeply define themselves as an athlete), tend to have acted or considered acting without of integrity in the past. There was an association between subjective norms and past behaviour (r= .228, p < .01). This finding suggests that those with a greater perception of social expectations to adopt an honest behaviour, tend to have acted with integrity in the past. Finally, for positive correlations, it was revealed that greater one's age (i.e., older participants) the greater their level of self-control (r= .186, p < .05).

Negative associations were also revealed between several variables. First, those individuals scoring high in emotional instability (i.e., they have disturbed thinking patterns, impulsive behaviour, and negative emotions), tend to score lower in extraversion (r= -.214, p < .01). This finding indicates that individuals with greater emotional instability, tend to be less extraverted. Further, high emotional instability was also associated with low scores in agreeableness (r= -.337, p < .01); conscientiousness (r= -.213, p < .01), and self-control (r= -.289, p < .01). In addition, high conscientiousness scores correlated with lower subjective norm scores (r= -.189, p < .05) – indicating that more punctual, harder working, responsible and reliable individuals, tend lower perception of social expectations to adopt an honest behaviour. There were negative associations between self-control and past behaviour (r= -.260, p < .01), and self-control and subjective norms (r= -.209, p < .01). These findings suggest that those with a greater level of self-control, tend to have a greater perception of social expectations to adopt an honest behaviour, as well as acting with integrity in the past. There were two associations with age and gender. First, the association between age and emotion (r= -.251, p < .01) suggests that younger individuals tend to score higher in emotional instability. Finally, an association between gender and past behaviour (r= -.181, p < .05) suggests that females, rather than males, tend to have acted with integrity in the past.

5.3.3 Modelling Variable Importance. A hierarchical multiple regression analysis was carried out, with intention as the outcome variable. The hierarchical multiple linear regression was created in six stages, first focusing on fixed traits. Age was entered in Step 1. Gender was entered into Step 2. The five personality traits of the BFI-S (emotion, extraversion, openness, agreeableness, and conscientiousness) were entered in Step 3. AIMS entered in Step 4. Past behaviour was entered in Step 5. The ATTS, self-control, and subjective norms were entered in Step 6.

Analysis revealed that Stages 1–4 did not significantly predict intention ($p > .05$). The results suggested that Stage 5 of the hierarchical multiple regression (the inclusion of past behaviour) significantly predicted intention ($p < .01$). In addition, Stage 6 of the hierarchical multiple regression (the inclusion of the ATTS, subjective norm, and self-control) significantly predicted intention ($p < .01$).

A further standardised coefficient investigation in relation to Stage 5 of the hierarchical multiple regression revealed that past behaviour significantly predicted intention ($\beta = .411$, $p < .01$). This finding suggests that individuals with less intention to transgress rules also tend to act with integrity by adhering to the rules in the past. Further, and in relation to Stage 6, data showed that subjective norm significantly predicted intention ($\beta = .212$, $p < .01$). This finding means that individuals with a perception of social expectations to adopt a dishonest behaviour, tend to have greater intent to transgress rules. It was also revealed that the ATTS significantly predicted intention ($\beta = -.248$, $p < .01$). This findings shows that participants who scored low on the ATTS (i.e., they are more lenient towards acts of transgression), score high in intention (i.e., they show signs of greater intention to transgress rules). Finally, self-control (added in Stage 6) did not significantly predict intention ($p > .05$).

5.3.4 Predictor Variable and Response Variable. Curvilinear/quadratic relationship was explored and revealed a significant association between ATTS scores and intention (R^2 = .128, p < .01; see Figure 5.1). However, the quadratic relationship was not stronger than the linear model.

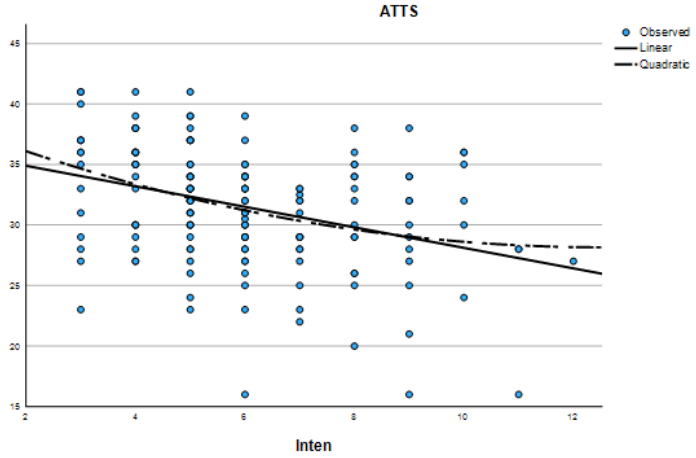

Figure 5.1 Quadratic – ATTS and Intention

5.4 Discussion

Prior to the current study, a previous exploration using the same design and methodology (see Chapter 3) identified some concerns regarding the ATTS's rating scale and its validity. Due to normal distribution analysis revealing that participants predominantly rated items between 3.83 and 5.5 and only utilised a small percentage of the ATTS's scale, the researcher was concerned that respondents were perhaps deliberately avoiding rating in support of transgressive acts. Consequently, the researcher suggested that improving the measure's rating scale was crucial for the ATTS's validation process, and therefore, the current study incorporated the newly design severity scale. As a result of this, it was found that the new and improved severity scale provided a more evenly distributed rating to the ATTS (see Figures 5.2 and 5.3 for old vs. new rating scale usage comparison).

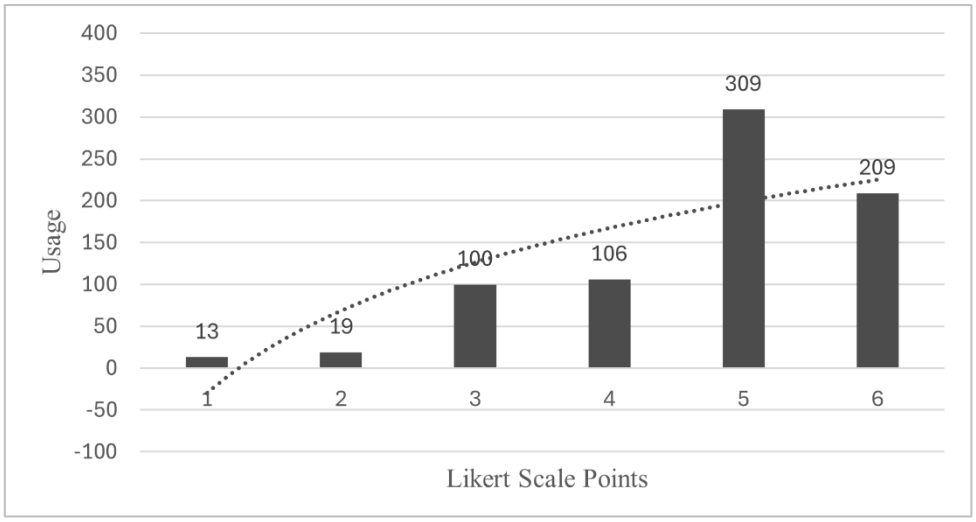

Figure 5.2 ATTS – Previous Rating Scale Usage

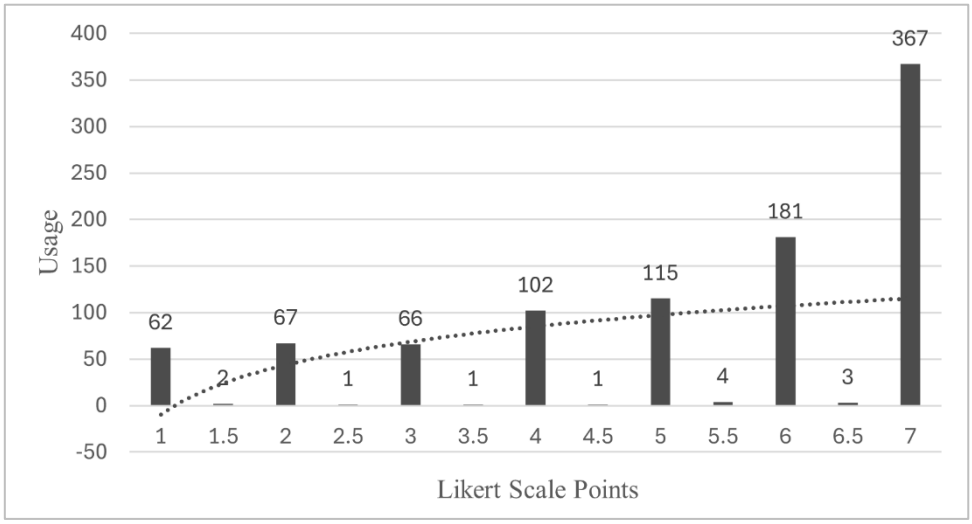

Figure 5.3 ATTS – New Rating Scale Usage

Pearson's correlation analyses revealed insightful associations between intention and the ATTS, subjective norms, self-control, past behaviour, and agreeableness. First, it is important to highlight that these findings are arguably more encouraging than the previous study's results (see Chapter 3). Unlike the previous study, which found associations between intention and the ATTS and subjective norms, the current investigation also revealed a significant association between intention and self-control (i.e., all three components of the theory of planned behaviour). For the current study, the negative association between

intention and the ATTS indicated that athletes opposed to acts of transgression tend to report less intention to break the rules. Taking into account the ATTS's development process, this finding was anticipated and, indeed, hypothesised. Whether in a sporting or nonsporting context, the link between attitude and intention is comprehensively supported by the literature. For instance, researchers examining cheating amongst students found that intention strengthens the positive relationship between attitude and behaviour (Ibañez, 2020). In addition, further research has revealed that attitude towards doping is positively correlated with cheating behaviour (Nicholls et al., 2020). Considering these findings by Nicholls et al., it can be suggested, with a great degree of confidence, that the ATTS could potentially predict actual cheating behaviour. Further, unlike the previous study where specific ATTS scores were identified as a greater predictor (see Chapter 3), the current study indicated that predicting transgression is linear (i.e., the higher one scores on the ATTS, the less intention they have to transgress; thus, one is less likely to commit acts of transgression).

There were a further three associations revealed between the ATTS and conscientiousness, athletic identify, and self-control. First, the association between high ATTS scores and high conscientiousness means that athletes firmly opposed to transgressive behaviours tend to be more punctual, harder working, responsible, and reliable. Previous research supports this, suggesting that conscientiousness is an interpersonal strategy for dealing with the members of one's group (Hogan & Ones, 1997) and is a trait largely associated with lower criminal activity (Roberts et al., 2009). Other studies indicate that individuals low in conscientiousness exhibit a persistent pattern of dishonest behaviours, such as theft (Hogan & Hogan, 1989). In addition, and within the realm of sport, research has found that conscientiousness is negatively associated with doping (i.e., people high in conscientiousness oppose the use of performance-enhancing substances; Nicholls et al., 2019), a finding consistent with the current study.

A further association between ATTS score and athletic identity suggested that those more opposed to transgression tend to strongly define themselves as an athlete; this is a fascinating finding that can be viewed from two alternate perspectives. First, one could argue that those with a strong athletic identity would likely have a greater desire to win (i.e., they become more goal-oriented). This assumption is based upon goal orientation theory, a social-cognitive model that examines the relationship between people and goals (Emmons & Kaiser, 2014). Further, it has been suggested by researchers that athletes with a strong athletic identity are likely to violate the rules (Visek et al., 2010); however, findings from the current study oppose this notion. The current study found a positive relationship between the two variables, and further research supports these findings, revealing positive relationships between athletic identity and moral values (Albouza et al., 2022; Mahmoud et al., 2022). While these findings relate to values rather than 'attitude' towards transgression, these findings are somewhat consistent with the findings from the current study.

The association between ATTS score and self-control suggests that those opposed to rule-breaking tend to possess greater levels of self-control. There has been a vast amount of research focusing on self-control and rule-breaking behaviours (Gailliot et al., 2012). Within the realm of transgression in sport, Erickson et al. (2015) found that various factors such as having a strong moral stance against cheating, an identity beyond sport, self-control, and resilience to social group pressures influence the likelihood of doping. Further research supports these findings, suggesting that athletes with low self-control are more likely to have a heightened attitude and intention towards doping and a reduced intention, behavioural adherence, and awareness of doping avoidance (Chan et al., 2015). Considering this, the association between the ATTS and self-control is encouraging.

This discussion will now focus on the six-step hierarchical multiple regression and its findings. First, and similarly to study 2 (see Chapter 3), age and gender did not significantly

predict intention. Previous research has shown that age is often an influencing factor in a wide array of studies (Steiner et al., 2011), and that cheating was found to be more common in younger students than in mature ones (Newstead et al., 1996). The notion that as one gets older, one tends to become more opposed to rule-breaking is arguably related to the 'aging-honesty-effect' (Frias & O'Connor, 2024). Researchers have also identified that females are less accepting of cheating than males, and that genders are affected differently by social pressures (Hunt et al., 2003). However, for the current study, an individual's age and gender did not predict their intention to transgress rules. The hierarchical multiple regression found that attitude (ATTS), subjective norms, and past behaviour significantly predicted intention, therefore the current study revealed that the TPB can (to some degree) contribute to the understanding of transgression in sport. The TPB has been used as a framework to explain rule-breaking behaviour across various areas of research (Ajzen & Schmidt, 2020; Elliott et al., 2007; Hobbs et al., 2013).

Finally, it has been well documented that asking sensitive questions increases the risk of socially desirable responding (Donaldson & Grant-Vallone, 2002); therefore, the ATTS underwent piloting in an attempt to limit this possibility. The researcher implemented 'forgiving' wording, used gender neutral names, disguised the purpose of the questionnaire, employed a third-person perspective approach to the vignette-style measure, among other practices. Further, the participants completed the study in private, presumably without potential influences such as their coach's presence, for example. For the current study, correlation analysis revealed that ATTS scores were not subject to SDR. This finding indicates that participants were not responding to the ATTS in a socially desirable way (i.e., responses to the ATTS were a true and accurate representation of their actual thoughts). The researcher attributes this encouraging finding to the ATTS's rigorous development process,

and recommends that all future research aiming to achieve a similar objective (i.e., ask questions of sensitive nature) should follow the same stringent protocol.

5.4.1 Limitations. The findings of this study should be considered within the context of its limitations. An objective for this study was to recruit US-based participants, but due to limited responses, the study had to recruit additional participants from Canada, Ireland, and the UK. Furthermore, only 10 participants (6.21%) of the sample had professional experience. Due to some ATTS items describing scenarios leaning towards the professional context, the recruitment of additional triathletes with professional experience would have been desirable. Finally, the survey-style design incorporated several lengthy measures that inevitably resulted in relatively lengthy completion times. It is thus plausible to suggest that diminished attention and focus may have impacted the data.

5.5 Conclusion

It is evident that the ATTS, subjective norms, and past behaviour significantly influences an athlete's intention and that the TPB is, to some degree, a suitable theoretical framework for explaining rule-breaking behaviour among triathletes. Further, the ATTS and its unique design provided insight into asking sensitive questions effectively. One of the primary objectives during the ATTS's piloting phase was to design the measure in a manner that would limit the possibility of SDR. Seasoned athletes and experienced academics were recruited to assist in its development by providing their expertise in relation to the written perspective, measure length, the terminology, and so forth. As a result of this, during this study and the previous study (see Chapter 3), ATTS scores were not subject to social desirability – indicating that bias was not detected, thus, the researcher has made an important contribution to the existing literature and provided an effective strategy for further researchers to build upon.

Chapter 6

General Discussion

6.1 Summary of Findings

The primary aims of this thesis were to develop and validity test a novel self-report measure for assessing attitude towards transgression in the sport of triathlon. Through piloting, the Attitude Towards Transgression Scale (ATTS) was created. Based on the 'Attitude towards the Behaviour' component of the Theory of Planned Behaviour (TPB), the vignette-style measure was incorporated into a quantitative cross-sectional and correlational study using samples of experienced triathletes. Subsequently, developmental changes were implemented and the ATTS was re-examined using a similar methodology.

First, the pilot study (Pilot Study 1a), adopted a mixed-methods approach and was followed up with Pilot Study 1b, a series of focus groups carried out to capture additional qualitative data to support the development of the measure. Quantitative analysis found no significant differences between any of the twelve items presented to participants, and all items were rated relatively highly for being readable, understandable, and realistic. Pilot Study 1b proved decisive in informing the development of the ATTS. Grammatical changes were made and terminology was altered, and through verbal discussion and thematic analysis, it was revealed that the measure should be reduced in size from twelve items to six items. Scenarios 2, 4, 6, 7, 10, and 11 were considered to be the most effective and realistic, so they were included in the final measure. Scenarios 1, 3, 5, 8, 9, and 12 were removed. Finally, the majority of participants agreed that scenarios written in the third-person perspective were more likely to elicit an honest opinion, so the written perspective was also determined.

Chapter 3 (Study 2) examined the effectiveness of the ATTS by incorporating the measure into a study using a sample of experienced triathletes. Using the measure of intention (DV), the quantitative cross-sectional and correlational design included several IVs measuring attitude (ATTS) subjective norms, personality traits, self-control, among others.

Using the theory of planned behaviour as a theoretical framework, the study employed correlational analysis to investigate potential associations between intent (i.e., intention to transgress rules), and each independent variable. Pearson's correlation analysis revealed significant associations between intention and three independent variables: the ATTS, subjective norms, and past behaviour. These findings indicate that individuals with an attitude firmly against acts of transgression, a perception of social expectations to adopt honest behaviours, and acted with integrity in the past, have less intention to transgress rules. Hierarchical multiple regression analysis revealed that Stages 1–4 (the inclusion of age, gender, personality, and athletic identity), did not significantly predict intention. However, Stages 5 and 6 (the inclusion of past behaviour, the ATTS, subjective norm, and self-control) significantly predicted intention. A further standardised coefficient investigation revealed that past behaviour, subjective norms, and the ATTS, significantly predicted intention; however, self-control did not. An examination of the curvilinear and quadratic relationships revealed a stronger relationship in the quadratic model between intention and the ATTS. Furthermore, it was identified that the ATTS's rating scale required further improvements and that an additional study incorporating the newly designed severity scale would be necessary. Finally, correlation analysis of the SDRS-5 scores revealed that ATTS scores were not subject to socially desirable responding.

Chapter 4 put forth details and an explanation of further developmental changes to the ATTS's rating scale. Although the researcher followed stringent developmental guidelines, (i.e., a piloting phase), and took all the necessary steps to ensure that the ATTS would be robust and suitable for research purposes, upon completion of study 2 (Chapter 3), a flaw in the ATTS's rating scale was identified. Due to this, the researcher suggested that the ATTS's rating scale should be replaced with an improved design: the Severity Scale. As a result of this developmental change, it was anticipated that associations and predictors identified

during the previous investigation would be stronger and additional correlations would be revealed.

Chapter 5 re-examined the effectiveness of the ATTS with its new design element, the severity scale. Adopting the same approach as the previous study described in Chapter 3, the quantitative cross-sectional and correlational study recruited another sample of experienced triathletes. Due to the developmental changes, the researcher hypothesised that associations and predictors would be stronger and additional correlations would be revealed. Pearson's correlation analysis revealed significant associations between intention and the following variables: ATTS, subjective norms, self-control, past behaviour, and agreeableness. These findings support the researcher's hypothesis that additional correlations would be revealed as result of improvements to the measure (see Chapter 4). The findings indicated that triathletes firmly opposed to transgressive acts (identified using the ATTS), tend to have less intent to transgress rules. In addition, the findings also suggest that individuals with a greater perception of social expectations to adopt an behaviour, have acted with integrity in the past, have greater self-control and greater attributes relating to interpersonal warmth, also have less intent to transgress rules.

A hierarchical multiple regression analysis was carried out and results were somewhat similar to those revealed in Study 2 (see Chapter 3). Analysis showed that Stages 1–4 did not significantly predict intention, however, Stages 5 and 6 of the hierarchical multiple regression (the inclusion of past behaviour, the ATTS, subjective norm, and self-control) significantly predicted intention. Finally, correlation analysis of the SDRS-5 scores revealed that ATTS scores were not subject to socially desirable responding.

In summary, this thesis indicates that the ATTS is a potentially valid methodology for measuring attitude towards transgression. Further, the programme of research revealed fascinating findings which could potentially inform educational initiatives and therefore, the

ATTS's novel third-person vignette-style design should be considered an important contribution to the literature and to the ongoing fight against rule-breaking in sports.

6.2 Explanation of Findings

6.2.1 The ATTS's Development. Although the ATTS's vignettes incorporated various acts of transgression, not all were included. The vignettes were developed using two types of infractions: violating anti-doping regulations and equipment and clothing (see Table 6.1.). The following will discuss how the ATTS's vignettes relate to the typological categories of type, intention and severity (see Chapter 1 for Typology of Transgression in Triathlon).

Table 6.1. ATTS - Type of Infraction

Vignette	1	2	3	4	5	6
Type	Equipment and Clothing	Violating anti-doping regulations	Equipment and Clothing	Violating anti-doping regulations	Violating anti-doping regulations	Equipment and Clothing
Severity	Medium	High	Medium	High	High	Medium
Intention	Intentional	Intentional	Intentional	Intentional	Intentional	Intentional

First, the primary aim during vignette development was to create a measure capable of assessing leniency towards various acts of transgression, but not all acts of transgression. Due to the length of each vignette, the research team aimed to create a measure that was effective, but one that also made considerations for respondent fatigue (Ghafourifard, 2024; Hill & Pylypchuk, 2006; Steyn, 2017). Further, based on feedback from the pilot study (see Chapter 2) it was evident that six vignettes was the optimal size for the measure, and with nine types of infractions highlighted within the typology, the research team felt that it would not be practical to incorporate all types of infractions. There is, however, a potential disadvantage to limiting the types of infractions. For instance, by incorporating all types of infractions, it may have been insightful to perform analysis to learn whether or not respondents' attitudes differ across type. Nevertheless, this was not an objective of the current research programme.

A further crucial design component, was intent. As mentioned previously, the aim of the research programme was to develop a measure capable of assessing leniency towards various acts of transgression. Due to this, the research team felt that is was essential to ensure that all vignettes incorporate intentional rule violations. An advantage of this approach was that respondents provided opinion based upon intentional rule violations (i.e., knowingly transgressing the rules) in an attempt to gain an unfair advantage. As mentioned in the literature review (see Chapter 1), due to the number of rules in triathlon, there are many reports of unintentional violations. In fact, many events now make race briefings mandatory to ensure that athletes are aware of the rules. By incorporating unintentional acts of transgression, one may argue that attitude towards one's intent to gain an unfair advantage would not be measured. Rather, an accidental violation, and/or one's inability to understand the many rules, would ultimately be assessed. However, for future research, the researcher acknowledges that it may be insightful to ascertain one's attitude towards intentional and unintentional rule violation and compare the findings.

In relation to severity, the ATTS incorporated vignettes that are both medium and high in severity. As highlighted in the literature review (see Chapter 1), transition violations, blocking and drafting are among the most reported examples of rule breaking in triathlon (Rutberg, 2016). Such infractions are considered low severity and therefore, they often result in time penalties (World Triathlon Competition Rules, 2025). By incorporating doping violations and equipment and clothing infractions, the ATTS includes vignettes which are both medium and high severity. This strategy was employed to ensure that respondents pause to really consider the rule violation, rather than a less severe violation (e.g., drafting), which they may potentially see or hear about on a frequent basis. Finally, vignette development was a team effort - all aforementioned considerations were implemented to ensure that the

subsequent pilot study incorporated a robust measure for experts to assess and provide crucial feedback.

The piloting phase of the current programme of research was designed to assess the feasibility of an approach to ascertaining athletes' attitudes towards transgressions in triathlon. The use of a pilot study, which is defined as a small-scale test of the methods and procedures to be used on a larger scale (In, 2017; Leon, et al., 2011) was crucial to the development of ATTS. Due to its objective (i.e., assessing a proposed vignette-style measure written in both the first- and third-person perspective), it was important for participants in the pilot study to have adequate visual imagery capabilities. Visual imagery can be defined as the ability to reactivate and manipulate visual representations in the absence of the corresponding visual stimuli, giving rise to the experience of 'seeing with the mind's eye' (Ganis & Schendan, 2011). In total, three participants, one from each of the pilot study and the two subsequent main studies, had to be excluded from the results due to unsatisfactory visual imagery. Several changes were required to improve the ATTS's readability and understandability. Grammatical changes were made in addition to terminology improvements to ensure a more realistic approach was developed. Much of the feedback was related to limiting survey fatigue, which is where respondents lose interest and disengage due to the amount of effort required to complete the survey (Steyn, 2017). In some instances, unnecessarily long sentences were made shorter, vignettes were kept to a similar length, and the measure was reduced from twelve items to six items. These changes were done to ensure the measure was concise, to limit the possibility of survey abandonment and survey fatigue, and ultimately, to improve the quality of data. One of the most prominent findings was that the third-person perspective approach was favoured. The pilot study presented participants with six items written from the first-person perspective and six items written from the third-person perspective. Participants suggested that a third-person perspective approach enabled

them to detach from the act of transgression and thus provide a more honest response. The third-party perspective is often used when writing questions to discover what people really think about sensitive topics and elicit thoughts they normally wouldn't reveal or would lie about if asked more directly (Schafer, 2021). Although the Kolmogorov-Smirnov test (Smirnov, 1939) revealed that all 12-items/scenarios were retained and no significance was observed, it was, however, revealed that each of the variables, readability, understandability, and realism, were rated highly. This finding is a testament to the item construction process, which was informed by collaboration and an extensive review of the literature.

6.2.2 The ATTS's Performance. Prior to the current programme of research, a literature review was carried out to learn how various theoretical frameworks explain rule-breaking behaviour. Several theories attempt to explain rule-breaking and other behaviours, but the Theory of Planned Behaviour (TPB) was adopted for the current study. Many researchers have focused primarily on the theory's three core components: attitude, subjective norms, and perceived behavioural control. However, the current project somewhat modified its use, capturing additional background factors which may influence behavioural beliefs, normative beliefs, and control beliefs. As with the results of Study 2 (see Chapter 3), Pearson's correlation analysis revealed significant associations between intention and several independent variables. A parametric statistical test used widely in psychology, the Pearson correlation allows researchers to determine significance by providing a measure of the strength of the linear association between two variables (Khamis, 2008; Olivoto et al., 2018).

First, the correlation between intention and the ATTS was identified by both main studies in the current research programme, indicating that when an individual's attitude is firmly against acts of transgression, they also show less intent to transgress rules. According to the TPB model, an individual's intention to perform a behaviour is influenced by their attitude towards that behaviour. Literature supports this idea (Yusliza et al., 2020). A meta-

analysis focusing on personal and psychosocial predictors of doping use in physical activity settings found that perceived social norms and positive attitudes towards doping were the strongest positive correlates of doping intentions and behaviours (Ntoumanis et al., 2014). However, Chang (1998) suggested that perceived behavioural control was a better predictor of intention than attitude. Nevertheless, research has shown overwhelming support for the correlation between attitude and intention proposed by the TPB model. Considering the ATTS's objective, namely to measure one's leniency towards acts of transgression, the observed association between the ATTS and intention was encouraging.

The association between intention and subjective norms indicates that participants with a perceived social expectation to adopt honest behaviours, show less intent to transgress rules. A predictor of intention in the regression model, subjective norms comprise one of the three core components that shape an individual's behavioural intentions (Ajzen, 1991). Defined as a person's perception of the social expectation to adopt particular behaviours, researchers support the notion that subjective norms can significantly influence and predict an individual's intention (Al-Swidi et al., 2014; De Vries et al., 1988; Rhodes & Courneya, 2003). A study focusing on the adequacy of the TPB for predicting intentions found nothing to suggest that all the constructs of the model must contribute to behavioural intentions equally, significantly, and simultaneously (Yuzhanin & Fisher, 2016). Pender and Pender (1986) found that attitudes were useful in explaining intentions to engage in three behaviours examined within a study, whereas subjective norms contributed to the explanation of only one behaviour.

The associations between the ATTS and several independent variables were also insightful (see Figure 6.1). First, the ATTS and athletic identity. Athletic identity is the degree to which an individual identifies with the athlete role and looks to others for acknowledgement of that role (Brewer et al., 1993). The findings from the current

programme of research (Chapter 5) revealed that those opposed to transgression have a high athletic identity (i.e., they strongly consider themselves to be an athlete). Previous researchers support this finding, suggesting that athletic identity positively predicts morality and sporting conduct (Albouza et al., 2022; Mahmoud et al., 2022; Visek et al., 2010; Yukhymenko-Lescroart, 2018). The positive association between the ATTS and conscientiousness (one of the Big-5 five personality traits) observed in the current programme of research (Chapter 5) indicated that triathletes opposed to rule-breaking behaviours tend to be more punctual, hard-working, responsible, and reliable. The Big-5 personality traits have been widely examined across various areas of research (Azucar et al., 2018; Curtis et al., 2015; Quintelier, 2014). Researchers have found that conscientiousness and agreeableness were associated with willingness to justify unethical behaviour (Simha & Parboteeah, 2020). A further study investigating academic cheating with a focus on three personality traits (conscientiousness, emotional stability, and openness to experience) found that only conscientiousness directly predicted cheating attitudes (Day et al., 2011).

While these studies provide some support for the association between the ATTS score and conscientiousness, examining alternative traits and psychological theories may reveal more compelling insights. For instance, a study by Nicholls et al. (2022) found that personality traits within the Dark Triad correlated positively with attitude towards doping and cheating behaviour. It was revealed that psychopathy and narcissism positively predicted attitudes towards doping, and narcissism was a positive predictor of cheating behaviour. Further researchers have supported these findings, suggesting that individuals characterised by narcissism and psychopathy might be willing to engage in cheating behaviours (Baran & Jonason, 2022). As mentioned previously, there has been limited examination of personality in the context of rule-breaking in sports, so there is still much that researchers can learn.

Further, although agreeableness was significantly associated with intention in study 3 (Chapter 5), as a collective inventory, the Big-5 showed limited capacity in shedding light on the personalities of those with positive and negative attitude towards transgression in triathlon. A point worth considering is that many researchers suggest that personality traits change with age. It has been identified that traits can change at any time during one's life and that people seem to decrease in openness to experience, conscientiousness, and extroversion as they age (Allemand et al., 2008; Martin et al., 2002; Roberts & Mroczek, 2008). In the sample for Study 3, participants had a mean age of 46.70, so it is plausible to suggest that personality associations may differ in a younger or older sample.

For the final ATTS model (Chapter 5), the ATTS, subjective norms, and past behaviour significantly predicted intention (see Figure 6.1).

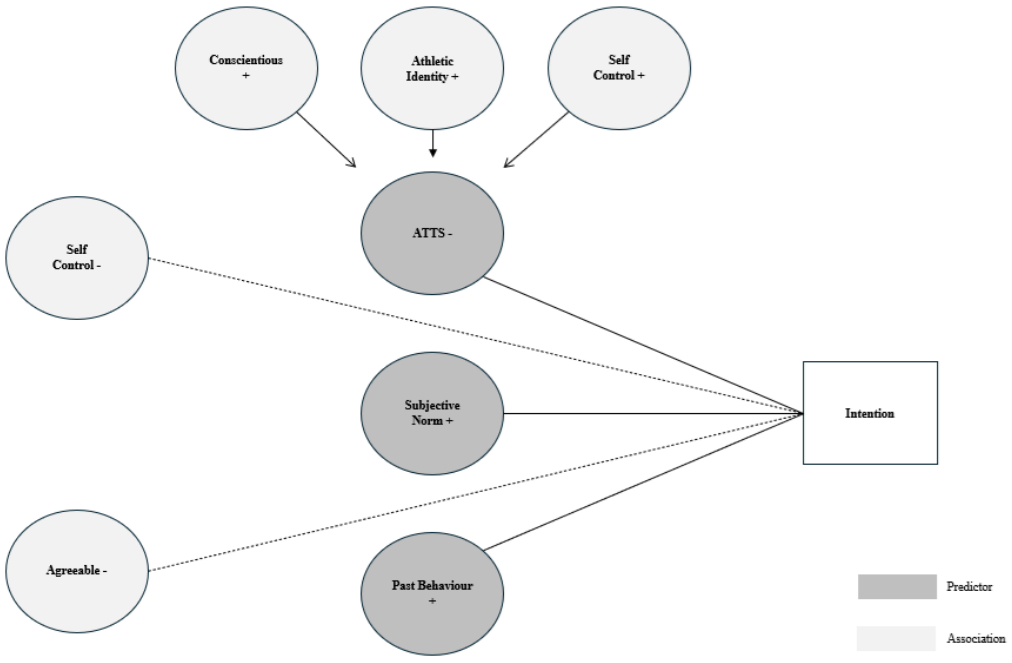

Figure 6.1 Intention – Associations and Predictors

In contrast to these findings, researchers have revealed that age affects an athletes' thoughts on doping (Bloodworth et al., 2012). There is a vast amount of research suggesting

that age influences a multitude of outcomes, such as happiness, maturity, and mindfulness (Sheldon & Kasser, 2001; Splevins et al., 2009). This could be due to the link between age and wisdom. For instance, Worthy et al. (2011) examined age, wisdom and decision-making in younger and older adults and found fundamental differences in the way younger adults and older adults approach decision-making situations. Furthermore, it is plausible that as individuals age, they mature, gain life experiences, and learn from their mistakes, meaning that they tend to understand the consequences associated with making poor decisions. However, for the current programme of research, both age and gender did not significantly influence the outcome variable (intention). In addition, and in contrast to the current findings, a 2017 survey conducted by the UK Anti-Doping Agency (UKAD), an organisation responsible for protecting sports from drug use, revealed that the most common demographic for the onset of IPED use was males between 20 and 24 years old (Broadfield & Marshall, 2017).

In summary, the theory of planned behaviour can explain rule-breaking behaviour in triathlon, at least to some extent. Some researchers have argued that despite the considerable success of the TPB in predicting intentions and behaviours in a wide variety of behavioural domains, significant methodological and theoretical issues remain to be resolved (Manstead & Parker, 1995). First, given the numerous motivations in elite sports (e.g., prize money and lucrative sponsorship deals), it could be argued that the TPB does not consider all of the external factors that may influence an individual's intention to engage in a certain behaviour. Ajzen (1969) suggests that cheating behaviour often occurs when the opportunity arises, so both situational and behavioural factors should be considered. Furthermore, the TPB assumes that individuals also have the ability to plan and engage in the behaviour, which may not be entirely accurate. Nonetheless, the current programme of research provides evidence that the TPB model explains some of the influences on intention.

The researcher recommends the following as a suitable and practical use for the ATTS. First, due to the ATTS's development not following steps such as factor analysis and reliability testing, it is advised that the vignettes be used in a more applied setting, rather than in the form of a questionnaire. The six vignettes were developed and usability tested by experts and the current findings support the ATTS's ability in measuring one's leniency towards acts of transgression. Considering this, the ATTS would be useful incorporated into coaching sessions and/or workshops to elicit insightful discussions among the team. It is recommended that the vignettes be used to gain understanding into how athletes perceive various acts of transgression and in doing so, determine whether additional guidance such as educational initiatives, would be beneficial (see Figure 6.2 for the practical implementation of the ATTS).

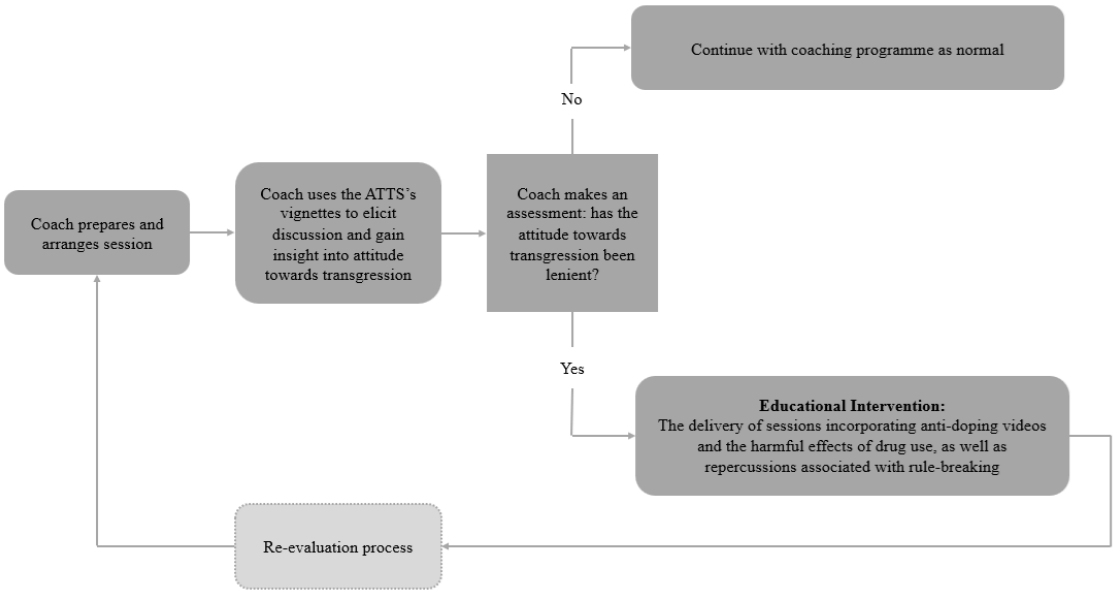

Figure 6.2 ATTS for Coaches

Effectively intervening to potentially prevent transgressions, as highlighted above (see Figure 6.2), can help steer athletes away from poor decisions before they throw away their careers (Hoberman, 2013; Singler, 2015). However, while the ATTS may prove beneficial when delivered to athletes in this way, many coaches are simply not committed enough to

tackling the issue (Ntoumanis et al., 2018). One cannot assume that all coaches see the importance in allocating time to preventing transgression. Further, for rule-breaking prevention to be implemented by coaches, we must rely on their level of integrity. Research has identified that athletes and coaches are often complicit in their actions (Paoli, 2017), and given that transgression in sport is a problem at both the individual and institutional level, combating the issue is not straightforward. We must also consider that perhaps, in many instances, funds and resources are not available, thus a coach would be unable to implement such strategies. Further to this, researchers have shone light on this issue focusing on the ability of sporting organisations to devise, implement and evaluate anti-doping education programmes for coaches (Patterson et al., 2016). It was found that a lack of resources are indeed a significant factor and that further investment at every level of the sporting hierarchy is needed. It is evident that coaches are influential in the doping and anti-doping context (Patterson et al., 2016), therefore, more needs to be done to ensure that adequate resources and funds are available and perhaps, rule-breaking prevention should become a mandatory part of all coaching roles.

Considering the magnitude of rule-breaking in sport, prevention must be the answer; that is, focusing more on utilising educational strategies such as the aforementioned recommendation. If we can deploy more resources to educate athletes with regard to their values, motivations, and attitude towards transgression in sport, this may ensure that they are fully aware of the lasting repercussions associated with violating codes of conduct. In this way, sport would inevitably become a safer environment for everyone.

Early learning experiences are crucially important for elite performance (Kirk, 2005), and therefore, educating young individuals who are more likely to engage in transgressive behaviour could be a key strategy in restoring integrity in sports. While some may argue that agencies such as WADA do not go far enough with their preventative initiatives, they do

indeed provide athletes and coaches with information and educational opportunities. For instance, the Athlete Outreach Program, launched in 2001, is one of WADA's key channels for athlete education, delivering anti-doping messages to athletes around the globe. The programme raises awareness at events such as the Olympic and Paralympic games in an effort to promote clean sports and to help athletes understand the importance of 'Playing True' (Cléret, 2011; Hoberman, 2013; Petróczi, 2007). The slogan 'Play True' was adopted by WADA to encourage young athletes to maintain fairness and uphold the integrity of sports. WADA's slogan subsequently led to the introduction of 'Play True Day' on April 19, which was inspired by a WADA conference held in 2013 that 17 countries attended.

To conclude, a review of the literature indicates that more attention and additional resources are required to implement preventative measures and athlete education. The high cost of testing athletes, the potentially ineffective testing programmes (Møller, 2016; Read et al., 2021; Zubizarreta & Demeslay, 2021), and the substantial legal costs often associated with doping violation disputes, means that education should be considered one of the primary methods for combatting transgression in sport, rather than merely an 'addition'. Further, in order to develop preventative measures, additional exploratory research such as the current programme is crucial to gaining new knowledge. Finally, the future of sport relies on the ethical conduct of athletes, therefore, a substantial and collective fight against transgression is needed, and with its unique third-person vignette-style design, the ATTS - effective in measuring leniency in relation to one's attitude towards transgression, should be considered an important contribution to this in its own right.

6.2.3 Socially Desirable Responding. Socially desirable responding is one of the primary issues in self-reported studies measuring attitudes on sensitive subject matters. It is well documented that respondents are more likely to truthfully report experiences that are considered to be socially acceptable or preferred, whether consciously or unconsciously.

Although SDB (or SDR) was introduced in the early 1950s, little effort has been made to understand the necessity of including scales in studies focusing on sensitive topics. A systematic review of the literature found that only 13.67% of ethics research measured bias (Tan et al., 2021). For the current programme of research, the SDRS-5 was implemented and found that ATTS scores were not subject to socially desirable responding in both main studies (see Chapters 3 and 5). The SDRS-5 is a 5-item measure, making it relatively short in comparison to others, such as Crowne and Marlowe's (1960) Social Desirability Scale (MC–SDS), a 33-item self-report questionnaire. While the shorter SDRS-5 has undergone testing, research has suggested that it should be implemented only when investigators need a very brief measure of socially desirable responding.

6.3 Implications

This thesis has potential implications for the future development of measures focused on asking questions of a sensitive nature. Following an extensive review of the literature, the development of the ATTS was informed by those knowledgeable in developing effective questionnaires and aware of the rules and regulations within the sport of triathlon. This developmental process should, perhaps, be considered standard practice. The development of measures focusing on drug use or criminal behaviour, for example, should involve recruiting individuals who have been engaged in substance use or criminal activities in the past. The same strict approach should be adopted, and academics or other professionals with extensive experience in measure development should be consulted.

The thesis also has potential implications for those researchers adopting the TPB as a theoretical framework to explain transgression in sport. While the two main studies (Chapters 3 and 5) showed that the TPB may explain transgressive behaviour in triathlon, self-control (the third component of the model) contributed very little to the understanding of transgressive intentions among triathletes. The absence of self-control as a predictor of

intention raises questions about the TPB's reliability in explaining rule-breaking behaviour in triathlon, and to understand this further, researchers are encouraged to conduct explorations using an approach similar to that of the current programme of research.

6.4 Limitations

The recruitment of participants was carried out after thorough discussion, and G*Power was used to determine an adequate sample size. The literature suggests that the sample should be large enough to provide useful information (Thabane et al., 2010), therefore the research team suggested that for Phase One, a sample of 12 participants would be sufficient to provide knowledge, experience, and expertise. Although conducting a pilot study does not guarantee success in the main study (Van Teijlingen & Hundley, 2002), the researcher was confident that six experienced athletes and six seasoned academics would provide sufficient knowledge to develop a robust measure, the ATTS. However, in retrospect, a larger sample may have provided additional insight, and it may also have been advantageous to recruit one or two academics who had previously engaged in the development of a measure focusing specifically on transgression in sport. While this may be true, the pilot study took place during the global COVID-19 pandemic, which forced the country, and indeed the world, into a state of panic and solitude. This meant that the difficulties associated with the recruitment of busy university lecturers were amplified. Due to the safety guidelines in place during the pandemic (e.g., the use of masks and no social or work gatherings), online focus groups were conducted. While there are benefits to this, such as time and cost savings, convenience, and flexibility, the researcher would have preferred in-person focus groups. Online focus groups often provide limited interaction and thus less input from those involved. A further limitation of the pilot study was the unavailability of participants, which hampered the scheduling of the focus groups. Academic lecturers have busy schedules, so one can anticipate some cancellations and unavailability. While

everything was done to arrange focus group sessions suitable for everyone involved, this was not possible and a couple of one-to-one interviews were therefore conducted.

For Studies 2 and 3, 126 and 162 participants were recruited, respectively. Adequate sample sizes were determined using G*Power, but additional participants may have been valuable. A review of the literature shows that many studies investigating rule-breaking behaviours in sport have recruited hundreds of participants (Chirico et al., 2021; Hodge et al., 2013; Shields et al., 2007). In the current research programme, larger sample sizes may have provided more reliable results and greater statistical power. Furthermore, the recruitment of additional participants with professional triathlon experience for both Studies 2 and 3 may have been advantageous, as some ATTS items describe scenarios that lean towards a professional context. A further limitation was the duration of the survey-style study. Studies 2 and 3 both incorporated several lengthy measures, which ultimately meant that the study took a considerable amount of time to complete. Research suggests that long surveys may lead to respondent fatigue (Le et al., 2021)—a type of fatigue that occurs due to the survey's design and length and the question types (Sinickas, 2007; Field, 2020). While this was somewhat unavoidable, it may have led to a loss of concentration and focus for some participants, thus potentially impacting the data (Backor et al., 2007).

6.5 Future Research Directions

For future explorations of this topic, researchers are encouraged to investigate attitude towards transgression across various sporting disciplines and examine which sports are more susceptible to rule transgressions. Similar to the personality differences between athletes and non-athletes (Newcombe & Boyle, 1995), research has suggested that individuals tend to engage in particular sports based on their personalities. For instance, a study by Potgieter (2013) found that rugby players showed a greater tolerance towards rule infringement. Furthermore, existing research has suggested that cyclists were more open-minded towards

doping than triathletes (Morente-Sánchez et al., 2013), and the use of banned substances is said to differ according to the demand of the specific sport (Morente-Sánchez & Zabala, 2013). In addition, researchers have revealed differences between the personality profiles of long-distance runners and football players; the biggest discrepancies were on the conscientiousness scale (Piepiora et al., 2019), which is a fascinating finding given the association between the ATTS and conscientiousness identified in the current programme of research (Chapter 5). These findings support the notion that attitudes towards transgression may indeed differ across sporting disciplines, but there is limited research on this to date. Therefore, it would be insightful to use the ATTS's methodology to understand how attitudes differ across sports. By exploring this more closely, new knowledge may emerge, and such investigations would shed further light on the effectiveness of the ATTS.

Future research should also consider the shortcomings highlighted by this work and re-examine the effectiveness of the final ATTS model after tightening the methodology. Researchers must consider incorporating the ATTS into a study to attempt to predict rule-breaking behaviour. To fully understand the effectiveness of the ATTS, researchers must put it 'into action' rather than relying solely on theoretical principles. For instance, the study by Nicholls et al. (2022) included an activity where the 164 participating athletes were given the opportunity to cheat but were unaware of the researcher's intentions. The findings suggested that all personality traits correlated positively with cheating behaviour. Further researchers are encouraged to adopt a similar approach and ascertain the ATTS's true potential.

The researcher recommends that more exploration into the associations with the ATTS is needed. During the current programme of research (Chapter 5), associations between the ATTS and athletic identity, and conscientiousness, were revealed. First, researchers have used the theory of planned behaviour and found conscientiousness to be an antecedent of the intention to cheat (Yusliza et al., 2022). The study explored intention to

cheat among undergraduate students. Findings suggested three constructs of the TPB, subjective norms, perceived behavioural control, and attitude, significantly mediated the conscientiousness intention to cheat relationship. For the current programme of research, findings supported this - suggesting that individuals opposed to rule-breaking behaviours tend to be more punctual, harder working, responsible, and reliable. However, as a whole, the research revealed very little in relation to personality. The researcher therefore advises that the relationship between the ATTS and conscientiousness is explored in different countries and where cultural differences may determine personality traits (Allik, 2005; Church, 2016; Penke et al., 2007; Richerson & Boyd, 2008).

The current programme also revealed an association between the ATTS and athletic identity (i.e., those strongly opposed to transgression tend to have a greater athletic identity). One could argue that many high-profile athletes who break the rules do indeed consider themselves to be an athlete, (i.e., they have a high athletic identity), therefore, the finding from the current programme would not explain their actions. In this instance, perhaps individuals who are firmly opposed to transgression may indeed break the rules once other factors come into play. These factors may include irrational beliefs and/or motivations such as significant sponsorships or winners purses, thus possibly influencing moral disengagement. Considering this, due to the predominantly amateur sample recruited for the current programme of research, it may be enlightening to explore athletic identity and attitude towards transgression within a solely professional context (i.e., recruiting a sample of professional triathletes). By incorporating the ATTS and variables designed to capture key information, and by adopting a similar approach to the previously mentioned study by Nicholls et al., researchers could understand how potential rule-breakers and non-rule-breakers differ with emphasis on their level of athletic identity.

Finally, using the ATTS for further explorations (see Appendix 2.10 for ATTS) within the sport of triathlon would be a relatively straightforward process. For use in other sporting disciplines, however, the process becomes more complex. Due to the length, design, and intricacy of each item, making basic adaptations to suit a chosen sport would not be adequate. Researchers are advised to thoroughly consider any changes by adopting a mirrored methodology, ensuring that the ATTS's development is replicated accurately.

6.6 Conclusion

The current programme of research began with a vision and sought to answer a question: how can psychologists and/or sports coaches effectively measure leniency towards acts of transgression. On the face of it, the question may seem reasonably straightforward, but the reality is very different. From the familiar questionnaires focusing on smoking habits and alcohol consumption to more intrusive and sensitive measures, the desire for individuals to present themselves in a socially desirable manner is certainly not a new phenomenon. While one may argue that attempting to overcome this obstacle is futile and that it is unrealistic to conceive that a survey would prompt honesty in potentially dishonest individuals, the current programme confronts this issue head-on. However, challenges became apparent immediately. Nevertheless, through discussions, collaboration and planning, the researcher pressed forward, developing a strategy in an attempt to answer this difficult research question. The current programme met its objective in shedding new light on this area of research, and with determination, a measure was developed that is capable of measuring leniency in relation to one's attitude towards transgression within the sport of triathlon.

The inclusion of the TPB—a theoretical framework incorporating three core components: attitude, subjective norms, and perceived behavioural control—provided insight into the constructs of rule-breaking intention among triathletes. In addition, the ATTS's novel design and unique approach revealed findings in support of the pre-study hypothesis. Many

objectives were met, and the ATTS's piloting phase was crucial to limiting socially desirable responding.

To conclude, the challenges associated with this type of research meant that adopting an innovative approach was critical. As researchers, addressing difficult research questions must be a priority—we should not shy away from nor be deterred by the fear of failure. In the current programme, the researcher welcomed these challenges, and through planning and strategic thinking, contributed to what is becoming a popular research area in sport psychology. The researcher implemented an unconventional and novel approach, and the ATTS's validation is a step in the right direction in terms of progressive educational content. Researchers are encouraged to examine this research, its strengths and its pitfalls, and use the model as a foundation that they can build upon and improve. Those researchers who are passionate about sport and wish to see its integrity upheld must continue to seek innovative developments to combat this widespread issue. Athletes need to be educated on values and motivations and need to be fully aware of the lasting repercussions associated with acting against codes of conduct. However, to achieve this, questions need to be asked in a suitable manner. The current programme went above and beyond in an attempt to achieve this, and while further explorations are of great necessity, it was a privilege for the researcher to make a substantial contribution to the literature.

Chapter 7

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Appendices

Appendix 2.1: Manchester Metropolitan University Ethical Approval

23/03/2021
Project Title: Assessing the design, readability and methodology - A pilot study

EthOS Reference Number: 27250

Ethical Opinion

Dear Richard James Boczko,

The above application was reviewed by the Health, Psychology and Social Care Research Ethics and Governance Committee and, on the 23/03/2021, was given a favourable ethical opinion. The approval is in place until 21/06/2021.

Conditions of favourable ethical opinion

Application Documents

Document Type	File Name	Date	Version
Project Protocol	Protocol-Template-for-Non-Medical-Research-version-1.5-date-22March-2021	22/03/2021	1.5
Recruitment Media	Recruitment Media	22/03/2021	1.5
Consent Form	Participant Consent Form	22/03/2021	1.5
Information Sheet	Participant Information Sheet	22/03/2021	1.5
Additional Documentation	Letter[597]	22/03/2021	1.5

The Health, Psychology and Social Care Research Ethics and Governance Committee favourable ethical opinion is granted with the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make a change to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and

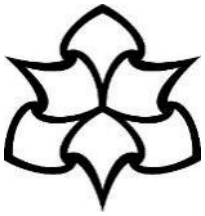
Governance webpages or contact your Faculty research officer for advice around how to do this.

We wish you every success with your project.
HPSC Research Ethics and Governance Committee

HPSC Research Ethics and Governance Committee
For help with this application, please first contact your Faculty Research Officer. Their details can be found here

Appendix 2.2: Participant Consent Form

Manchester Metropolitan University



Assessing the design, readability, and methodology - A pilot study

Participant Identification Number:

	Please tick your chosen answer	YES	NO
1.	I confirm that I have read the participant information sheet for the above study.	☐	☐
2	I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐	☐
3	I understand that my participation is voluntary, and I am free to withdraw at any time 'during the 8-week study period' without giving reason. I am free to withdraw during the study without my legal rights being affected and my data will not be used and deleted accordingly.	☐	☐
4	I agree to participate in the project to the extent of the activities described to me in the above participant information sheet.	☐	☐
5	I agree to my participation being audio recorded for analysis. No audio clips will be published without my express consent (additional media release form).	☐	☐
6	I understand and agree that my words may be quoted anonymously in research outputs.	☐	☐
7	I give permission for the researchers named in the participant information sheet to contact me in the future about this research or other research opportunities.	☐	☐
8	I give permission for a fully anonymised version of the data I provide to be deposited in an Open Access repository so that it can be used for future research and learning.	☐	☐

Name of participant	Date	Signature
Name of person taking consent	Date	Signature

Appendix 2.3: Recruitment - Social Media Advertisement

<u>Providing feedback on a proposed piece of research relating to doping and transgression within the sport of triathlon</u>
<u>A Pilot Study</u>

The project is looking to recruit participants of all genders over the age of eighteen and with a minimum of three years' experience competing in amateur or professional triathlon competitions. In addition, we are also recruiting academics with a minimum of three years' experience in qualitative research and questionnaire design.

You will be presented with a proposed piece of research containing twelve fictional scenarios relating to doping and breaking the rules within the sport of triathlon. Your participation will involve giving your opinion and providing feedback on the following:

- The quality of being easy or enjoyable to read.
- Information presented can be easily comprehended/understood.
- Use of fictional information in a way that is accurate and true to life.

If you meet the criteria stated above and wish to take part, you will be required to complete a survey which should take approximately 20-25 minutes. You will then be required to take part in an online discussion two weeks after completing the survey.

For further information and/or to register your interest, please email the principal investigator using the email address provided below.

Your support is greatly appreciated.

Thank you.

Richard James Boczko
Principal Investigator
Department of Psychology, Manchester Metropolitan University, UK.

Appendix 2.4: Academic Recruitment – Email

Dear [Name],

My name is Richard Boczko, and I am a PhD student at Manchester Metropolitan University. Under the supervision of Dr Andrew Wood and Dr Martin Turner, we are conducting a pilot study which is vital for the development of our proposed research project. We are recruiting academics with experience in qualitative research and knowledge of questionnaire design and would like to ask if you would kindly consider participating.

A brief overview of the study:

Title: Assessing the design, readability, and methodology of the Attitude Towards Transgression Scale (ATTS).

If you agree to take part, you will be sent a link to Qualtrics where the pilot study is located. The survey should take approximately 30 minutes to complete. Upon completion of consent, brief demographics, and an imagery questionnaire, you will be presented with a proposed piece of research containing twelve fictional scenarios relating to doping and breaking the rules within the sport of triathlon. Your participation will involve giving your opinion and providing feedback on the following:

- The quality of being easy or enjoyable to read.
- Information presented can be easily comprehended/understood.
- Use of fictional information in a way that is accurate and true to life.

In addition to this, you will be required to take part in an online discussion two weeks after completing the survey using Microsoft Teams. This process is designed to gain additional information regarding study design, methodology and an opportunity to provide your expert opinion.

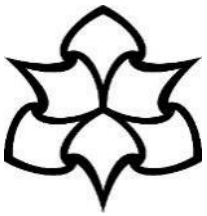
For further information, please do not hesitate to contact me. I would also like to take this opportunity to thank you for your time and I hope to hear from you soon.

Best regards,

Richard James Boczko
Principal Investigator
Department of Psychology
Manchester Metropolitan University

Appendix 2.5: Participant Information Sheet

Manchester Metropolitan
University



Assessing the design, readability, and methodology - A pilot study

Dear Sir/Madam,

My name is Richard Boczko, and I am a PhD researcher at Manchester Metropolitan University. Under the supervision of Dr Andrew Wood and Dr Martin Turner, we are conducting a pilot study in which your opinion is vital for the development of our proposed research project. You will be presented with a proposed piece of research containing twelve fictional scenarios relating to doping and transgression (breaking the rules) within the sport of Triathlon. Your participation will involve giving your opinion and providing feedback on the following:

- The quality of being easy or enjoyable to read.
- Information presented can be easily comprehended/understood.
- Use of fictional information in a way that is accurate and true to life.

You are under no obligation to take part in this pilot study and if you do decide to take part, you are free to withdraw from the study at any point 'during the 8-week study' without giving a reason. The Qualtrics survey design incorporates a unique participant code. You can contact the principal investigator, Richard Boczko via phone or email with this code and your participation can be cancelled and your data deleted. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained. Please take your time in reading the information regarding the research and your participation.

1) This is an invitation to take part in a pilot study.
You are being invited to take part in a short pilot study. Please take time to read the following information carefully and raise any questions you may have with the research team (contact details can be found below). Please take all the time you need to decide whether or not you wish to take part.

2) What is the purpose of the pilot study?
The aim of the pilot study is to gain your views on a proposed piece of research. You will be presented with twelve fictional scenarios relating to doping and transgression within the sport of Triathlon. As well as your feedback regarding the use of terminology, we aim to understand whether our design is realistic and appropriate for a proposed piece of research.

3) Why am I being asked to take part?
Before the proposed study can be launched, we need to be sure that every detail is suitable and fit for the purpose of research. Your opinion is both vital and necessary for us to understand whether any changes should be implemented prior to the final draft.

4) Do I have to take part?
You are under no obligation to take part in this pilot study. If you do decide to take part, you are free to withdraw from the study at any point 'during the 8-week study'. During this 8-week study period, your participation is voluntary, and you are free to withdraw at any time without giving any reason and without your legal rights being affected. If you decide to withdraw from the study, your data will not be used and deleted accordingly. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained. If you wish to withdraw, please speak to and/or contact the lead researcher at: richard.j.boczko@stu.mmu.ac.uk.

5) What will the pilot study consist of?
You will first be sent a link to Qualtrics where the pilot study is located. From start to finish, study 1a will take between 20-25 minutes to complete.
Qualtrics is a simple to use web-based survey tool to conduct survey research, evaluations, and other data collection activities.
The study will begin with information regarding the study and a short consent form. This consent form outlines the information you have read in relation to the study and asks for your consent to proceed. If you agree and consent to participate, you will select continue to the next section, the demographics section.
Demographic information will include your age and gender only.
You will then select continue and complete the Vividness of Visual Imagery (VVIQ). The VVIQ measures the vividness of your visual imagination. VVIQ is proven to be an accurate test of the vividness for which you can imagine people, objects, or settings in your mind.
Once you have completed the VVIQ, you will continue to the main and final section of the pilot study, the scenarios.
You will be presented with 12 fictional scenarios. Each scenario is a short 8–10-line paragraph which presents an example of an athlete breaking the rules (transgression). Upon reading each scenario and the selection of corresponding answers/statements, you will be asked to use a 7-point Likert scale to give your opinion on areas including:

1) The quality of being easy or enjoyable to read.
2) Information presented can be easily comprehended/understood.
3) Use of fictional information in a way that is accurate and true to life.

A focus group: The pilot study consists of two parts, study 1a (as mentioned previously), and study 1b, a focus group designed to gain additional information regarding the study and your experience.
There will be two focus group sessions: One session for the academic participants, and another separate focus group for the triathlete participants.
During the academic participant focus group, we aim to cover topics and gain feedback on (but not limited to):

- Study design
- Methodology

During the athlete participant focus group, we aim to cover topics and gain feedback on (but not limited to):

- Readability

- Use of fictional names for products and banned substances.

Using Zoom/Skype, the focus groups will be with the principal investigator and the supervisory team.
The focus group will take approximately 30 minutes to complete.
The date and time of this focus group will be arranged to suit all participants involved.

6) Are there any disadvantages or risks in taking part?
We do not see any psychological or physical risks to participation in the present study. Nonetheless, you are completely at liberty to pause, postpone, or withdraw your participation in the present study. In this instance, please speak to and/or contact the lead researcher at: richard.j.boczko@stu.mmu.ac.uk.

7) What are the possible benefits of taking part?
As a result of your participation in the pilot study, you may accrue a critical insight into the research process and topic under investigation.

8) Who are the members of the research team?

Lead Researcher:	**Supervisor:**	**Supervisor:**
Richard Boczko Sport and Exercise Psychology Postgraduate Researcher Manchester Metropolitan University	Dr Andrew Wood Senior Lecturer in Sport and Exercise Psychology Manchester Metropolitan University	Dr Martin Turner Reader, Department of Psychology Manchester Metropolitan University

9) Who is funding the research? Any research costs will be funded by the lead researcher, Richard Boczko, and supported by Manchester Metropolitan University. Approval from the Manchester Metropolitan University ethics committee has been granted.

10) Who will have access to the data?
The Manchester Metropolitan University ('the University') is the Data Controller in respect of this research and any personal data that you provide as a research participant.

The University is registered with the Information Commissioner's Office (ICO) and manages personal data in accordance with the General Data Protection Regulation (GDPR) and the University's Data Protection Policy.

We collect personal data as part of this research (such age and gender). As a public authority acting in the public interest, we rely upon the 'public task' lawful basis. When we collect special category data (such as medical information or ethnicity) we rely upon the research and archiving purposes in the public interest lawful basis.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways in order for the research to be reliable and accurate. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained.

We will not share your personal data collected in this form with any third parties.

If your data is shared this will be under the terms of a Research Collaboration Agreement which defines use and agrees confidentiality and information security provisions. It is the University's policy to only publish anonymised data unless you have given your explicit written consent to be identified in the research. **The University never sells personal data to third parties.**

We will only retain your personal data for as long as is necessary to achieve the research purpose.

Data will be stored using a secure computer with a robust password. Any data documented using paper will be kept in a locked filling cabinet along with a copy of the electronic data. This data will be kept on a secure USB, ensuring safe and secure transfer between the principal investigator and the supervisory team. At no point will data be transferred outside of the EU, nor will it be transferred to any persons not previously stated.

All efforts will be made to anonymise data, identifying participants as numbers during the study and transcription of focus group data. In the event of computer malfunction and lost data, at no point will participants names be documented, thus, ensuring privacy of those involved. The principal investigator, Richard Boczko, is responsible for the data entry, quality, data analysis, and data security.

The study will adhere to participant confidentiality. Data storage will comply with GDPR and kept for no longer than necessary for the purpose of this study, after which time, the data shall be deleted, and written copies destroyed.

Details regarding GDPR compliance and the UK Data Protection Act 2018, are set out as follows: The Manchester Metropolitan University is the acting data controller, and the principal investigator is the data custodian. Manchester Metropolitan University, the principal investigator, Richard Boczko and the supervisory team (Dr Andrew Wood and Dr Martin Turner) will have access to personal data during and after the study. At this stage, it is not anticipated that any data will be shared with any third-party persons.

The principal investigator is responsible for the destruction or data. This will be carried out as in accordance with the MMU data destruction policies. For all data stored using USB, multi pass pattern wiping, degaussing or disintegration will be used to destroy existing sensitive information obtained during this research. Data recorded using paper will be destroyed using a micro crosscut shredder or incineration. Equipment such as a computer will also be used to store data, however, the computer will be reused, therefore; all traces of the study and its data will be cleaned accordingly. In the case of a data breach, principal investigator, Richard Boczko is responsible for informing the Data Protection Officer.

All necessary measures will be taken to ensure the privacy and confidentiality of all those involved in this research. GDPR compliance is a main priority and adhering to the UK Data Protection Act 2018 is at the forefront of this research and the design process. Limiting access of data to a minimum, (i.e., the principal investigator and the supervisory team), will ensure the security of the data.

For further information about use of your personal data and your data protection rights please see the https://www2.mmu.ac.uk/data-protection.

11) Who has reviewed this research project?

To date, this research project has been reviewed by the principal investigator, Richard Boczko, members of the supervisory team, Dr Andrew Wood, and Dr Martin Turner, as well as Manchester Metropolitan University and the Ethics Committee.

12) What will happen to the results of the research study?
The data arising from the study will be primarily owned by the principal investigator, Richard Boczko. Whilst access will be granted for audit by the Manchester Metropolitan University, authorship will be limited to those who have made a significant contribution to the paper, (i.e., principal investigator, Richard Boczko). Due to this pilot study being part of a larger ongoing research project, it is understandable that at this early stage, it cannot be confirmed where the project will be published, nor can it be confirmed where the final project can be accessed. Nevertheless, viewing the final project can be made possible upon request. Additionally, all contributors and supporters of the research will be acknowledged with the publication of this paper. Members of the supervisory team, Dr Andrew Wood, and Dr Martin Turner, as well as Manchester Metropolitan University and the Ethics Committee will be acknowledged for their combined efforts and support in making this research possible. There are no plans to notify participants of the outcome of the study, however, findings can be made available to those involved upon request. The anonymised dataset will be made publicly available, however, as previously mentioned, due to the study being in the early stages of a larger research project, where and when data will be made publicly available is not know at this stage.

13) Who do I contact if I feel my rights have been violated?
If you have any concerns regarding the personal data collected from you, our Data Protection Officer can be contacted using the legal@mmu.ac.uk e-mail address, by calling 0161 247 3331 or in writing to: Data Protection Officer, Legal Services, All Saints Building, Manchester Metropolitan University, Manchester, M15 6BH. You also have a right to lodge a complaint in respect of the processing of your personal data with the Information Commissioner's Office as the supervisory authority. Please see: https://ico.org.uk/global/contact-us/

Additionally, you can contact:

Professor Khatidja Chantler
Faculty Head of Research Ethics and Governance
Manchester Campus
Manchester Metropolitan University
M15 6BH
K.Chantler@mmu.ac.uk

14) Finally, a thank you!
If you have decided to take part in the pilot study, please continue to the consent form. I would like to take this opportunity to thank you on behalf of myself, Richard Boczko, and Manchester Metropolitan University for your participation in this study.

Appendix 2.6: Participant Debrief Sheet

Congratulations, you have now completed the study

Study Debrief

Title: Assessing the design, readability and methodology - A pilot study

Lead Researcher:
Richard Boczko
Manchester Metropolitan University
Email: richard.j.boczko@stu.mmu.ac.uk

Supervisor:
Dr Andrew Wood
Manchester Metropolitan University
Email: andrew.wood@mmu.ac.uk

Supervisor:
Dr Martin Turner
Reader, Department of Psychology
Manchester Metropolitan University
Email: m.turner@mmu.ac.uk

We would like to take this opportunity to thank you for your participation in this research study.

The aim of the pilot study was to gain your views on a proposed piece of research. You were presented with twelve fictional scenarios relating to doping and transgression within the sport of triathlon. As well as your feedback regarding the use of terminology, we aimed to understand whether our design is realistic and appropriate for a proposed piece of research.

We would like to remind you that you are free to withdraw at any time 'during the 6-week study period' without giving reason. You are free to withdraw during the study without your legal rights being affected and your data will not be used and deleted accordingly.

If you wish, you can obtain additional information in relation to this research.

Finally, you can request this debrief sheet in a document by emailing:
richard.j.boczko@stu.mmu.ac.uk

Thank you!

Appendix 2.7: VVIQ

1. The exact contour of face, head, shoulders, and body.
(Please tick one)

- ☐ No image at all (only "knowing" that you are thinking of the object)
- ☐ Vague, and dim
- ☐ Moderately clear and vivid
- ☐ Clear and reasonably vivid
- ☐ Perfectly clear and as vivid as normal vision

2. Characteristic poses of head, attitudes of body, etc.

- ☐ No image at all (only "knowing" that you are thinking of the object)
- ☐ Vague, and dim
- ☐ Moderately clear and vivid
- ☐ Clear and reasonably vivid
- ☐ Perfectly clear and as vivid as normal vision

3. The precise carriage, length of step, etc., in walking.

- ☐ No image at all (only "knowing" that you are thinking of the object)
- ☐ Vague, and dim
- ☐ Moderately clear and vivid
- ☐ Clear and reasonably vivid
- ☐ Perfectly clear and as vivid as normal vision

4. The different colours worn in some familiar clothes.

- ☐ No image at all (only "knowing" that you are thinking of the object)
- ☐ Vague, and dim
- ☐ Moderately clear and vivid
- ☐ Clear and reasonably vivid
- ☐ Perfectly clear and as vivid as normal vision

Visualize a rising sun. Carefully consider the picture that comes before your mind's eye. Then rate the following items.

5. The sun is rising above the horizon into a hazy sky.
(Please tick one)

- ☐ No image at all (only "knowing" that you are thinking of the object)
- ☐ Vague, and dim
- ☐ Moderately clear and vivid
- ☐ Clear and reasonably vivid
- ☐ Perfectly clear and as vivid as normal vision

6. The sky clears and surrounds the sun with blueness.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

7. Clouds. A storm blows up, with flashes of lightning.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

8. A rainbow appears.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

Think of the front of a shop to which you often go. Consider the picture that comes before your mind's eye. Then rate the following items.

9. The overall appearance of the shop from the opposite side of the road. (Please tick one)

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

10. A window display including colours, shapes, and details of individual items for sale.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

11. You are near the entrance. The colour, shape, and details of the door.

- [ ] No image at all (only "knowing" that you are thinking of the object)

- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

12. You enter the shop and go to the counter. The counter assistant serves you. Money changes hands.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

Finally, think of a country scene which involves trees, mountains and a lake. Consider the picture that comes before your mind's eye. Then rate the following items.

13. The contours of the landscape. (Please tick one)

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

14. The colour and shape of the trees.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

15. The colour and shape of the lake.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

16. A strong wind blows on the trees and on the lake, causing waves.

- [ ] No image at all (only "knowing" that you are thinking of the object)
- [ ] Vague, and dim
- [ ] Moderately clear and vivid
- [ ] Clear and reasonably vivid
- [ ] Perfectly clear and as vivid as normal vision

Appendix 2.8: ATTS - (Pilot Example)

Below are 12 scenarios. For each scenario: 1) Please take your time and read each scenario and its corresponding response section carefully. 2) Using the 7-point Likert scale and comments sections, please provide your opinion and feedback.

Scenario 1.

Charlie is a keen amateur triathlete and often participates in various distances from sprint to half distance triathlons. Although still relatively new to the sport, Charlie's sights are high, and dreams of becoming professional are constantly at the forefront of an increasingly ambitious mind. Charlie is well aware of the need to start winning, or at very least, start finishing in a strong position. A half distance triathlon is fast approaching, offering the perfect opportunity for significant progress.

Charlie trains at a local triathlon club during the week and a number of club friends use an energy drink called SpeedX1000; a proven 'off the shelf' energy drink designed to increase both stamina and speed. This energy supplement contains a prohibited substance, and whilst Charlie competes merely as an amateur, the drink would certainly be forbidden within the world of both amateur and professional triathlon.

With some SpeedX1000 purchased, the intense raspberry flavour is going down a treat, and making the 'big time' in the not-too-distant future is something Charlie is becoming increasingly optimistic about.

Using the table below, select the statement which most appropriately reflects your opinion in relation to the athlete's behaviour presented in the above scenario. Tick one answer using the area provided above each statement!

Their actions are acceptable & it is their right to make every effort to maximise results via any means they so desire.	Actions are severely alarming. The athlete should endure the strictest repercussions.	Their actions should be commended, such attempts to gain success in sport is positive & should be encouraged.	Their actions are concerning. They should be dealt with accordingly & receive disciplinary action.	Given the circumstances, I have a neutral opinion on this & I have nothing to say regarding their actions.	Their actions are somewhat concerning but exploiting the rules in this way does not warrant punishment.

In relation to Scenario 1 please indicate to what extent the scenario was:

Do you agree that the scenario is realistic, and easy to read and understand?

	1. Strongly Disagree	**2. Disagree**	**3. Moderately Disagree**	**4. Neither agree nor**	**5. Moderately Agree**	**6. Agree**	**7. Strongly Agree**

				disagree			
Readable *(The quality of being easy or enjoyable to read)*							
Understandable *(Information presented can be easily comprehend/understood)*							
Realistic *(Use of fictional information in a way that is accurate and true to life)*							

In relation to the Scenario 1 response options, please provide your feedback using the 7-point Likert scale below:

	1. Strongly Disagree	**2. Disagree**	**3. Moderately Disagree**	**4. Neither agree nor disagree**	**5. Moderately Agree**	**6. Agree**	**7. Strongly Agree**
Readable *(The quality of being easy or enjoyable to read)*							
Understandable *(Information presented can be easily comprehend/understood)*							
Realistic *(Use of fictional information in a*							

way that is accurate and true to life)							

Please provide any additional comments that you may have about Scenario 1.

Comments

Appendix 2.9: Focus Group Questions

Academic Participants	Triathlete Participants
1. What are your initial thoughts on the measure? 2. Was the process simple enough to understand and navigate? 3. Did you feel like you could answer the questions honestly? 4. In relation to credibility, do you feel that this methodology is convincing and/or effective? 5. Was there anything that stood out as misleading? 6. What were the good points and bad points? 7. What might you change about the design and/or process? 8. Is there anything you would like to add, (i.e., perhaps new ideas we have not touched upon?). 9. The study aims to randomly present the responses to the scenarios. What is your opinion on this strategy, and also please state whether any adjustments could be implemented to make this more effective? 10. As you will have noticed, six scenarios were presented in the first person perspective, while the other six were presented to you in the third person perspective. Due to the sensitive nature of the research topic, we want to make sure that we are asking these questions in a way in which will limit socially desirable responding. For example, asking participants to imagine it is themselves breaking the rules and providing an opinion of their own actions, versus, asking participants to provide an opinion based on someone else's actions, (i.e., a fictional character). In your opinion, which methodology will be more effective and why? 11. Regarding the item structure, length, and the depth of information presented, do you believe that any alterations should be implemented to make the measure	1. Was the process simple enough to understand and navigate? 2. Was there anything that stood out as misleading? 3. Did you feel like you could answer the questions honestly? 4. In relation to credibility, do you feel that this methodology is convincing and/or effective? 5. What were your initial thoughts on the measure? 6. What were the good points and bad points? 7. What might you change about the design and/or the process? 8. The scenarios use fictional names for products and banned substances, (i.e., PowerT3000 etc). In your opinion, do these names sound realistic and are they appropriate for research purposes, or would it read more appropriately without naming the products and substances, (i.e., 'Emerson was drinking a supplement which contains a prohibited ingredient', rather than 'Emerson was drinking PowerT3000 which contains a prohibited ingredient'?). 9. Regarding the item structure, the length, and the depth of information presented, do you believe that any alterations should be implemented to make the measure more effective, understandable, and/or realistic? 10. Given the sensitive nature of items within the measure, in your opinion, are there any reasons why participants may wish to answer dishonestly, or indeed, feel uncomfortable providing a response whatsoever? 11. To avoid the possibility of gender-bias responses, the study has been designed using gender-neutral names for fictional characters presented within each scenario. We want to understand whether these names are 'fit for

more effective, understandable, and/or realistic? 12. Given the sensitive nature of scenarios and the questions they pose, in your opinion, are there any reasons why participants may wish to answer dishonestly, or indeed, feel uncomfortable providing a response whatsoever? 13. To avoid the possibility of gender-bias responses, the study has been designed using gender-neutral names for the fictional characters presented within each scenario. We want to understand whether these names are 'fit for purpose'. For instance, even gender-neutral names are often more commonly associated with one specific gender, therefore, we wish to know whether any names used within the study led you to believe they were one gender over another?	purpose'. For instance, even gender-neutral names are often more commonly associated with one specific gender, therefore, we wish to know whether any names used within the study led you to believe they were one gender over another?

Appendix 2.10: Attitude Towards Transgression Scale (ATTS) - (Final Model)

Item 1

Morgan has recently become passionate about exercising and has taken up triathlon to keep fit. Up until now, Morgan has hired the equipment required to participate in amateur events (i.e., bicycle, wetsuit, etc.). With a 70.3-mile event fast approaching, Morgan has decided that it is time to invest in some equipment. Having purchased a shiny new road bike and accessories, Morgan begins researching wetsuits. Narrowing the wetsuit search down to just a few options, Morgan is ready to make a purchase.

Although relatively new to triathlon, Morgan is aware of the various rules and regulations surrounding participation, both amateur and professional. While some rules vary from race to race, some are more 'set in stone'.

Morgan purchased a wetsuit, and it will arrive in time for the upcoming event. Opting to save £20, Morgan selected a wetsuit made from 6-millimetre-thick neoprene, although the race rules state that 5 millimetres is the maximum thickness allowed. While the extra thickness may provide additional buoyancy and 'may' improve swim speed, Morgan purchased this wetsuit solely because it was one of the cheapest and had no intention of gaining a specific finishing time or place. Race day comes and goes. With no concern for the additional millimetre, Morgan had fun and continues to enjoy triathlon as a hobby.

Item 2

Harley is a professional triathlete with over nine years of experience. Canadian-born, Harley moved to the United Kingdom, settling with a family and continuing to pursue a much-loved career as a professional triathlete. Being family-orientated, it is often difficult for Harley to juggle the demands of an unforgiving training regime and parent life. However, Harley remains disciplined and focused and continues to train hard regardless of other commitments.

This season has been poor for Harley. With only a couple of races left on the calendar, it is not possible to finish in a strong position and the championships are completely out of reach. Nevertheless, Harley does not want to finish in an even worse position than last year and decides to act. Harley purchases some TestAnabol, an injectable steroid which may improve endurance and race performance.

Harley's training has been going fantastically and race day quickly arrives, offering the perfect opportunity to see if improvements would be made because of the TestAnabol. The race finishes and Harley is delighted with a personal best time and a strong finish position. Fully convinced that TestAnabol may be the answer, Harley plans to continue using the product during off-season training in preparation for a more successful campaign the following year.

Item 3

Finley is a triathlete with over four years of experience competing as a professional. Between the gruelling training and competing professionally, Finley enjoys training and helping other triathletes reach their goals. From swim coaching to cycle training, Finley loves to pass on knowledge so that other triathletes can fulfil their potential. With the final quarter of the season approaching, Finley decides to make a video for the ever-growing list of clients. By mounting a tiny camera underneath the aero handlebars, Finley plans to record the cycling section of the race to show clients road positioning to gain maximum advantages during a race.

Being both an amateur and a professional for several years, Finley is aware of the various rules and regulations associated with the sport of triathlon. Recording devices are prohibited during any section of the race, but Finley sees little wrong in simply recording the cycling for educational purposes.

The big day arrives, and Finley is excited to produce some educational material for the client base. Recording rapid descents and overtaking techniques, Finley is happy with the quality and outcome of the video.

Item 4

Emerson is an enthusiastic triathlete who enjoys participating in amateur triathlons. Although Emerson is still relatively new to the sport, ambitions are high and becoming professional soon is the main objective. Emerson understands that becoming professional will require improvements in all areas. As with many athletes, Emerson spends hours reading, learning new techniques, and watching videos on how to optimise capabilities. A 70.3-mile triathlon is coming up in a few months, and this is Emerson's opportunity to make much-needed improvements.

Training 2-3 times per week at a local club is common practice for most triathletes and vitally important for improving performance come race day. Emerson enjoys mid-week sessions and looks forward to socialising with clubmates a couple of times a month. Several club friends use an energy drink called PowerT3000, scientifically proven to improve endurance and increase power output, but PowerT3000 contains a banned ingredient. Whilst Emerson had reservations initially, after further consideration, Emerson purchased some PowerT3000 and instantly felt additional energy and other benefits associated with the supplement. Continuing to use PowerT3000, Emerson has become increasingly hopeful that professional triathlete status is now well within arm's reach.

Item 5

Brooke is an amateur triathlete who enjoys competing in long-distance events. Brooke became a member of the local triathlon club a couple of years ago and has grown increasingly competitive in recent months. Brooke enjoys pushing the limits and hopes to win some races and compete professionally soon. Dreaming of one day holding a winner's

trophy, Brooke enjoys learning about the latest methods which may help make that dream become a reality. Brooke's friend also enjoys triathlon and explains that certain injectable steroids can often help with stamina and power output. Really wanting to make the 'big time', Brooke begins considering the friend's advice.

Brooke decides to purchase Xstenolone online and begins using the product immediately. A long-distance event is fast approaching, and Brooke signs up. Training is going excellently and the benefits of Xstenolone are clear to see. Race day comes and Brooke is elated to finish in a strong position. With the mouth-watering prospect of becoming a professional athlete and reaping the associated rewards, Brooke quickly resumes training and continues to use Xstenolone in preparation for the next race.

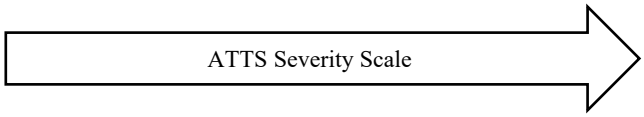
Item 6

Taylor is a triathlete with over 12 years of experience and has spent the past three years competing professionally. Taylor's passion is long-distance triathlons; Taylor often participates in 140.6-mile events and is becoming accustomed to spending hours on the bike. With the final quarter of the race season fast approaching, Taylor has not performed well enough to place well in this year's rankings. Nevertheless, as always, Taylor will continue to race hard and enjoy the remainder of the race calendar.

As one can imagine, endurance sports are very demanding and mental focus is paramount during such long periods of unforgiving training. To help with this, Taylor likes to listen to music or even watch a TV screen when using the indoor cycle trainer. Taylor recently purchased some ultra-small wireless earbuds, and although competitive races prohibit their use, Taylor is contemplating using them at an upcoming event. The big day arrives, and although there is nothing to gain by wearing them (apart from a little 'on board' entertainment), Taylor takes an unconcerned attitude. The earbuds go unnoticed under the aero helmet, and Taylor enjoys the race listening to some of the latest dance tracks.

I have a neutral opinion on this & nothing to say about their actions.

___1__:___2__:___3__:___4__:___5__:___6__:___7___



Their actions are severely alarming. They should endure the strictest repercussions.

Appendix 3.1: Manchester Metropolitan University Ethical Approval

02/09/2021
Project Title: Investigating Attitudes Towards Transgression

EthOS Reference Number: 33503

Ethical Opinion

Dear Richard James Boczko,

The above application was reviewed by the Health, Psychology and Social Care Research Ethics and Governance
Committee and, on the 02/09/2021, was given a favourable ethical opinion. The approval is in place until 15/11/2021 .

Conditions of favourable ethical opinion

Application Documents

Document Type	File Name	Date	Version
Project Protocol	Protocol-Template-for-Non-Medical-Research-version-1.2-date-01-Sept- 01/09/2021 2021		1.2
Recruitment Media	Recruitment Media	01/09/2021	1.2
Consent Form	Participant Consent Form	01/09/2021	1.2
Information Sheet	Participant Information Sheet	01/09/2021	1.2
Additional Documentation	Letter[1973] Changes Made	01/09/2021	1.2

The Health, Psychology and Social Care Research Ethics and Governance Committee favourable ethical opinion is granted with the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make a change to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and Governance webpages or contact your Faculty research officer for advice around how to do this.

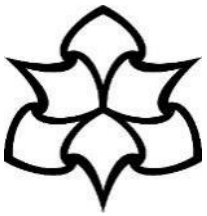
We wish you every success with your project.

HPSC Research Ethics and Governance Committee

HPSC Research Ethics and Governance Committee

Appendix 3.2: Participant Consent Form

Manchester Metropolitan University



Investigating Attitudes Towards Transgression

Participant Identification Number:

	Please tick your chosen answer	YES	NO
1.	I confirm that I have read the participant information sheet for the above study.	☐	☐
2	I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐	☐
3	I understand that my participation is voluntary, and I am free to withdraw at any time 'during the 6-week study period' without giving reason. I am free to withdraw during the study without my legal rights being affected and my data will not be used and deleted accordingly.	☐	☐
4	I agree to participate in the project to the extent of the activities described to me in the above participant information sheet.	☐	☐
5	I understand and agree that my words may be quoted anonymously in research outputs.	☐	☐
6	I give permission for the researchers named in the participant information sheet to contact me in the future about this research or other research opportunities.	☐	☐
7	I give permission for a fully anonymised version of the data I provide to be deposited in an Open Access repository so that it can be used for future research and learning.	☐	☐

Name of participant	Date	Signature
Name of person taking consent	Date	Signature

Appendix 3.3: Recruitment - Social Media Advertisement

Investigating Attitudes Towards Transgression

The project is looking to recruit participants of all genders over the age of eighteen and with a minimum of three years' experience competing in amateur or professional triathlon competitions.

You will be presented with six fictional scenarios relating to doping and breaking the rules within the sport of triathlon. Your participation will involve giving your opinion on the action/behaviour presented within the scenario.

The study will then present questions from the Big-5 Personality Questionnaire, Performance Beliefs Inventory, Self-Control Scale, Social Desirability Scale, Athletic Identity Scale, and questions in relation to past behaviour, subjective norms, and intention.

If you meet the criteria stated above and wish to take part, you will be required to complete a survey which should take approximately 30-35 minutes.

For further information and/or to register your interest, please email the principal investigator using the email address provided below.

Your support is greatly appreciated.

Thank you.

Richard James Boczko
Principal Investigator
Department of Psychology, Manchester Metropolitan University, UK.

Appendix 3.4: Recruitment – Email

Dear [Name],

My name is Richard Boczko, I am a Doctoral researcher at Manchester Metropolitan University. Under the supervision of Dr Andrew Wood and Dr Martin Turner, we are conducting a study to understand more about those who participate in competitive triathlon.

As the manager of a thriving triathlon club, we would like for you to get involved and we will reward you for your efforts. There are no gimmicks - all we need you to do is simply send an email to your club members, ask them to kindly complete our online survey, and in doing so, they will raise money for your club. Happy days!

So how does it work? the process could not be simpler! Our study is in the form of an online survey located at the Manchester Metropolitan University Qualtrics system. Once your members visit the survey, they are required to specify which triathlon club they are affiliated to. When the study is completed, (i.e., we have received the required number of survey completions), we will contact you to let you know how much your members have raised for your club.

Things to consider:

- Once you have agreed to take part, we will send you details to our survey.
- The survey will be open for 14-days (the early bird catches the worm).
- Respondents must have participated in triathlon for at least 3-years.
- One survey completion per person is permitted by our system.
- Participants must be at least 18 years old.
- We will pay £3 per respondent (possibly a nice lump sum for kit, advertising costs or something else your club may need).
- The link will close once we have received the required number of respondents.

If you would like to get involved, please email me with your interest - specifying how many respondents you believe that your club could offer. Once you are on board, we will send you further details.

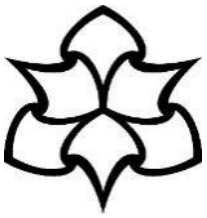
For further information, please do not hesitate to contact me.

Best regards,

Richard James Boczko
Principal Investigator
Department of Psychology
Manchester Metropolitan University

Appendix 3.5: Participant Information Sheet

Manchester Metropolitan
University



Investigating Attitudes Towards Transgression

Dear Sir/Madam,

My name is Richard Boczko, I am a PhD researcher at Manchester Metropolitan University. Under the supervision of Dr Andrew Wood and Dr Martin Turner, we are conducting a study looking into attitudes towards transgression. You will be presented with various fictional scenarios relating to doping and transgression within the sport of Triathlon. Using a Likert scale, we aim to understand your views of various acts of transgressive behaviour.

You are under no obligation to take part in this study and if you do decide to take part, you are free to withdraw from the study at any point 'during the 6-week study' without giving a reason. The Qualtrics survey design incorporates a unique participant code. You can contact the principal investigator, Richard Boczko via phone or email with this code and your participation can be cancelled and your data deleted. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained. Please take your time in reading the information regarding the research and your participation.

1) This is an invitation to take part in a study.

You are being invited to take part in a short study. Please take time to read the following information carefully and raise any questions you may have with the research team (contact details can be found below). Please take all the time you need to decide whether or not you wish to take part.

2) What is the purpose of the study?
The aim of this study is to gain your views on fictional scenarios relating to transgressive behaviour within the sport of triathlon. You will be presented with various fictional scenarios relating to doping and transgression within the sport of Triathlon. Using a Likert scale system, you will be asked to select the statement which most accurately reflects your own views on the behaviour.

3) Why am I being asked to take part?
Our research aims to understand views on various acts of transgression within the sport of triathlon. To achieve this, it is important that we recruit participants experienced in triathlon, thus, offering an opinion based on knowledge and with a personal connection to the sport itself.

4) Do I have to take part?

You are under no obligation to take part in this study. If you do decide to take part, you are free to withdraw from the study at any point 'during the 6-week study'. During this 6-week study period, your participation is voluntary, and you are free to withdraw at any time without giving any reason and without your legal rights being affected. If you decide to withdraw from the study, your data will not be used and deleted accordingly. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained. If you wish to withdraw, please speak to and/or contact the lead researcher at: **********.

5) What will the study consist of?

You will first be sent a link to Qualtrics where the study is located. From start to finish, the study will take between 30-35 minutes to complete.
Qualtrics is a simple to use web-based survey tool to conduct survey research, evaluations, and other data collection activities.
The study will begin with information regarding the study and a short consent form. The consent form outlines the information you have read in relation to the study and asks for your consent to proceed. If you agree and consent to participate, you will select continue to the next section, the demographics section.
Demographic information will include your age, gender, biological sex, ethnicity, relationship status, highest level of education, current employment status, competitive experience in years, the number of triathlons completed, your preferred race distance, and details of your triathlon club.
Upon completion of the demographics, you will then complete the 16-item Vividness of Imagery Questionnaire (VVIQ). This brief questionnaire measures the vividness of your visual imagery (basically your ability to imagine clearly).
You will then be presented with six fictional scenarios. Each scenario is a short 8–10-line paragraph which presents an example of a triathlete breaking the rules (transgression). Once you have read each scenario and the selection of corresponding answers/statements, you will be asked to select the statement which most accurately reflects your own views on the behaviour.
The study will then present questions from the Big-5 Personality Questionnaire, Performance Beliefs Inventory, Self-Control Scale, Social Desirability Scale, Athletic Identity Scale, and questions in relation to past behaviour, subjective norms, and intention.
The final page of the survey will incorporate a study debrief. The debrief will include (but not limited to) study title, researchers name and contact details, a thank you statement, an explanation as to why the study was important, (i.e., hypothesis, aims and research question). Additionally, you will be provided with a reminder that you can withdraw your consent and your participation. You will be offered the opportunity to view study data/results upon request. Furthermore, you will be advised that you can obtain additional information in relation to the research if you wish, and finally, you will be given the opportunity to request this information in a document.

6) Are there any disadvantages or risks in taking part?

We do not see any psychological or physical risks to participation in the present study. Nonetheless, you are completely at liberty to pause, postpone, or withdraw your participation in the present study. In this instance, please speak to and/or contact the lead researcher at: richard.j.boczko@stu.mmu.ac.uk.

7) What are the possible benefits of taking part?

As a result of your participation in the study, you may accrue a critical insight into the research process and topic under investigation.

8) Who are the members of the research team?

Lead Researcher:	**Supervisor:**	**Supervisor:**
Richard Boczko Sport and Exercise Psychology Postgraduate Researcher Manchester Metropolitan University	Dr Andrew Wood Senior Lecturer in Sport and Exercise Psychology Manchester Metropolitan University	Dr Martin Turner Reader, Department of Psychology Manchester Metropolitan University

9) Who is funding the research?

Any research costs will be funded by the lead researcher, Richard Boczko, and supported by Manchester Metropolitan University. Approval from the Manchester Metropolitan University ethics committee has been granted.

10) Who will have access to the data?

The Manchester Metropolitan University ('the University') is the Data Controller in respect of this research and any personal data that you provide as a research participant.

The University is registered with the Information Commissioner's Office (ICO) and manages personal data in accordance with the General Data Protection Regulation (GDPR) and the University's Data Protection Policy.

We collect personal data as part of this research (such as age, gender, biological sex, ethnicity, relationship status, highest level of education, current employment status, competitive experience in years, the number of triathlons completed, your preferred race distance, and details of your triathlon club). As a public authority acting in the public interest, we rely upon the "public task" lawful basis. When we collect special category data (such as medical information or ethnicity) we rely upon the research and archiving purposes in the public interest lawful basis.

Your rights to access, change or move your information are limited, as we need to manage your information in specific ways for the research to be reliable and accurate. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained.

We will not share your personal data collected in this form with any third parties.

If your data is shared this will be under the terms of a Research Collaboration Agreement which defines use and agrees confidentiality and information security provisions. It is the University's policy to only publish anonymised data unless you have given your explicit written consent to be identified in the research. **The University never sells personal data to third parties.**

We will only retain your personal data for as long as is necessary to achieve the research purpose.
Data will be stored using a secure computer with a robust password. Any data documented using paper will be kept in a locked filling cabinet along with a copy of the electronic data. This data will be kept on a secure USB, ensuring safe and secure transfer between the principal investigator and the supervisory team. At no point will data be transferred outside of the EU, nor will it be transferred to any persons not previously stated.

All efforts will be made to anonymise data, identifying participants as numbers during the study. In the event of computer malfunction and lost data, at no point will participants names be documented, thus, ensuring privacy of those involved. The principal investigator, Richard Boczko, is responsible for the data entry, quality, data analysis, and data security.
The study will adhere to participant confidentiality. Data storage will comply with GDPR and kept for no longer than necessary for the purpose of this study, after which time, the data shall be deleted, and written copies destroyed.

Details regarding GDPR compliance and the UK Data Protection Act 2018, are set out as follows: The Manchester Metropolitan University is the acting data controller, and the principal investigator is the data custodian. Manchester Metropolitan University, the principal investigator, Richard Boczko and the supervisory team (Dr Andrew Wood and Dr Martin Turner) will have access to personal data during and after the study. At this stage, it is not anticipated that any data will be shared with any third-party persons.

The principal investigator is responsible for the destruction of data. This will be carried out as in accordance with the MMU data destruction policies. For all data stored using USB, multi pass pattern wiping, degaussing or disintegration will be used to destroy existing sensitive information obtained during this research. Data recorded using paper will be destroyed using a micro crosscut shredder or incineration. Equipment such as a computer will also be used to store data, however, the computer will be reused, therefore; all traces of the study and its data will be cleaned accordingly. In the case of a data breach, principal investigator, Richard Boczko is responsible for informing the Data Protection Officer.

All necessary measures will be taken to ensure the privacy and confidentiality of all those involved in this research. GDPR compliance is a main priority and adhering to the UK Data Protection Act 2018 is at the forefront of this research and the design process. Limiting access of data to a minimum, (i.e., the principal investigator and the supervisory team), will ensure the security of the data.

For further information about use of your personal data and your data protection rights please see the https://www2.mmu.ac.uk/data-protection.

11) Who has reviewed this research project?

To date, this research project has been reviewed by the principal investigator, Richard Boczko, members of the supervisory team, Dr Andrew Wood, and Dr Martin Turner, as well as Manchester Metropolitan University and the Ethics Committee.

12) What will happen to the results of the research study?

The data arising from the study will be primarily owned by the principal investigator, Richard Boczko. Whilst access will be granted for audit by the Manchester Metropolitan University, authorship will be limited to those who have made a significant contribution to the paper, (i.e., principal investigator), Richard Boczko. Due to this study being part of a larger ongoing research project, it is understandable that at this early stage, it cannot be confirmed where the project will be published, nor can it be confirmed where the final project can be accessed. Nevertheless, viewing the final project can be made possible upon request. Additionally, all contributors and supporters of the research will be acknowledged with the publication of this paper. Members of the supervisory team, Dr Andrew Wood, and Dr Martin Turner, as well as Manchester Metropolitan University and the Ethics Committee will be acknowledged for their combined efforts and support in making this research possible. There are no plans to notify participants of the outcome of the study, however, findings can be made available to those involved upon request. The anonymised dataset will be made publicly available, however, as previously mentioned, due to the study being in the early stages of a larger research project, where and when data will be made publicly available is not know at this stage.

13) Who do I contact if I feel my rights have been violated?

If you have any concerns regarding the personal data collected from you, our Data Protection Officer can be contacted using the legal@mmu.ac.uk e-mail address, by calling 0161 247 3331 or in writing to: Data Protection Officer, Legal Services, All Saints Building, Manchester Metropolitan University, Manchester, M15 6BH. You also have a right to lodge a complaint in respect of the processing of your personal data with the Information Commissioner's Office as the supervisory authority. Please see:
https://ico.org.uk/global/contact-us/
Additionally, you can contact:

Professor Khatidja Chantler
Faculty Head of Research Ethics and Governance
Manchester Campus
Manchester Metropolitan University
M15 6BH
K.Chantler@mmu.ac.uk

14) Finally, a thank you!

If you have decided to take part in the study, please continue to the consent form. I would like to take this opportunity to thank you on behalf of myself, Richard Boczko, and Manchester Metropolitan University for your participation in this study.

Appendix 3.6: Participant Debrief Sheet

Congratulations, you have now completed the study

Study Debrief

Title: Investigating Attitudes Towards Transgression.

Lead Researcher:
Richard Boczko
Manchester Metropolitan University
Email: richard.j.boczko@stu.mmu.ac.uk

Supervisor:
Dr Andrew Wood
Manchester Metropolitan University
Email: andrew.wood@mmu.ac.uk

Supervisor:
Dr Martin Turner
Reader, Department of Psychology
Manchester Metropolitan University
Email: m.turner@mmu.ac.uk

We would like to take this opportunity to thank you for your participation in this research study.

The aim of this study was to gain your views on fictional scenarios relating to transgressive behaviour within the sport of triathlon. You were presented with various fictional scenarios relating to doping and transgression and using a Likert scale, you were asked to select the statement which most accurately reflects your own views, thus gaining an understanding of your attitude towards the behaviour. Furthermore, we gained demographic information and details in relation to your characteristics, views and beliefs.

We would like to remind you that you are free to withdraw at any time 'during the 6-week study period' without giving reason. You are free to withdraw during the study without your legal rights being affected and your data will not be used and deleted accordingly.

If you wish, you can obtain additional information in relation to this research.

Finally, you can request this debrief sheet in a document by emailing:
richard.j.boczko@stu.mmu.ac.uk

Thank you!

Appendix 3.7: Big-Five Personality Questionnaire (BFI–S)

Scale

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree

Measure

I see myself as someone who...

1. Worries a lot.
2. Gets nervous easily.
3. {reverse} remains calm in tense situations.
4. Is talkative.
5. Is outgoing, sociable.
6. {reverse} is reserved.
7. Is original, comes up with new ideas.
8. Values artistic, aesthetic experiences.
9. Has an active imagination.
10. {reverse} is sometimes rude to others.
11. Has a forgiving nature.
12. Is considerate and kind to almost everyone.
13. Does a thorough job.
14. {reverse} tends to be lazy.
15. Does things efficiently.

Appendix 3.8: The Athletic Identity Measurement Scale (AIMS)

Scale

1 = Strongly Disagree, 2 = Disagree, 3 = Somewhat Disagree, 4 = neither agree nor disagree, 5 = somewhat agree, 6 = agree, 7 = strongly agree

Measure

1) I consider myself an athlete.
2) I have many goals related to sport.
3) Most of my friends are athletes.
4) Sport is the most important part of my life.
5) I spend more time thinking about sport than anything else.
6) I need to participate in sport to feel good about myself.
7) Other people see me mainly as an athlete.
8) I feel bad about myself when I do poorly in sport.
9) Sport is the only important thing in my life.
10) I would be very depressed if I were injured and could not compete in sport.

Appendix 3.9: Brief Self-Control Scale (BSCS)

Scale

1 = Not at all like me, 2 = Somewhat unlike me, 3 = Neutral, 4 = Somewhat like me, 5 = Very Much like me

Measure

1) I am good at resisting temptation.
2) I have a hard time breaking a bad habit (R)
3) I am lazy. (R)
4) I say inappropriate things. (R)
5) I do certain things that are bad for me if they are fun. (R)
6) I refuse things that are bad for me.
7) I wish I had more self-discipline. (R)
8) People would say that I have iron self- discipline.
9) Pleasure and fun sometimes keep me from getting work done. (R)
10) I have trouble concentrating. (R)
11) I am able to work effectively toward long-term goals.
12) Sometimes I cannot stop myself from doing something, even if I know it is wrong. (R)
13) I often act without thinking through all the alternatives. (R)

Appendix 3.10: Subjective Norm, Intention, and Past Behaviour

Subjective Norm: 3-Item Measure

Scale

Agree: __1___:___2__:___3__:___4__:___5__:___6__:___7___: Disagree.

Measure

1) Most people who are important to me would approve of me breaking the rules within my sport.
2) Most people like me, would not break the rules under any circumstances.
3) People who are important to me expect me to play within the rules.

Intention: 3-Item Measure

Scale

Agree: __1___:___2__:___3__:___4__:___5__:___6__:___7___: Disagree.

Measure

1) In the future, I intend to break the rules within my sport.
2) In the future, I intend to report any rule breaking seen within my sport.
3) In the future, I will remain within the rules of my sport regardless of external pressures.

Past Behaviour: 3-Item Measure

Scale

false :___1__:___2__:___3__:___4__:___5__:___6__:___7___: true

Measure

1) In the past, I have considered breaking the rules within my sport.
2) In the past, I have broken the rules within my sport.
3) In the past, I have known about other people breaking the rules and I turned a blind eye.

Appendix 3.11: The Socially Desirable Response Set-5 (SDRS-5)

Scale

1 = Definitely True, 2 = Mostly True, 3 = Don't Know, 4 = Mostly False, 5 = Definitely False

Measure

1) I am always courteous even to people who a are disagreeable. (R)
2) There have been occasions when I took advantage of someone.
3) I sometimes try to get even rather than a forgive and forget.
4) I sometimes feel resentful when I do not get my way.
5) No matter who I am talking to, I am always a good listener. (R)

Appendix 4.1: Manchester Metropolitan Ethical Approval

30/11/2021
Project Title: Understanding the Characteristics, Personal Views and Opinions of a Competitive Triathlete

EthOS Reference Number: 36291

Ethical Opinion

Dear Richard James Boczko,

The above application was reviewed by the Health, Psychology and Social Care Research Ethics and Governance
Committee and, on the 30/11/2021, was given a favourable ethical opinion. The approval is in place until 07/03/2022 .

Conditions of favourable ethical opinion

Application Documents

Document Type	File Name	Date	Version
Project Protocol	Protocol-Template-for-Non-Medical-Research-version-1.2-date-16-Nov- 16/11/2021	2021	1.2
Consent Form	Participant Consent Form	16/11/2021	1.2
Information Sheet	Participant Information Sheet	16/11/2021	1.2
Additional Documentation	Explanation of Deception (Note: this component of the study was abandoned – Richard Boczko)	16/11/2021	1.2
Additional Documentation	Letter[2343] Changed Made	16/11/2021	1.2

The Health, Psychology and Social Care Research Ethics and Governance Committee favourable ethical opinion is granted with the following conditions

Adherence to Manchester Metropolitan University's Policies and procedures

This ethical approval is conditional on adherence to Manchester Metropolitan University's Policies, Procedures, guidance and Standard Operating procedures. These can be found on the Manchester Metropolitan University Research Ethics and Governance webpages.

Amendments

If you wish to make a change to this approved application, you will be required to submit an amendment. Please visit the Manchester Metropolitan University Research Ethics and Governance webpages or contact your Faculty research officer for advice around how to do this.

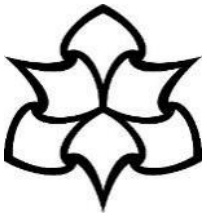
We wish you every success with your project.

HPSC Research Ethics and Governance Committee

HPSC Research Ethics and Governance Committee

Appendix 4.2: Participant Consent Form

Manchester Metropolitan University



Understanding the Characteristics,
Personal Views and Opinions of a Competitive Triathlete

Participant Identification Number:

	Please tick your chosen answer	YES	NO
1.	I confirm that I have read the participant information sheet for the above study.	☐	☐
2	I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐	☐
3	I understand that my participation is voluntary, and I am free to withdraw at any time 'during the 8-week study period' without giving reason. I am free to withdraw during the study without my legal rights being affected and my data will not be used and deleted accordingly.	☐	☐
4	I agree to participate in the project to the extent of the activities described to me in the above participant information sheet.	☐	☐
5	I understand that my data will be analysed collectively (in a way that will not make me identifiable from my answers) and reported in research outputs.	☐	☐
6	I give permission for the researchers named in the participant information sheet to contact me in the future about this research or other research opportunities.	☐	☐
7	I give permission for a fully anonymised version of the data I provide to be deposited in an Open Access repository so that it can be used for future research and learning.	☐	☐

Name of participant	Date	Signature
Name of person taking consent	Date	Signature

Appendix 4.3: Recruitment - Email

Dear [Triathlon Club Name],

My name is Richard Boczko, I am a Doctoral researcher at Manchester Metropolitan University. Under the supervision of Dr Martin Turner and Dr Andrew Wood, we are conducting a study to understand more about those who participate in competitive triathlon. With the recent success of the same study based within the United Kingdom, our aim is to understand and investigate the same research question incorporating a US-based sample.

As a thriving triathlon club, we would like your club members to participate in this exciting project. Our study is in the form of an online survey using Qualtrics. If you wish to take part, simply send an email to your club members and/or share our survey on your social media pages, newsletters etc. When one of your club members visits our survey, they are required to specify which club they are affiliated to. Once we have received the required number of survey completions, we will contact you to let you know how much your members have raised for your club.

Things to consider:

- Respondents must have participated in amateur or profession triathlon for at least 3-years.
- One survey completion per person is permitted by our system.
- Participants must be at least 18 years old.
- We will pay $4 per survey completion to your Triathlon Club.

If you would like to be involved, please email me and I will send you a comprehensive participant information sheet and the link to our MMU Qualtrics survey.

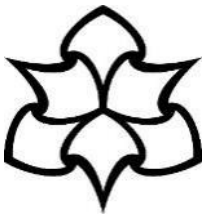
For further information, please do not hesitate to contact me.

Best regards,

Richard James Boczko
Principal Researcher
Department of Psychology
Manchester Metropolitan University

Appendix 4.4: Participant Information Sheet

Manchester Metropolitan
University



Understanding the Characteristics,
Personal Views and Opinions of a Competitive Triathlete

Dear Sir/Madam,
My name is Richard Boczko, I am a PhD researcher at Manchester Metropolitan University. Under the supervision of Dr Andrew Wood and Dr Martin Turner, we are conducting a study looking into the characteristics, personal views and opinions of a competitive triathlete. You will be presented with a selection of questions specifically incorporated into this study to learn more about the values, beliefs and the personality of those athletes competing in the sport of triathlon.

You are under no obligation to take part in this study and if you do decide to take part, you are free to withdraw from the study at any point 'during the 8-week study' without giving a reason. The Qualtrics survey design incorporates a unique participant code. You can contact the principal investigator, Richard Boczko via phone or email with this code and your participation can be cancelled and your data deleted. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained. Please take your time in reading the information regarding the research and your participation.

What is the purpose of the study?
The aim of this study is to learn more about the characteristics, personal views and opinions of a competitive triathlete. We aim to use the data derived from this study to understand more about the values, beliefs and the personality of those athletes competing in the sport of triathlon.

Why am I being asked to take part?
Our research aims to learn more about the characteristics, personal views and opinions of a competitive triathlete. To achieve this, it is important that we recruit participants experienced in triathlon, thus, offering an opinion based on knowledge and with a personal connection to the sport itself.

Do I have to take part?
You are under no obligation to take part in this study. If you do decide to take part, you are free to withdraw from the study at any point 'during the 8-week study'. During this 8-week study period, your participation is voluntary, and you are free to withdraw at any time without giving any reason and without your legal rights being affected. If you decide to withdraw from the study, your data will not be used and deleted accordingly. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information

about you that we have already obtained. If you wish to withdraw, please speak to and/or contact the lead researcher at: richard.j.boczko@stu.mmu.ac.uk.

What will the study consist of?
You will first be sent a link to Qualtrics where the study is located. From start to finish, the study will take between 30-35 minutes to complete.
Qualtrics is a simple to use web-based survey tool to conduct survey research, evaluations, and other data collection activities.
The study will begin with information regarding the study and a short consent form. The consent form outlines the information you have read in relation to the study and asks for your consent to proceed. If you agree and consent to participate, you will select continue to the next section, the demographics section..
Demographic information will include your age, gender, biological sex, ethnicity, relationship status, highest level of education, current employment status, competitive experience in years, the number of triathlons completed, your preferred race distance, and details of your triathlon club.
Upon completion of the demographics, you will then complete the 16-item Vividness of Imagery Questionnaire (VVIQ). This brief questionnaire measures the vividness of your visual imagery (basically your ability to imagine clearly). You will then be presented with six fictional scenarios. Each scenario is a short 8–10-line paragraph. Once you have read each scenario, you will be asked to apply the principle shown in the Behaviour Severity Scale and use the text box provided to specify the appropriate point on the scale which reflects your opinion of the athletes behaviour. The study will then present questions from the Big-Five Inventory (BFI-S), Brief Self-Control Scale (BSCS), Socially Desirable Response Set-5 (SDRS-5), Athletic Identity Measurement Scale (AIMS), and questions relating to past behaviour, subjective norms, and intention.
Within 2-weeks of completing the study, you will be sent an email thanking you for your participation.
You will then be sent an email containing a study debrief document. The debrief document will include (but not limited to) study title, researchers name and contact details, a thank you statement, an explanation as to why the study was important, (i.e., hypothesis, aims and research question). Additionally, you will be provided with a reminder that you can withdraw your consent and your participation. You will be offered the opportunity to view study data/results upon request. Furthermore, you will be advised that you can obtain additional information in relation to the research if you wish.

Are there any disadvantages or risks in taking part?
We do not see any psychological or physical risks to participation in the present study. Nonetheless, you are completely at liberty to pause, postpone, or withdraw your participation in the present study. In this instance, please speak to the lead researcher, Richard Boczko.

What are the possible benefits of taking part?
As a result of your participation in the study, you may accrue a critical insight into the research process and topic under investigation.

Who are the members of the research team?

Lead Researcher: Richard James Boczko Researcher	Supervisor: Dr Andrew Wood Senior Lecturer in Sport and Exercise Psychology	Supervisor: Dr Martin Turner Reader, Department of Psychology

Manchester Metropolitan University	Manchester Metropolitan University	Manchester Metropolitan University

Who is funding the research?
Any research costs will be funded by the lead researcher, Richard Boczko, and supported by Manchester Metropolitan University. Approval from the Manchester Metropolitan University ethics committee has been granted.

Who will have access to the data?
The Manchester Metropolitan University ('the University') is the Data Controller in respect of this research and any personal data that you provide as a research participant.
The University is registered with the Information Commissioner's Office (ICO) and manages personal data in accordance with the General Data Protection Regulation (GDPR) and the University's Data Protection Policy.
We collect personal data as part of this research (such as age, gender, biological sex, ethnicity, relationship status, highest level of education, current employment status, competitive experience in years, the number of triathlons completed, your preferred race distance, and details of your triathlon club). As a public authority acting in the public interest, we rely upon the 'public task' lawful basis. When we collect special category data (such as medical information or ethnicity) we rely upon the research and archiving purposes in the public interest lawful basis.
Your rights to access, change or move your information are limited, as we need to manage your information in specific ways for the research to be reliable and accurate. Once the study is completed and data analysed, if you decide to withdraw, we will keep the information about you that we have already obtained.
We will not share your personal data collected in this form with any third parties.
If your data is shared this will be under the terms of a Research Collaboration Agreement which defines use and agrees confidentiality and information security provisions. It is the University's policy to only publish anonymised data unless you have given your explicit written consent to be identified in the research. The University never sells personal data to third parties.
We will only retain your personal data for as long as is necessary to achieve the research purpose.
Data will be stored using a secure computer with a robust password. Any data documented using paper will be kept in a locked filling cabinet along with a copy of the electronic data. This data will be kept on a secure USB, ensuring safe and secure transfer between the principal investigator and the supervisory team. At no point will data be transferred outside of the EU, nor will it be transferred to any persons not previously stated.
All efforts will be made to anonymise data, identifying participants as numbers during the study. In the event of computer malfunction and lost data, at no point will participants names be documented, thus, ensuring privacy of those involved. The principal investigator, Richard Boczko, is responsible for the data entry, quality, data analysis, and data security.
The study will adhere to participant confidentiality. Data storage will comply with GDPR and kept for no longer than necessary for the purpose of this study, after which time, the data shall be deleted, and written copies destroyed.

Details regarding GDPR compliance and the UK Data Protection Act 2018, are set out as follows: The Manchester Metropolitan University is the acting data controller, and the principal investigator is the data custodian. Manchester Metropolitan University, the principal

investigator, Richard Boczko and the supervisory team (Dr Andrew Wood and Dr Martin Turner) will have access to personal data during and after the study. At this stage, it is not anticipated that any data will be shared with any third-party persons.
The principal investigator is responsible for the destruction of data. This will be carried out as in accordance with the MMU data destruction policies. For all data stored using USB, multi pass pattern wiping, degaussing or disintegration will be used to destroy existing sensitive information obtained during this research. Data recorded using paper will be destroyed using a micro crosscut shredder or incineration. Equipment such as a computer will also be used to store data, however, the computer will be reused, therefore; all traces of the study and its data will be cleaned accordingly. In the case of a data breach, principal investigator, Richard Boczko is responsible for informing the Data Protection Officer.
All necessary measures will be taken to ensure the privacy and confidentiality of all those involved in this research. GDPR compliance is a main priority and adhering to the UK Data Protection Act 2018 is at the forefront of this research and the design process. Limiting access of data to a minimum, (i.e., the principal investigator and the supervisory team), will ensure the security of the data.
For further information about use of your personal data and your data protection rights please see the https://www2.mmu.ac.uk/data-protection.

Who has reviewed this research project?
To date, this research project has been reviewed by the principal investigator, Richard Boczko, members of the supervisory team, Dr Andrew Wood, and Dr Martin Turner, as well as Manchester Metropolitan University and the Ethics Committee.

What will happen to the results of the research study?
The data arising from the study will be primarily owned by the principal investigator, Richard Boczko. Whilst access will be granted for audit by the Manchester Metropolitan University, authorship will be limited to those who have made a significant contribution to the paper, (i.e., principal investigator), Richard Boczko. Due to this study being part of a larger ongoing research project, it is understandable that at this early stage, it cannot be confirmed where the project will be published, nor can it be confirmed where the final project can be accessed. Nevertheless, viewing the final project can be made possible upon request. Additionally, all contributors and supporters of the research will be acknowledged with the publication of this paper. Members of the supervisory team, Dr Andrew Wood, and Dr Martin Turner, as well as Manchester Metropolitan University and the Ethics Committee will be acknowledged for their combined efforts and support in making this research possible. There are no plans to notify participants of the outcome of the study, however, findings can be made available to those involved upon request. The anonymised dataset will be made publicly available, however, as previously mentioned, where and when data will be made publicly available is not know at this stage.

Who do I contact if I feel my rights have been violated?
If you have any concerns regarding the personal data collected from you, our Data Protection Officer can be contacted using the legal@mmu.ac.uk e-mail address, by calling 0161 247 3331 or in writing to: Data Protection Officer, Legal Services, All Saints Building, Manchester Metropolitan University, Manchester, M15 6BH. You also have a right to lodge a complaint in respect of the processing of your personal data with the Information Commissioner's Office as the supervisory authority. Please see: https://ico.org.uk/global/contact-us/

Additionally, you can contact:
Professor Khatidja Chantler
Faculty Head of Research Ethics and Governance
Manchester Campus
Manchester Metropolitan University
M15 6BH
K.Chantler@mmu.ac.uk

Finally, a thank you!
If you have decided to take part in the study, please continue to the consent form. I would like to take this opportunity to thank you on behalf of myself, Richard Boczko, and Manchester Metropolitan University for your participation in this study.

Appendix 4.5: Participant Debrief Sheet

Congratulations, you have now completed the study

Study Debrief

Title: Understanding the Characteristics, Personal Views and Opinions of a Competitive Triathlete

Lead Researcher:
Richard Boczko
Manchester Metropolitan University
Email: richard.j.boczko@stu.mmu.ac.uk

Supervisor:
Dr Andrew Wood
Manchester Metropolitan University
Email: andrew.wood@mmu.ac.uk

Supervisor:
Dr Martin Turner
Reader, Department of Psychology
Manchester Metropolitan University
Email: m.turner@mmu.ac.uk

We would like to take this opportunity to thank you for your participation in this research study.

The aim of this study was to gain your views on fictional scenarios relating to transgressive behaviour within the sport of triathlon. You were presented with various fictional scenarios relating to doping and transgression and using a Likert scale, you were asked to select the statement which most accurately reflects your own views, thus gaining an understanding of your attitude towards the behaviour. Furthermore, we gained demographic information and details in relation to your characteristics, views and beliefs.

We would like to remind you that you are free to withdraw at any time 'during the 6-week study period' without giving reason. You are free to withdraw during the study without your legal rights being affected and your data will not be used and deleted accordingly.

If you wish, you can obtain additional information in relation to this research.

Finally, you can request this debrief sheet in a document by emailing:
richard.j.boczko@stu.mmu.ac.uk

Thank you!

Appendix 4.6: Focus Group Transcript (partial)

About the focus group:

- The following focus group was conducted as part of Pilot Study 1b (Chapter 2).
- The session lasted for approximately 30-minutes and included three academic participants.
- Its objective was to gain feedback on key areas of the measure, including (but not limited to) the structure and design, and the implementation of first- and third-person perspectives.
- Note: although one participant provides opinion from an athlete's perspective, this particular participant was indeed an academic with keen interest in triathlon, thus their valuable input was documented accordingly.

Transcript:

"Thanks for joining me today, I appreciate your time. I would like to first start with thanking you for completing the first part of the study – I know it was very time consuming."
"The aim of today is simply just to follow-up and ask some questions about the study."
"So, I guess I will begin with asking how you felt engaging in the whole process - was the study easy to understand and was the whole process simple to navigate? Does anyone have any thoughts on this?"
"Yea I think I think it was quite straight forward to understand."
"Thanks [name], does anybody else have an opinion on this, they would like to share?"
"I thought it was, it was interesting actually."
"How about, was there anything that stood out as misleading during the study – anything in the content or the structure, even the rating of each scenario - does anyone have any thoughts on this?"
"No, nothing misleading, but it was way too long - by the time I got to halfway through, it was beginning to feel a bit laborious - so I would suggest that the measure could be cut down - it could be much shorter."
"I see, thanks, I appreciate your feedback on that. It's interesting you said that because I will come back to that and ask about the length of the measure and how you found it in that regard."
"It was fine for me - I thought that everything was easy to understand – not misleading."
"Thanks."

“Did you feel like you could potentially answer the questions honestly?”
“One of the things that the team and I wanted to ensure was that we developed a measure in a way that respondents could answer the questions truthfully. So, as you might have noticed, we had written scenarios in first-person perspective and others in third-person perspective. Do you have any thoughts on this? did you favour one or the other?”
“I did feel like, I felt it was easier to be more honest when it’s not first person, because I could detach myself from it.”
“I see, thanks for that [name]. Does anyone else have anything to add? Regarding being able to potentially respond to the scenarios honestly.”
“Looking from the outside, it might be very easy for people to say ‘yes of course I wouldn’t do that’, whereas those who adopt the first-person perspective may make people think a little more deeply about the scenario.”
“I see - thanks. Interesting point. One of the main things we are trying to achieve is we want to gain truthful responses - we need to be mindful of how we approach this – I want to touch upon credibility – what you thought about the study’s methodology – you know, was it convincing and do you feel like it’s potentially an effective approach?”
“I think so, I did think also that some of the methods of cheating could be improved.”
“Really, which ones?”
“Definitely the wetsuit one - it is hard to judge realism in this case, to be honest. I’ve been doing triathlons for 6-years but actually never thought about allowed thickness of the wetsuit”.
“Interesting – but do you think someone who wanted to gain an advantage would attempt…”

Appendix 4.7: Key Statistical SPSS Outputs from Chapter 3

Pearson's Correlation Coefficient

Correlations

		Age	Gender	ATTS	Emo	Extra	Open	Agree	Cons	SD	AI	iPBI	Self_Cont	SubNorm	Inten	PastBeh
Age	Pearson Correlation	1	-.150	.084	-.124	-.014	.148	-.075	.053	.150	-.172	-.276**	.150	.055	.042	-.020
	Sig. (2-tailed)		.095	.351	.168	.880	.099	.404	.557	.094	.055	.002	.095	.546	.640	.822
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Gender	Pearson Correlation	-.150	1	.006	.285**	.118	-.022	.334**	.176*	.077	-.153	.001	.138	-.164	.059	-.235**
	Sig. (2-tailed)	.095		.943	.001	.190	.810	<.001	.049	.394	.089	.992	.124	.067	.515	.008
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
ATTS	Pearson Correlation	.084	.006	1	.005	.113	.084	-.017	.166	.103	.043	-.148	.187*	-.187*	-.283**	-.145
	Sig. (2-tailed)	.351	.943		.956	.211	.350	.848	.064	.253	.635	.099	.037	.037	.001	.106
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Emo	Pearson Correlation	-.124	.285**	.005	1	-.112	-.087	.004	-.089	-.291**	.060	.139	-.189*	.094	-.045	.014
	Sig. (2-tailed)	.168	.001	.956		.215	.334	.963	.323	<.001	.509	.123	.035	.298	.618	.881
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Extra	Pearson Correlation	-.014	.118	.113	-.112	1	.182*	.113	.017	.178*	-.008	-.010	.008	-.054	.001	.049
	Sig. (2-tailed)	.880	.190	.211	.215		.042	.211	.850	.047	.933	.911	.927	.550	.994	.589
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Open	Pearson Correlation	.148	-.022	.084	-.087	.182*	1	.072	.115	-.118	.057	.083	.070	.095	.003	.104
	Sig. (2-tailed)	.099	.810	.350	.334	.042		.423	.202	.191	.525	.358	.437	.292	.976	.246
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Agree	Pearson Correlation	-.075	.334**	-.017	.004	.113	.072	1	.122	.190*	.011	-.067	.087	-.138	.007	-.063
	Sig. (2-tailed)	.404	<.001	.848	.963	.211	.423		.174	.034	.903	.459	.336	.126	.942	.485
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Cons	Pearson Correlation	.053	.176*	.166	-.089	.017	.115	.122	1	.230*	.095	.014	.531**	-.283**	-.166	-.158
	Sig. (2-tailed)	.557	.049	.064	.323	.850	.202	.174		.010	.292	.877	<.001	.001	.064	.078
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
SD	Pearson Correlation	.150	.077	.103	-.291**	.178*	-.118	.190*	.230*	1	-.172	-.321**	.337**	-.053	.089	-.079
	Sig. (2-tailed)	.094	.394	.253	<.001	.047	.191	.034	.010		.055	<.001	<.001	.559	.322	.383
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
AI	Pearson Correlation	-.172	-.153	.043	.060	-.008	.057	.011	.095	-.172	1	.378**	-.074	-.044	-.169	.147
	Sig. (2-tailed)	.055	.089	.635	.509	.933	.525	.903	.292	.055		<.001	.413	.624	.059	.102
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
iPBI	Pearson Correlation	-.276**	.001	-.148	.139	-.010	.083	-.067	.014	-.321**	.378**	1	-.244**	.068	-.006	.104
	Sig. (2-tailed)	.002	.992	.099	.123	.911	.358	.459	.877	<.001	<.001		.006	.450	.945	.250
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Self_Cont	Pearson Correlation	.150	.138	.187*	-.189*	.008	.070	.087	.531**	.337**	-.074	-.244**	1	-.207*	-.098	-.220*
	Sig. (2-tailed)	.095	.124	.037	.035	.927	.437	.336	<.001	<.001	.413	.006		.020	.277	.014
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
SubNorm	Pearson Correlation	.055	-.164	-.187*	.094	-.054	.095	-.138	-.283**	-.053	-.044	.068	-.207*	1	.388**	.400**
	Sig. (2-tailed)	.546	.067	.037	.298	.550	.292	.126	.001	.559	.624	.450	.020		<.001	<.001
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
Inten	Pearson Correlation	.042	.059	-.283**	-.045	.001	.003	.007	-.166	.089	-.169	-.006	-.098	.388**	1	.402**
	Sig. (2-tailed)	.640	.515	.001	.618	.994	.976	.942	.064	.322	.059	.945	.277	<.001		<.001
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125
PastBeh	Pearson Correlation	-.020	-.235**	-.145	.014	.049	.104	-.063	-.158	-.079	.147	.104	-.220*	.400**	.402**	1
	Sig. (2-tailed)	.822	.008	.106	.881	.589	.246	.485	.078	.383	.102	.250	.014	<.001	<.001	
	N	125	125	125	125	125	125	125	125	125	125	125	125	125	125	125

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

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

Hierarchical Multiple Regression

Model Summary[g]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.042[a]	.002	-.006	2.232	.002	.220	1	123	.640
2	.078[b]	.006	-.010	2.237	.004	.533	1	122	.467
3	.220[c]	.048	-.008	2.235	.042	1.042	5	117	.397
4	.251[d]	.063	-.001	2.227	.015	1.815	1	116	.181
5	.507[e]	.257	.199	1.992	.194	29.978	1	115	<.001
6	.582[f]	.338	.267	1.905	.081	4.586	3	112	.005

a. Predictors: (Constant), Age

b. Predictors: (Constant), Age, Gender

c. Predictors: (Constant), Age, Gender, Extra, Cons, Open, Agree, Emo

d. Predictors: (Constant), Age, Gender, Extra, Cons, Open, Agree, Emo, AI

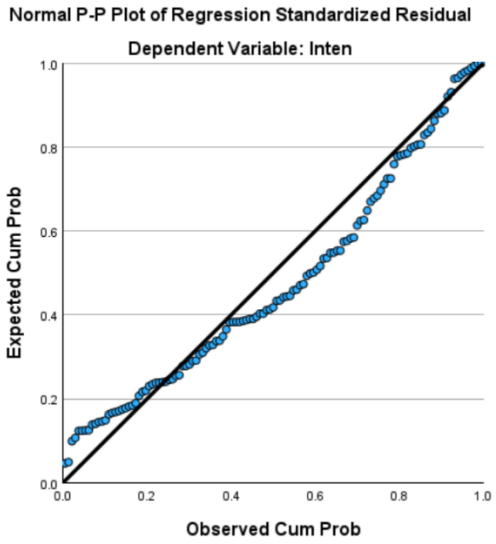
e. Predictors: (Constant), Age, Gender, Extra, Cons, Open, Agree, Emo, AI, PastBeh

f. Predictors: (Constant), Age, Gender, Extra, Cons, Open, Agree, Emo, AI, PastBeh, ATTS, SubNorm, Self_Cont

g. Dependent Variable: Inten

Descriptive Statistics

	Mean	Std. Deviation	N
Inten	5.85	2.225	125
Age	47.69	10.467	125
Gender	4.42	.496	125
Emo	10.96	4.163	125
Extra	13.05	4.745	125
Open	14.77	3.515	125
Agree	15.42	2.801	125
Cons	16.87	2.559	125
AI	44.13	8.698	125
PastBeh	5.34	2.959	125
ATTS	28.47	2.494	125
Self_Cont	41.47	8.464	125
SubNorm	5.30	2.387	125



Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.51	9.64	5.85	1.294	125
Std. Predicted Value	-1.810	2.932	.000	1.000	125
Standard Error of Predicted Value	.332	.960	.602	.124	125
Adjusted Predicted Value	3.32	9.57	5.85	1.313	125
Residual	-3.208	6.352	.000	1.810	125
Std. Residual	-1.684	3.334	.000	.950	125
Stud. Residual	-1.874	3.557	-.002	1.004	125
Deleted Residual	-4.039	7.256	-.006	2.022	125
Stud. Deleted Residual	-1.895	3.760	.004	1.020	125
Mahal. Distance	2.769	30.500	11.904	5.220	125
Cook's Distance	.000	.143	.009	.018	125
Centered Leverage Value	.022	.246	.096	.042	125

a. Dependent Variable: Inten

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	5.419	.935		5.796	<.001					
	Age	.009	.019	.042	.469	.640	.042	.042	.042	1.000	1.000
2	(Constant)	3.995	2.163		1.847	.067					
	Age	.011	.019	.052	.572	.568	.042	.052	.052	.978	1.023
	Gender	.299	.409	.067	.730	.467	.059	.066	.066	.978	1.023
3	(Constant)	6.171	2.510		2.459	.015					
	Age	.012	.020	.058	.626	.532	.042	.058	.056	.945	1.058
	Gender	.613	.465	.137	1.318	.190	.059	.121	.119	.757	1.321
	Emo	-.051	.052	-.096	-.991	.324	-.045	-.091	-.089	.865	1.156
	Extra	-.011	.044	-.024	-.257	.797	.001	-.024	-.023	.928	1.078
	Open	.011	.059	.017	.181	.857	.003	.017	.016	.927	1.079
	Agree	-.006	.077	-.008	-.083	.934	.007	-.008	-.007	.868	1.152
	Cons	-.176	.081	-.203	-2.165	.032	-.166	-.196	-.195	.929	1.076
4	(Constant)	8.000	2.846		2.811	.006					
	Age	.007	.020	.031	.332	.741	.042	.031	.030	.903	1.107
	Gender	.459	.477	.102	.962	.338	.059	.089	.086	.714	1.401
	Emo	-.042	.052	-.079	-.815	.417	-.045	-.075	-.073	.851	1.175
	Extra	-.010	.044	-.022	-.239	.811	.001	-.022	-.021	.928	1.078
	Open	.016	.059	.026	.276	.783	.003	.026	.025	.922	1.085
	Agree	.000	.077	.000	-.004	.996	.007	.000	.000	.865	1.156
	Cons	-.160	.082	-.183	-1.946	.054	-.166	-.178	-.175	.908	1.101
	AI	-.033	.024	-.128	-1.347	.181	-.169	-.124	-.121	.897	1.115
5	(Constant)	4.415	2.628		1.680	.096					
	Age	.010	.018	.047	.558	.578	.042	.052	.045	.902	1.108
	Gender	.939	.436	.209	2.156	.033	.059	.197	.173	.685	1.461
	Emo	-.061	.047	-.113	-1.299	.197	-.045	-.120	-.104	.847	1.181
	Extra	-.025	.039	-.053	-.634	.527	.001	-.059	-.051	.923	1.083
	Open	-.015	.053	-.024	-.286	.775	.003	-.027	-.023	.911	1.097
	Agree	-.004	.069	-.006	-.064	.949	.007	-.006	-.005	.865	1.156
	Cons	-.105	.074	-.121	-1.420	.158	-.166	-.131	-.114	.892	1.122
	AI	-.046	.022	-.178	-2.089	.039	-.169	-.191	-.168	.886	1.128
	PastBeh	.350	.064	.466	5.475	<.001	.402	.455	.440	.893	1.119
6	(Constant)	6.393	3.228		1.981	.050					
	Age	.010	.017	.047	.577	.565	.042	.054	.044	.884	1.131
	Gender	.936	.419	.209	2.235	.027	.059	.207	.172	.677	1.477
	Emo	-.065	.046	-.122	-1.429	.156	-.045	-.134	-.110	.808	1.237
	Extra	-.007	.038	-.015	-.185	.853	.001	-.018	-.014	.905	1.105
	Open	-.025	.051	-.040	-.494	.622	.003	-.047	-.038	.895	1.117
	Agree	.004	.066	.005	.057	.954	.007	.005	.004	.858	1.166
	Cons	-.051	.083	-.058	-.614	.541	-.166	-.058	-.047	.651	1.537
	AI	-.037	.021	-.146	-1.775	.079	-.169	-.165	-.136	.871	1.148
	PastBeh	.267	.066	.354	4.020	<.001	.402	.355	.309	.760	1.315
	ATTS	-.156	.072	-.175	-2.160	.033	-.283	-.200	-.166	.900	1.111
	Self_Cont	.007	.025	.027	.278	.781	-.098	.026	.021	.649	1.540
	SubNorm	.227	.083	.243	2.725	.007	.388	.249	.209	.742	1.348

a. Dependent Variable: Inten

Appendix 4.8: Key Statistical SPSS Outputs from Chapter 5

Pearson's Correlation Coefficient

Correlations

		Age	Gender	ATTS	Emo	Extra	Open	Agree	Cons	SD	AI	Self_Cont	SubNorm	Inten	PastBeh
Age	Pearson Correlation	1	-.071	.147	-.251**	.114	.020	.077	.108	.136	-.015	.186*	-.105	-.071	-.029
	Sig. (2-tailed)		.368	.063	.001	.150	.802	.330	.171	.087	.849	.018	.184	.370	.714
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Gender	Pearson Correlation	-.071	1	-.057	.121	.050	-.064	.044	.079	.053	-.088	.152	.035	.005	-.181*
	Sig. (2-tailed)	.368		.476	.127	.530	.417	.583	.318	.508	.268	.054	.659	.948	.022
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
ATTS	Pearson Correlation	.147	-.057	1	-.047	.053	-.002	.129	.185*	.151	.164*	.232**	-.138	-.348**	-.143
	Sig. (2-tailed)	.063	.476		.551	.502	.985	.103	.019	.055	.038	.003	.081	<.001	.070
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Emo	Pearson Correlation	-.251**	.121	-.047	1	-.214**	-.079	-.337**	-.213**	-.206**	.103	-.289**	.025	.063	.013
	Sig. (2-tailed)	.001	.127	.551		.006	.321	<.001	.007	.009	.192	<.001	.748	.431	.872
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Extra	Pearson Correlation	.114	.050	.053	-.214**	1	.092	.194*	.002	.058	-.020	.042	.106	.009	.036
	Sig. (2-tailed)	.150	.530	.502	.006		.248	.014	.981	.466	.801	.594	.181	.910	.647
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Open	Pearson Correlation	.020	-.064	-.002	-.079	.092	1	.126	.018	.047	-.024	.134	-.018	.054	.064
	Sig. (2-tailed)	.802	.417	.985	.321	.248		.111	.816	.555	.762	.090	.819	.498	.418
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Agree	Pearson Correlation	.077	.044	.129	-.337**	.194*	.126	1	.251**	.294**	-.057	.337**	-.149	-.219**	-.094
	Sig. (2-tailed)	.330	.583	.103	<.001	.014	.111		.001	<.001	.470	<.001	.059	.005	.235
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Cons	Pearson Correlation	.108	.079	.185*	-.213**	.002	.018	.251**	1	.238**	.065	.597**	-.189*	-.109	-.139
	Sig. (2-tailed)	.171	.318	.019	.007	.981	.816	.001		.002	.412	<.001	.016	.170	.079
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
SD	Pearson Correlation	.136	.053	.151	-.206**	.058	.047	.294**	.238**	1	-.145	.438**	-.147	-.100	-.341**
	Sig. (2-tailed)	.087	.508	.055	.009	.466	.555	<.001	.002		.066	<.001	.062	.205	<.001
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
AI	Pearson Correlation	-.015	-.088	.164*	.103	-.020	-.024	-.057	.065	-.145	1	-.022	-.030	-.049	.185*
	Sig. (2-tailed)	.849	.268	.038	.192	.801	.762	.470	.412	.066		.781	.701	.534	.019
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Self_Cont	Pearson Correlation	.186*	.152	.232**	-.289**	.042	.134	.337**	.597**	.438**	-.022	1	-.209**	-.203**	-.260**
	Sig. (2-tailed)	.018	.054	.003	<.001	.594	.090	<.001	<.001	<.001	.781		.008	.010	<.001
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
SubNorm	Pearson Correlation	-.105	.035	-.138	.025	.106	-.018	-.149	-.189*	-.147	-.030	-.209**	1	.336**	.228**
	Sig. (2-tailed)	.184	.659	.081	.748	.181	.819	.059	.016	.062	.701	.008		<.001	.004
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
Inten	Pearson Correlation	-.071	.005	-.348**	.063	.009	.054	-.219**	-.109	-.100	-.049	-.203**	.336**	1	.398**
	Sig. (2-tailed)	.370	.948	<.001	.431	.910	.498	.005	.170	.205	.534	.010	<.001		<.001
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161
PastBeh	Pearson Correlation	-.029	-.181*	-.143	.013	.036	.064	-.094	-.139	-.341**	.185*	-.260**	.228**	.398**	1
	Sig. (2-tailed)	.714	.022	.070	.872	.647	.418	.235	.079	<.001	.019	<.001	.004	<.001	
	N	161	161	161	161	161	161	161	161	161	161	161	161	161	161

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

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

Hierarchical Multiple Regression

Model Summary[g]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.071[a]	.005	-.001	2.023	.005	.807	1	159	.370
2	.071[b]	.005	-.008	2.029	.000	.000	1	158	.999
3	.252[c]	.063	.021	2.001	.058	1.906	5	153	.096
4	.257[d]	.066	.017	2.004	.003	.462	1	152	.498
5	.469[e]	.220	.174	1.838	.154	29.795	1	151	<.001
6	.567[f]	.322	.267	1.731	.102	7.385	3	148	<.001

a. Predictors: (Constant), Age

b. Predictors: (Constant), Age, Gender

c. Predictors: (Constant), Age, Gender, Open, Cons, Extra, Agree, Emo

d. Predictors: (Constant), Age, Gender, Open, Cons, Extra, Agree, Emo, AI

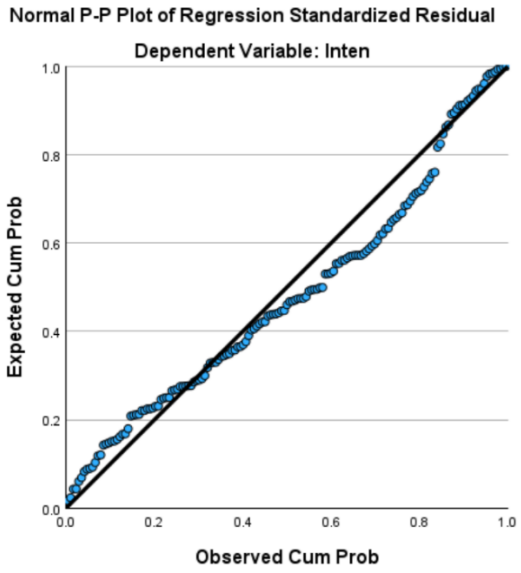
e. Predictors: (Constant), Age, Gender, Open, Cons, Extra, Agree, Emo, AI, PastBeh

f. Predictors: (Constant), Age, Gender, Open, Cons, Extra, Agree, Emo, AI, PastBeh, ATTS, SubNorm, Self_Cont

g. Dependent Variable: Inten

Descriptive Statistics

	Mean	Std. Deviation	N
Inten	6.00	2.022	161
Age	46.63	12.003	161
Gender	4.52	.593	161
Emo	10.43	4.104	161
Extra	12.81	4.480	161
Open	14.79	2.990	161
Agree	15.94	3.068	161
Cons	17.06	2.705	161
AI	44.33	9.204	161
PastBeh	5.85	3.123	161
ATTS	31.596	5.0549	161
Self_Cont	43.61	8.907	161
SubNorm	5.66	2.457	161



Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.30	11.02	6.00	1.147	161
Std. Predicted Value	-2.356	4.378	.000	1.000	161
Standard Error of Predicted Value	.268	.934	.479	.114	161
Adjusted Predicted Value	3.18	11.03	6.00	1.155	161
Residual	-3.692	6.250	.000	1.665	161
Std. Residual	-2.133	3.610	.000	.962	161
Stud. Residual	-2.342	3.806	.000	1.005	161
Deleted Residual	-4.452	6.949	.002	1.821	161
Stud. Deleted Residual	-2.378	3.994	.003	1.017	161
Mahal. Distance	2.846	45.612	11.925	6.564	161
Cook's Distance	.000	.125	.007	.016	161
Centered Leverage Value	.018	.285	.075	.041	161

a. Dependent Variable: Inten

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	6.558	.641		10.224	<.001					
	Age	-.012	.013	-.071	-.899	.370	-.071	-.071	-.071	1.000	1.000
2	(Constant)	6.556	1.426		4.599	<.001					
	Age	-.012	.013	-.071	-.893	.373	-.071	-.071	-.071	.995	1.005
	Gender	.000	.271	.000	.002	.999	.005	.000	.000	.995	1.005
3	(Constant)	8.312	2.087		3.982	<.001					
	Age	-.010	.014	-.060	-.735	.463	-.071	-.059	-.058	.926	1.080
	Gender	.073	.273	.021	.267	.789	.005	.022	.021	.956	1.046
	Emo	-.014	.043	-.028	-.313	.755	.063	-.025	-.025	.786	1.273
	Extra	.021	.037	.046	.566	.572	.009	.046	.044	.918	1.090
	Open	.054	.054	.080	1.007	.315	.054	.081	.079	.974	1.027
	Agree	-.151	.057	-.230	-2.665	.009	-.219	-.211	-.209	.823	1.215
	Cons	-.040	.062	-.054	-.649	.517	-.109	-.052	-.051	.900	1.111
4	(Constant)	8.847	2.234		3.960	<.001					
	Age	-.010	.014	-.060	-.735	.463	-.071	-.060	-.058	.926	1.080
	Gender	.052	.275	.015	.189	.850	.005	.015	.015	.944	1.059
	Emo	-.010	.044	-.021	-.231	.818	.063	-.019	-.018	.775	1.290
	Extra	.021	.037	.047	.580	.563	.009	.047	.045	.917	1.090
	Open	.053	.054	.079	.992	.323	.054	.080	.078	.973	1.027
	Agree	-.153	.057	-.232	-2.683	.008	-.219	-.213	-.210	.822	1.217
	Cons	-.035	.062	-.047	-.571	.569	-.109	-.046	-.045	.889	1.124
	AI	-.012	.018	-.054	-.680	.498	-.049	-.055	-.053	.967	1.034
5	(Constant)	6.318	2.100		3.008	.003					
	Age	-.008	.013	-.046	-.620	.536	-.071	-.050	-.045	.925	1.081
	Gender	.261	.255	.077	1.023	.308	.005	.083	.074	.923	1.083
	Emo	-.004	.040	-.008	-.097	.923	.063	-.008	-.007	.774	1.291
	Extra	.012	.034	.026	.342	.733	.009	.028	.025	.915	1.093
	Open	.036	.049	.053	.720	.473	.054	.058	.052	.969	1.032
	Agree	-.133	.052	-.202	-2.546	.012	-.219	-.203	-.183	.818	1.222
	Cons	.003	.057	.004	.052	.959	-.109	.004	.004	.876	1.142
	AI	-.028	.016	-.129	-1.729	.086	-.049	-.139	-.124	.934	1.070
	PastBeh	.266	.049	.411	5.458	<.001	.398	.406	.392	.909	1.100
6	(Constant)	7.050	2.143		3.290	.001					
	Age	.001	.012	.008	.109	.913	-.071	.009	.007	.893	1.119
	Gender	.145	.245	.042	.591	.556	.005	.049	.040	.889	1.125
	Emo	.005	.038	.011	.142	.887	.063	.012	.010	.752	1.330
	Extra	.005	.032	.010	.143	.886	.009	.012	.010	.897	1.115
	Open	.039	.047	.058	.838	.403	.054	.069	.057	.945	1.059
	Agree	-.097	.050	-.147	-1.916	.057	-.219	-.156	-.130	.782	1.279
	Cons	.058	.064	.078	.904	.367	-.109	.074	.061	.622	1.607
	AI	-.016	.016	-.071	-.998	.320	-.049	-.082	-.068	.901	1.110
	PastBeh	.207	.048	.320	4.290	<.001	.398	.333	.290	.822	1.216
	ATTS	-.099	.029	-.248	-3.425	<.001	-.348	-.271	-.232	.872	1.147
	Self_Cont	-.007	.021	-.029	-.308	.759	-.203	-.025	-.021	.523	1.912
	SubNorm	.175	.060	.212	2.932	.004	.336	.234	.198	.874	1.144

a. Dependent Variable: Inten