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**A multi-method investigation into
physical activity in middle-age
through a lifecourse perspective**

Anne Elliott

M00287984

A thesis submitted to Middlesex University in partial
fulfillment for the degree of Doctor of Philosophy

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Abbreviations

ADL	Activities of daily living
BMI	Body Mass Index
BPS	The British Psychological Society
CPD	Continuing Professional Development
CVD	Cardio-vascular disease
FIA	Fitness Industry Association
HE	Higher Education
LA	Local Authority
NCD	Non-communicable disease
NICE	National Institute for Clinical Excellence
NOS	National Occupation Standards
NRS	National Research Survey
ONS	Office of National Statistics
PA	Physical Activity
PE	Physical Education
REPS	Register of Exercise Professionals
SES	Socio-economic status
UK	United Kingdom
USA	United States of America
WHO	World Health Organization

Abstract

This thesis began with practitioner observations in a specialist personal training practice, where anecdotal themes were noted from middle-aged clients (45-65 years old). Sedentary, exercise-averse individuals reported poor experiences of physical education in secondary school, whereas active clients gave a different narrative. These themes suggested differing life course trajectories that could result in 'corporeal dissociation' (CD), a term, defined here to describe a state of physical detachment that might result in adult inactivity. 'Lives lived' were investigated through a lifecourse theoretical perspective, within a pragmatic paradigm. Methodological Bricolage employed both qualitative and quantitative multi-methods to look at the research questions from differing perspectives. In Study 1, 10 practitioners were interviewed qualitatively to see if the original observations were replicated in other practices within the same geographical area. Data was analysed using content and emergent thematic analysis and it was found to be so. In Study 2, 800 middle-aged men and women across England completed a quantitative online survey that covered 63 experiences, grouped thematically, between the ages of 11-16: 'home', 'about me', 'school', 'friends and leisure activities'. Data was statistically analysed using Principal Component Analysis followed by ANOVA and 16 significant dispositions and experiences centred around PE emerged as signifiers of corporeal dissociation in middle age. Study 3 took a sample of 8 men and 8 women from Study 2. It used narrative inquiry and established lifecourse themes of activity and inactivity that link adolescence and middle-age, with the individual's relationship with their PE teacher being the biggest signifier and influence on later physical activity. Results show that corporeal dissociation can be found in practice and its origins in PE experience identified. Tentative life path signifiers have been determined and have been mapped between school and middle age. The outcome of the study is an understanding and definition of corporeal dissociation and a scalable tool for the practitioner to identify corporeal dissociation in new clients to help aid initial exercise adherence by prescribing suitable exercise programming.

KEYWORDS: Sedentary, active, inactive, bricolage, corporeal dissociation, lifecourse, narrative, personal trainer, school, physical education

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A multi-method investigation into physical activity in middle-age through a lifecourse perspective

Aims

1. To investigate the nature of a phenomenon of 'corporeal dissociation' observed in practice and its extent in the wider population
2. To evaluate the educational environment of the 1950s - 1970s to find evidence of clients' reminiscences
3. To investigate if there are factors that might lead to active or inactive behaviour in middle age
4. To consider evidence to formulate a practitioner approach to encourage exercise participation and adherence in middle age

Objectives

1. To interrogate physical activity literature and related disciplines for evidence to inform clients' perspectives of their physical activity experiences in the 1950s – 1970s
2. To locate the observed client reported experiences within a knowledge base or academic discipline/s
3. To explore fitness practitioner's observations of their active and inactive clients
4. To survey a middle aged population (45-65) and explore how their early experiences might affect life paths of later physical activity behaviours
5. To interview individuals and investigate common themes of physical activity that connect adolescence to middle age

Research questions

- To what extent can 'corporeal dissociation' be identified in middle-aged men and women in a health and fitness context and in which forms?
- What are middle aged people's perceptions of their adolescence and themselves as exercisers?
- Can lifecourse links be found between adolescent experience and middle-age activity behaviours?
- Can an understanding of clients' adolescent physical activity experiences inform practitioners to encourage exercise adherence in middle age?

• Introduction •

'Physical inactivity has been identified as the fourth leading risk factor for global mortality (6% of deaths globally (World Health Organization, 2010, p. 10)

There is an increasing need to find solutions to reverse the problems created by the burgeoning sedentary lifestyle of much of the British population. In the wake of a sedentary lifestyle comes a raft of concomitant chronic diseases. This places a heavy cost on both those suffering from the ill health that inactivity brings and society at large, which must bear the actual cost of treating these people. This thesis investigates one facet of this complex issue and the role that personal training plays in it.

Chapter one sets out the theoretical perspective used in this research, followed by an explanation of corporeal dissociation and re-association as observed in a personal training practice in North West London. Then personal training and its importance as an established pathway for health and fitness and physical activity adherence in middle age is contextualised from a global, national and individual practice perspective.

Chapter two considers relevant academic literature to conceptualise corporeal dissociation. It takes a multidisciplinary approach beginning with lifecourse theory and learned helplessness and then moves through the educational environment of the 1950's-1970s, maths anxiety and finally considering the body as a pedagogical device.

Chapter three details the bricolage methodology used in this research. It considers the constructionist ontological and pragmatic paradigm stances taken and ethical considerations utilized. Each 'study' of research is then discussed in detail describing method, sample, data generation and data analyses.

Chapters four, five and six in turn expound the methods used for data collection and analysis, the findings and discussion from each research study: Study 1 (Chapter 4) involves a qualitative investigation into the practice perspectives of personal trainers using semi-structured interviews and content and emergent analysis, Study 2 (Chapter 5) quantitatively considers the responses of 800 middle-aged men and women nationally, of their adolescent experiences. Data are analysed statistically and a scalable tool is produced at the end of chapter 5 to help practitioners identify individuals with corporeal dissociation, and study 3 (Chapter 6) qualitatively considers the link between adolescent experiences and middle-age physical activity behaviours through the lifecourse by using narrative inquiry with self reported extremely active and inactive individuals.

Chapter seven discusses the evidence for corporeal dissociation, what it is, what causes it, how it affects lives and the possibilities of re-association. The final chapter takes an overview of the entire research project and its findings and considers its relevance to personal training practice, understanding the wider issue of inactivity and adding to understanding lifecourse studies.

Definitions of activity and inactivity used in this thesis

Physical activity is defined as, '*any bodily movement produced by skeletal muscles that results in energy expenditure*' (Atkinson, 1985; Bouchard, Blair, and Haskell, 2007; Cavill, Roberts, and Rutter, 2012; Spirduso, Francis, and Macrae, 2005), whereas 'exercise', a sub-division of physical activity, is defined as, '*physical activity that is planned, structured, and repetitive for the purpose of conditioning any part of the body*' (National Institutes of Health, 2009). Adults tend to have a clear grasp of this nuance when asked to explain the difference between physical activity, exercise and sport (Elliott, 2012), and they can go some way to explaining the differences they tacitly understand. However, literature in the health and fitness field confuses matters, as the terms 'physical activity and exercise' are often interchanged.

Physical activity is measured as a metabolic equivalent of task (MET). One MET is measured as 3.5ml oxygen uptake per 1Kg body weight per minute. Therefore watching television is 1.0 MET and walking at a moderate speed of 5.5km/h is 3.6 METS.

Sedentary behaviour as 'physical inactivity'

'Sedentary behavior commonly is defined as a MET of 1.5 or less. This definition corresponds to activities undertaken while sitting, such as watching TV; of importance, any standing activity (unless absolutely still) is classified as non-sedentary' (Yates, Wilmot, Davies, Gorely, Edwardson, Biddle, and Khunti, 2011, p. 33).

For the purposes of this thesis, the terms have been used as defined above. When terminology has been blurred, these definitions have been applied.

• Chapter 1 •

Corporeal dissociation and its context

The health and fitness industry is complex and multifaceted. With present concerns regarding inactivity, it might be considered from governmental, medical, business, cost, career or end user perspectives. Each of these in turn can be considered from numerous specific standpoints. This research study is located within personal training practice, where clients seek help to be healthier and, although its focus is on the relationship of middle-aged people to physical activity, it is necessary to contextualise personal training practice, to better understand this research.

Theoretical framework for study

The theoretical perspective used in this research is lifecourse, sometimes called lifecourse theory, life span theory or psycho-social theory (Alwin, 2012).

Traditional modes of studying people look at life stages as discrete pockets that have no influence on each other i.e. childhood, old age or pregnancy, whereas lifecourse encompasses the whole life and acknowledges that an individual's previous historical experiences can affect their present and future actions; human development happens over time and people construct their own lives with choices and actions happening within social structures (Alwin, 2012). It is these characteristics that make it an appropriate perspective in which to investigate the research questions and allow the researcher to look to historical events in people's lives and explore answers to behaviours presenting today.

The origins of the study

A personal trainer is defined as:

'a fitness professional involved in exercise prescription and instruction.

They motivate clients by setting goals and providing feedback and

accountability to clients'. (Earle, 2004, p. 162)

The private practice that generated interest in uptake in physical activity in middle age is located in North West London, in a relatively affluent area. The Office for National Statistics (<http://www.neighbourhood.statistics.gov.uk>) ranks the area 24951 of 32844 areas with number one having the most deprivation . The practice is small and specialised. Its clients range from 20 years old to 87 years old, although, they are predominantly middle-aged men and women aged 45-65, with more of the latter than the former. Many of the clients come to the practice because of its reputation for individual focus. They report they were dissatisfied with their previous training experiences because their gym environment was too impersonal or their preceding trainer was too young, too inexperienced, not knowledgeable enough or was lacking in empathy. Clients find the practice through word of mouth or medical referral because of its reputation for success on working with 'special populations'.

The term 'Special Populations' has no specific definition but is understood within the health and fitness and medical industries to mean clients/patients who have chronic disease such as obesity, diabetes mellitus, hypertension, arthritis, cardiovascular disease amongst others, all of which have poor long-term outcomes (Coulson, 2011). The referral process from the medical to the fitness practice is called GP referral and is covered by the Department of Health's 2001 National Quality Assurance Framework. The minimum qualification level for fitness professionals to prescribe exercise to special population clients was set at National Vocational Qualification (NVQ) Level 3 for the broad ranging 'GP Referral'

and Level 4 for specialist practitioners to work with particular conditions such as obesity or lower back pain. These National Occupational Standards (NOS) and quality standards are now monitored and developed by 'Skills Active', which is the Sector Skills Council for active leisure (www.skillsactive.com). Practitioners are encouraged to join the industry association, the Register of Exercise Professionals (REPS) who monitor qualifications gained.

Although a minority of practice clients have remained physically active throughout their life and have come to the practice for the exclusivity it offers, most tend to be unaccustomed to exercise. The catch all title of 'sedentary' (as absence of physical activity) might not be an appropriate descriptor here, for as Thompson and Batterham (2013) have shown in their work on physical activity profiling, individuals can vary in their physical activity levels (PAL) when correlated against activity intensity measured in MET's over a 24-hour period and they may be active but do no exercise. Thus, a single descriptor or dimension of physical activity might not be enough. In regard to the practice clients this refers to an avoidance of any physical activity that might be construed as exercise or sport, most commonly reflected in their participation in inactive occupations and leisure pastimes.

Most practice clients belong to a single or multiple special population and many of the conditions have been medically diagnosed, although others like overweight/obesity may not be. It is common for clients to present with co-morbidities such as obesity, diabetes, hypertension and arthritis. Thus the exercise prescription becomes quite complex. By considering each client's individual social, biographical, physical and psychological requirements, bespoke programmes are drawn up. Clients will attend and have their exercise sessions overseen for 30-60 minutes, 1-6 times a week. The average working relationship with a client is two and a half years. Anecdotally, this approach has

had great success, for example, a severely osteoporotic, 63 year old client improved her hip bone density by 5% in 12 months, an asthma sufferer ran a 5k race for charity in 9 months, a 46 year old CVD sufferer cycled from London to Paris after 20 weeks training and a morbidly obese 21 year old young woman lost half her body weight and achieved her goal of being offered a place at drama school. Such a focused approach can be shown to be highly effective. However, it is time intensive and expensive for the client.

The nature of the relationship built with the client, may have a bearing on success. To illustrate, a lot of time is spent in each other's company and a personal trainer is one of the few people who sees a client at their best, their worst and physically unsure. Clients are regularly asked to attempt difficult and even painful manoeuvres by their trainer and they must have trust that their trainer is not going to harm them. In fact, this trust is key to improvement. 'Loading' muscle, increasing range of motion and stressing the cardio-vascular system are all standard approaches to improving fitness (Wilmore, Costhill, and Kenney, 2008) and may all be uncomfortable or create concern in a client new to exercise as they attempt to overcome psychosomatic defence mechanisms built in to protect the body from harm. As well as taking this leap into the unknown via this relationship based on trust, they must overcome their own socio-biographical perspectives on exercising, which may well be negative. Thus it is common to build a strong rapport with the client in the normal process of training through conversation, during which they are likely to expose intimate and personal experiences and feelings (Thompson and Thompson, 2005).

Over time this trust can encompass many aspects of their professional and personal lives. Much relevant information can be gleaned by the trainer and be incorporated intuitively into the programme. For example, if a specification for the programme is to help the client enjoy the experience so that they will want to

continue, it is counter productive to make them perform vertical jumps if they have related that they dislike the activity. As obvious as this may seem, it is not a universally adopted principle. The trainer may believe that jumping is a good exercise whether it is liked or not; a worthy bitter medicine. Being forced to adopt exercise they did not like or found too difficult is a commonly reported reason clients disliked their previous trainers (Elliott, 2012). Trainers are also prone to assume that clients are able to push themselves physically as much as they do themselves and also enjoy it as much (Philips and Drummond, 2001). This has been shown to have a negative motivational effect on many clients' exercise compliance.

The client's biography and perceptions of physical activity are a common themes for discussion and as events are discussed over time, a bigger picture of their historical experience can be built. This may not appear chronologically and previous conversations may need to be referenced in order to develop a context. However, the topic usually elicits a narrative from the client, evoked by the exercise environment where it is taking place. Over time, a story will emerge that becomes a container of experiential connections rather than reported factual events (Blaikie, 1995).

Whilst working in this manner with clients, recurrent themes emerged from their narratives about their experiences of differing pathways. Some clients reported having enjoyed physical activity throughout their lifecourse. Many of their first major sporting memories were at school in physical education (PE). They were good at it or liked the teacher. Post-school, they continued to be active. They followed careers that have elements of activity in them and partook in physical activity for leisure throughout their lives. Extrinsic life-course determinants, such as a young family or job promotion, might mean they halted exercise for short periods but during calmer phases they actively participated in age-appropriate

sports. Their reasons for coming to the practice were that they might improve their existing sporting performance such as their golf swing or get back to a past level of fitness in order to take up or improve their game. They also showed a greater awareness of their body than inactive clients, and believe in its capacity to function effectively because at some time in the past it did. They knew what they wanted to achieve and required help to reach their goals safely and efficiently.

On the other hand, other clients, who also saw school education as a significant point in their physical activity history, reported an unpleasant event/s happening to them during PE classes at the specific ages of 14-15. Figure 1 (page 43) illustrates the regimented approach, which was common in this period. Their memories included general comments such as, "it was like boot camp"(male client aged 49), "I hated it because I couldn't do it" (female client aged 57), "I used to 'bunk' off PE" (female client aged 63), or "I was made to feel inadequate" (female client aged 60), and many could relate specific single negative events with clarity, even after all this time. The events varied from person to person: such as being embarrassed in front of their cohort because they could not do or failed a particular task, feeling physical pain when attempting then failing a task after having been harangued by the teacher to participate, always being the last to be picked for the team or feeling incapable through constant jibes from the teacher. Others reported a number of minor events that cohered into a more amorphous loathing of the subject. Their consequent decision was that PE was not for them. Many had such extreme reactions to these events they reported truanting during the PE class periods or arriving with inadequate kit so they would have to sit on the bench and watch their classmates, or just refusing to participate so that they would be told to leave and see the headmaster. These memories come from people that are now successful members of their communities and professions,

but who have been so affected by their experiences, they have done little exercise since school, some 30-50 years ago.

From my observations a pattern emerged, where their body became a functional vessel and was largely neglected through consequent lifestyle choices. They tended to have desk-based jobs. This apparent uncoupling of physicality awareness was named 'corporeal dissociation' - a term developed as a starting point for this study out of these practitioner observations.

'Corporeal Dissociation'

The term 'corporeal dissociation' was utilised as a specific concept to describe events reported by clients, to encapsulate a phenomenon where awareness of their body diminishes post-adolescence. However, this loss of awareness was not from corporeal experiences such as using the senses: eating, smoking, laughing, getting in and out of bed, rather from giving their body a lower priority. A suitable analogy is that of the body being akin to a 'neglected relative', known about and in the background. The vocabulary of movement became reduced through this process. They emphasised the capacity and ability of the mind over that of the body. Thus such people tended to have cerebral occupations with desk bound jobs. This downgrading of knowing or distancing, led to a reduction in physicality. Years of limited or incorrect movement patterns had also meant lost or incorrect neural movement pathways (Bouchard et al., 2007; Kumar and Clark, 2005).

As no descriptor was found in the academic literature to describe such a phenomenon or state, it was necessary to develop a term that both described and denoted it. 'Dissociation' was chosen as it best described the event action.

According to the New Oxford Reference Dictionary, 3rd Edition (1996) dissociation is, “to *disconnect or to become disconnected; separate*”. The phenomenon was sought within psychiatry, where a syndrome called ‘Dissociation’ already exists. However, this extreme condition is defined as “*separation of normally related mental processes, resulting in one group functioning independently from the rest, leading in extreme cases to disorders such as multiple personality*” (Somer, 2011, p. 157). It has clearly defined manifestations, diagnosis and treatments and did not fit the observations. As ‘dissociation’ alone would not suffice in case it was confused with the psychiatric condition, it was decided to add a qualifying term. Several were considered: body, somatic, corporeal and physical. ‘Physical’, was rejected due to its specific ‘movement’ only connotations. The events recognized encompassed this but much more also. ‘Body’ likewise was discarded because of its generic and liberal use in fields as diverse as fashion and ergonomics. ‘Soma’ was considered but eschewed because of the common association in psychology. As it was suspected the phenomenon was going to involve many facets of body, it was therefore, ‘corporeal’ (from the Latin, corpus) that was chosen to be the best descriptor.

The term ‘corporeal dissociation’ was sought in both academic and non-academic literature. Only two examples were found, one used in the title of a conference presentation, but the talk itself had not been published so it is unknown how the term was used and one in a nonacademic book on shamanism. All other references found the words used in the same context, but not together as a descriptor. The main fields of research that use the terms can be seen at table 1.

FIELD OF RESEARCH	EXAMPLE PAPER
The body and technology	Murray, C D., Sixsmith, J. (1999). The corporeal body in virtual reality <i>Ethos</i> , 27(3), 315-343.
Sense of body through brain damage or pathological condition	Frassinetti, F., Fiori, S., D'Angelo, V. (2012). Body knowledge in brain-damaged children: a double-dissociation in self and other's body processing <i>Neuropsychologia</i> , 50(1)
Psychiatric illness/neuroscience	Hart, C. (2008). Affective association: an effective intervention in countering fragmentation and dissociation. <i>Journal of Child Psychotherapy</i> , 34, (2)
Philosophical location of self	Young, Garry Whitty, Monica T. (2010). In Search of the Cartesian Self: An Examination of Disembodiment within 21st-Century Communication. <i>Theory and Psychology</i> , 20(2)
Effects of traumatic experience	Coy, M. (2009). Invaded spaces and feeling dirty: Women's narratives of violation in prostitution and sexual violence. <i>Rape: Challenging contemporary thinking</i> , 184-206.
Arts	Lutas, L. (2014). The Body as a Parchment in Literature, Cinema and Painting. In <i>Bodies in Between: Corporeality and Visuality from Historical Avant-garde to Social Media, 29-31 May, 2014, Cluj-Napoca, Romania</i> .
Acting	Zarrilli, P B. (2004). Toward a Phenomenological Model of the Actor's Embodied Modes of Experience. <i>Theatre Journal</i> , 56(4)
Unpublished talk	Stapleton, E. (2009) Body Enhancement and Corporeal Dissociation: the "Problem Without A Name" of the 21st Century Talk given at Annual Political Theory Conference; Manchester Metropolitan University, Sep 3, 2009.
Non-academic sources/uses	Buddhist Vipassana

Table 1. Fields of academic research that use 'corporeal' and/or 'dissociation' but none put them together as a term except for last two.

Recognising patterns of behaviour, such as those seen in corporeal dissociation, and being reactive to them is common to practice, although formal definition of them is not necessarily so. Schön's (1991) description of practice as 'swampy lowlands' has resonance in that it tends to be dynamically reactive and is results driven. This means that practitioners veer to black and white decision strategies in order to move forward, unlike academic research, which is concerned with examining the spectrum of shades of grey that might lie in between. The dualistic observations of individuals reporting themselves as either lifelong active or inactive is consistent with such a practice approach. Clients might even be said to be colluding in this pragmatic perspective as they have come with specific aims in mind, to get fitter and healthier. Clear polarised thinking here will aid them achieve their goal. If they see themselves as inactive/thinkers they appreciate the need to become active/doers and they look for the fitness training to facilitate this change.

There is a long history of thought that has considered such a dualism of head and body through analytic rationalism stretching back to Socrates (Ramsden, 2013) and it is one such; the Cartesian model, that still underpins modern medicine.

“Descartes considered the mind the thinking thing (res cogitans) as separate from the non thinking body with its mechanical parts (res extensa).”
(Donaghy, 2007, p. 12).

As the project started from a strongly polarised practice observation, this research project began with this dualistic practice view. Can the world be divided into two groups; active and inactive? As the investigation progressed a much more intricate picture emerged. The complexities of both humans and the society they move around in (Burkitt, 2012) led to consideration of the subtleties in such a nexus and although the impetus of research was based in the phenomenon as observed, the observation must be placed within a wider range of perspectives to locate the ‘self’.

The location of ‘the self’ is multi-faceted. *‘The term ‘somatic society’ coined the importance of the body in contemporary society* (Grogan, 2008, p. 2). Burkitt (2012) explains that the social self is responsive to a number of power structures that include status, class, beliefs as well as bodies of knowledge gathered within society (such as science for example). These various pressures are dynamic and differ dependent on age/period, geography and cultural history. He, thus, claims that the ‘self’ is a collective notion that cannot be abstracted into individual facets.

This is more closely defined by Markula (2014), whose work also came from her practice as a Pilates teacher. She considered the socio-cultural view of female bodies today in a neo-liberal context where, as well as a previously prevailing view of ‘body beautiful’, there is now a personal responsibility for keeping the body healthy and an increasing importance on ‘functionality’ as a requirement of

the social body. Shilling (2005) places the body in an even tighter social stricture in that the body today is a personal resource of its owner that can be used as a project to become a product to be modified through various industries such as health and beauty. The body is a dynamic element of the individual's social identity.

Bernstein's Theory of Symbolic Control located identity in the language of social interactions. Conversation was said to shape group assumptions and the types of relationships developed within the group affect the type of language it uses (Atkinson, 1985). He talks of codes such as a 'restricted code' in which group members can 'read between the lines' due to their shared assumptions and understanding. These codes were incorporated into his 'language/pedagogic device'. This was further expanded and clarified by Evans, Davies, and Rich (2009), who developed an holistic framework for considering corporeality within an educational setting, which they called 'corporeal device'. Here, the body must be seen as the relay of the language device equally through biology, culture and predilection of class, which together modify and drive conscious and subconscious embodiment. Through this, institutions, such as education, create and control practice of what is and what is not a perfect health and fitness. Iverson (2012) in her discussion of somatic and semiotic facets of body, likens pupils attending school with 'body codes' reflective of Bernstein, in that there are predispositions to physicality influenced by home, peers, community, socio-economic status and culture that might automate movement and attitudes to movement. She sees the teachers role as expanding the physical vocabulary. It might be said that this is what personal trainers do when working with middle aged clients.

If not addressed early, these attitudes might become ingrained and reasons to take up exercise be lost. Concerns about the 'body' in middle age might seem to

be a clear reason for both males and females to seek out the services of a fitness practice. However, it might be noted that for many, having a personal trainer is a status symbol but this implicitly suggests a partial unwillingness to take personal responsibility for their own health or deferring to a professional who can lead. The trainer holds the knowledge and they come along for specific prescriptive exercise work. It is a common experience amongst fitness professionals that clients have or are given knowledge that activity might alleviate their personal suffering from chronic lifestyle disease and yet they chose to remain inactive (Backhouse et al., 2007). They are also aware of public health messaging that *'exercise has a feel-better effect'* (Backhouse, Ekkekakis, Biddle, Foskett, and Williams, 2007, p. 498) yet still they remain inactive. Social expectancy theory *'predicts that people behave more favourably towards attractive others'* (Jackson, 2002, p. 15), therefore, it would be socially advantageous to keep weight off and look fit and healthy. It would seem that both intrinsic and extrinsic drivers are insufficient. There is a disconnect between the individual, their social body and their physicality and although this cannot be claimed to be universal it may be a contributing factor to the significant national health and fitness concerns as reported in this thesis.

'...and re-association'

Clients who self reported with the factors that are described as corporeal dissociation, presented at the practice predominantly in middle-age. They were suffering from the onset of expected conditions of sedentary lifestyle choices of middle age such as being overweight/obese, having diabetes, lower back or shoulder pain or cardio vascular disease amongst others (Eastwood, 2013a) as would be expected after 30 years of physical inactivity. They were aware of the importance of exercise as part of a healthy lifestyle and acknowledged their body

but had become so dissociated with its physicality in the intervening years that in order to be successful exercisers, they first had to develop a physical vocabulary and engage with re-association.

The re-association involved both physiological and psychological strategies that might be recognized as a standard approach taken by personal trainers, who have specialist qualifications such as GP Referral (Coulson, 2011), to clients who have little exercise experience.

Practitioner context

Most practitioners are self-employed and relatively autonomous, but even for those who work within large gym chains, it is important to put personal training practice into a local, national and global context. Health policies that are developed on a pan-national level have ramifications for the individual sole trader.

Global Context

'Physical inactivity' is the 4th leading risk factor for global mortality in non-communicable diseases (NCD's), sandwiched between 'high glucose' in 3rd place and 'overweight and obesity' in 5th place (Lee, Shiroma, Lobelo, Puska, Blair, and Katzmarzyk, 2012; World Health Organisation, 2010). These three risk factors are inextricably linked;

“Unhealthy diets and physical inactivity are (thus) among the leading causes of the major non-communicable diseases, including cardiovascular disease, type 2 diabetes and certain types of cancer, and

contribute substantially to the global burden of disease, death and disability” (World Health Organisation, 2004, p. 2).

It has been estimated that 6-10% of the world’s NCD’s are associated with sedentary lifestyle (Lee et al., 2012).

Table 2. Main factors for sedentary lifestyles.

Poverty	(Marmot, 2009)
Eating energy dense – nutrient poor food	(World Health Organisation, 2004)
Living/working physical environments	(Brown, Smith, Hanson, Fan, Kowaleski-Jones, and Zick, 2013)
Reduced levels of activity at home including TV watching	(Biddle, Gorely, and Marshall, 2009)
Work, transport	(World Health Organisation, 2004)
Household labour saving devices	(Archer, Shook, Thomas, Church, Katzmarzyk, Hébert, McIver, Hand, Lavie, and Blair, 2013)

For example, (Table 2) regarding labour saving devices in the US, housewives involved in household management were shown to be expending only 1800 active kcals per week (Archer et al., 2013). Daily patterns of behaviour have undergone a rapid change, which continues to cause rates of poor health outcomes to rise. Recent work on health inequalities based on socio-economic status (SES) across England (Marmot and Bell, 2012) show that this might not be equally distributed but found to be higher in geographical areas of deprivation. When considering diet and sedentary lifestyle together, the picture becomes acute; in 2011, the daily occupational caloric expenditure for US men was minus 140 kcals and for women was minus 120 kcals (Church, Martin, Thompson, Earnest, Mikus, and Blair, 2009). Blair (2013) reinforced the importance of physical activity as well as calorie intake through his longitudinal studies of obesity in America. He has shown that an inactive, normal weight individual is more likely to die earlier than an obese individual who is active (Blair, 2013).

Although this pattern of inactivity is more prevalent in the developed world, the World Health Organisation reports a similar upward trend for all countries for which data are available. This is supported by the World Cancer Research Fund WCRF International (2010) who report that,

'globally, 31% of adults 15 and over were insufficiently active in 2008... and high income countries had more than double the prevalence compared to low income countries for both men and women' (p. 1).

For example, in the UK 63% adults were physically inactive, whereas in Bangladesh there were 5% (WCRF International, 2010). With such progressive lack of energy expenditure (Archer et al., 2013) the morbidity rates discussed (Lee et al., 2012) are inevitable if not conservative for the future.

Addressing national governments, the WHO encouraged a vision that the health of a nation is bound to its economic growth and wellbeing (World Health Organisation, 2010), promoting population health as a necessary economic development need. They produced a national framework model to evaluate individual policy implementation and help national governments create holistic coherent, quantifiable and measureable programmes (Votano, Parham, and Hall, 2008). The prescription went so far as to suggest policies that incentivised, *'walking, cycling and other forms of physical activity'*, safely and accessibly (World Health Organisation, 2004, p. 8), pointing out that physical activity can offer a wide range of physical and mental health improvements.

National Context

The UK has heeded this global call after finding itself at the higher end of global inactivity league tables (Critchley, 2011; WCRF International, 2010). With nearly three quarters of England's adult population overweight or obese and following

sedentary lifestyles, *'Britain is now the most obese nation in Europe'* (Secretary of State for Health, 2010, p. 2). The 'Health Survey for England of Physical Activity' (Eastwood, 2013a, 2013b) showed only 15.5 million adults (36%) followed physical activity guidelines for moderate activity - 150 minutes, in bouts of 10 minutes or longer, or 75 minutes of vigorous activity, or a combination of the two per week (Eastwood, 2013a).

Since 2011, Eastwood (2013b) states the body mass index (BMI) in both males and females has increased, as have all weight categories and average waist circumferences. These act as effective indicators of the trend in health status and are reflected in the increased incidence of primary diagnosis in NHS hospitals of obesity, from 1019 cases in 2001/2 to 11,736 cases in 2012 (Eastwood, 2013b). Sedentary lifestyle and weight gain are also now established to be closely associated to increased occurrences of cardiovascular disease, stroke, colon and breast cancers, psychological disorders and depression, dementia, diabetes and liver disease. All together, sedentary lifestyle is estimated to cost £8.2 billion per annum (Eastwood, 2013a; National Centre for Social Research, 2010; Royal College of Physicians, 2012). With an ageing population, the instances of such chronic diseases will further increase (Department of Health, 2010b) unless health behaviour change is addressed in adults with sedentary lifestyles. In 2013 Public Health England instigated a long reaching, multi-disciplinary consultation for physical activity implementation. Its remit was not to consider those who were at present even slightly active and encourage them to do more, but was aimed solely at developing ideas to get individuals who were doing no exercise to do something, however small. Its intentions were laid out in the 2014 report 'Everybody Active, Every Day' (Justin Varney, Mike Brannan, and Gaynor Aaltonen, 2014).

The last 10 years have seen a great sea change in political perspective on how to tackle lifestyle and health behaviour change in England with ramifications for practitioners. The impetus for a call to action can be traced back to 2004 (Royal College of Physicians, 2004, p. ix) when a working party report recommended that in light of the increasing problem,

'A cross - governmental task force should be established at Cabinet level to develop national strategies for tackling the threat from overweight and obesity and to oversee the implementation of these strategies...the suggested strategy is 'the three E's' Environment. Empowerment, Encouragement'.

This was reinforced by the National Institute for Health and Clinical Excellence (2006) and the Chief Medical Officer (2004, p. 1), *'The evidence clearly demonstrates that an inactive lifestyle has a substantial, negative impact on both individual and public health'*. The Labour administration of the time, assailed by the medical profession with strongly researched evidence, was also concerned with an increasing NHS bill for sedentary lifestyle morbidities. It took the unprecedented step of placing sedentary lifestyle and physical inactivity at the forefront of government policy initiatives and set aside a substantial budget to research and implement findings. The resultant Foresight Report (Department of Health, 2008) was a substantive comprehensive review and became the framework for further policy.

The main public outcomes included the government playing a more dynamic and partisan role: developing the Olympic legacy action plan (DCMS, 2010) in readiness for the immediate post Olympic period (although it is now unclear how the post 'Olympic effect' impacted on middle aged people); commissioning further research that came from the original Foresight Report and subsequent White Paper on Health (2009). Out of this came 'Change4life', the largest single

UK health campaign to-date, which was promoted through press, media and NHS primary care pathways. The campaign was aimed at families and by the end of year one was not an initial success. Of the 413,466 families who signed up, only 44,833 sustained interest for more than 6 months (Department of Health, 2010a). However, the strategy was adhered to and further sub brands such as bike4life and walk4life were bolted on. For the remainder of the Government's tenure further schemes were initiated (Department of Health, 2010a), including free swimming for over 65's, safe cycling town planning and physical activity messaging wherever possible, so much so, that a facet of the Opposition's derogatory swipes was to accuse the incumbent of running a 'nanny state' in the press, media and when they became the Government, stating that,

'it is simply not possible to promote healthier lifestyles through Whitehall diktat and nannying about the way people should live. Recent years have proved that one-size-fits-all solutions are no good when public health challenges vary from one neighbourhood to the next' (Secretary of State for Health, 2010, p. 2).

The Coalition Government announced it was, *'radically shifting power to local communities'* via the Localism Act 2011 and as part of a new streamlined public health service, 'Public Health England' (Secretary of State for Health, 2010, p. 7) began a sequence of commissioning health programmes. Whilst this infrastructure was being developed, it did little in this area with the public for the first 18 months in incumbency apart from reappraise the previous Labour government's initiatives. Campaigns such as free swimming had no sooner started than they were halted. The relentless spending on research and implementation of health promotion campaigns was viewed as profligate in light of the new harsh economic climate, so fitness, like many other areas of public concern became fields for negotiation with private sector providers.

'It is time to free up local government and local communities to decide how best to improve the health and wellbeing of their citizens, deciding what actions to take locally with the NHS and other key partners' (Department of Health Public Health Development Unit, 2010, p. 8)

An example of this in action at ground level is that GP's in two-thirds of health care trusts regularly sent obese patients on a 3-month course to 'Weightwatchers' rather than sending them to diet and exercise specialists via GP Referral schemes (a more expensive option). The new public/private partnership with the dieting company costs the NHS £45 per person and was reported as successful even though there was concern that most of the research done on the course's efficacy was funded by Weightwatchers themselves (Borland, 2013). Whether this form of privatisation of services with its requirement for a profit element is the best way forward for treatment is yet to be studied. Other new 'partnership' initiatives include the ongoing 'Change4life' (it is not uncommon to see big retailers selling the branded products), 'Walking the way to health' to encourage reduced car travel, 'Bike4life' an employee initiative, 'Fit for future', UKActive working with local authorities, 'Walk England' (Royal College of Physicians, 2012) and 'Get going everyday' (Eastwood, 2013b). This local decision making has meant balancing increasing need for interventions against cost (Bernstein, Cosford, and Williams, 2010).

Local Practice Context

This constantly changing environment means there are ever changing requirements on the health and fitness practitioner, who must react and respond to fit his/her practice into the new landscape. These changes can range from qualification requirements, employer requirements, approaches to practice through new scientific understanding or absorbing new fashionable approaches

to implementation (Smith Maguire, 2008). Other factors that influence their practice include: 'obesogenic' environments, economic and social lifestyle pressures of clients (Bernstein et al., 2010; Roberts, Cavill, Hancock, and Rutter, 2013), individual lifecourse determinants of clients and constant governmental health messaging encouraging people to be less sedentary and do more exercise, sometimes with a sense of desperation,

'Public staircases are soon to be labeled as exercise apparatus when a government-backed scheme comes into force to try and make office workers and commuters across the UK fitter' (Anstey, 2013, p. 1),

The physiological principles of exercise prescription established in health and fitness protocols and methods of delivery are developed and employed to elicit health gains in clients. Practitioners work on a one to one basis with a client. Locations include: Private and state run gyms, NHS clinics, small private practices, outdoor training and clients' houses. In gym chains they are also often required to take group classes. Pilates trainers are included in this practitioner group and are recognized by REPS, however, yoga trainers are not, as their training and qualifications bodies are not in parity with the NOS (National Occupation Standards). This group is unregulated.

Styles may change but the principles of standard one-to-one exercise prescription programming are researched and documented as successful (Anshel, Minsoo, and Brinthaup, 2010; Hutchesson, Collins, Morgan, and Callister, 2013; McClaran, 2003). This also applies to programmes aimed at special populations such as cardiovascular disease (Gidlow, Cochrane, Davey, Beloe, Chambers, Kumar, Mawby, and Iqbal, 2013) and weightloss/obesity (Jennings, Barnes, Okereke, and Welch, 2013).

Wherever they practice, personal trainers have client bases mostly made up of special populations; a misnomer as the term suggests that such clients are minority groups. However, if it is considered that 58% of women and 65% of men are overweight or obese (Niblett, 2015) – a special population in itself – of the third of the population left that are normal weight, when other special populations are subtracted such as the elderly, pregnant, arthritic, asthmatic etc., healthy adults represent the minority. It could surely be said therefore, that it is healthy adults that should be considered a special population. Fitness practitioners are therefore exposed daily to practical issues regarding best practice with unfit, unhealthy and frequently medically challenged clients.

The range of knowledge and application and qualification levels varies widely across the industry (Skills Active, 2013). Malek, Nalbone, Berger, and Coburn (2002) demonstrated that, for health professionals, a degree or equivalent was the strongest predictor of training knowledge, contrary to the belief that experience would suffice. However, Gavin (1996), Anderson, Elliott, and Nate (2010) and South, Woodward, and Lowcock (2007) showed that trainers of all levels exceeded their scope of practice and understanding when working with clients and that the trainers themselves were aware and concerned about this.

Personal trainers, tend to be individuals who loved sport and/or were good at it and wanted to continue their passion into their career. Whilst not mandatory, with government and industry pressure to consolidate and regulate the workforce, in order to practice, they must have a minimum Level 3 qualification, be insured, hold a first aid certificate and preferably be registered with the REPS (Register of Exercise Professionals), the Skills Council register. When contacted by email (30/1/14), REPS reported 68% of membership held a Level 3 and 5% held Level 4 qualifications. Although some practitioners have a degree in sport science and a

few hold a masters degree in a sport science specialisation such as strength and conditioning or biomechanics, the majority hold the minimum qualification for the role. This wide range in qualifications potentially might affect client experience and retention.

Clients' perspectives of their trainers' efficacy and motives for hiring them can be unclear. Physique and appearance (Hutson, 2013) can be confused with qualification levels (Szumilewicz, 2011). A personal trainer's appearance is as important to an employer as a client; employers valued traits such as appearance and sales ability (Chiu, Lee, and Lin, 2010) due to their capacity to generate income for the firm. Personality traits and social skills are pre-requisites for success but may not be as immediately obvious as appearance. Eckmann (2004) found a small amount of evidence that award winning personal trainers demonstrated higher emotional intelligence. Softer people skills rank high with both clients (Change and Kim, 2003; South et al., 2007) and gym managers and employers (Melton, Dail, Katula, and Mustian, 2010). However, Collishaw, Dyer, and Boies (2008), when considering the emphasis placed on 'people skills' noted that clients are able to detect when trainers are not being genuine and engaging. This can lead to client withdrawal. The relationships between trainer and clients can be as effective in marginalised communities using local health trainers (White, Woodward, and South, 2013) as personal trainers in private gyms.

Summary

The benefits of understanding factors involved with exercise uptake in middle age are significant at both a global and national level. With the present rise in obesity levels and associated diseases there is a social imperative to persuade individuals to take up exercise as part of a healthy lifestyle choice (Mulgan, 2010; Public Health England, 2016; Justin Varney, Mike Brannan, and Gaynor Aaltonen, 2014; World Health Organisation, 2016). Personal training practitioners find themselves at the forefront of this endeavour and the results from this research are intended to help practitioners to identify which training approach to take for optimum effect. This in turn will aid exercise adherence during the early stages of clients' health behaviour change when they are most susceptible to quit .

• Chapter 2 •

Literature review

Introduction

Having identified corporeal dissociation in the researcher's practice, it was then necessary to explore if it, or aspects of it, had been observed and recorded by others in the literature. A discussion of the theoretical perspective used in this research of lifecourse theory and learned helplessness was followed by a search to locate corporeal dissociation, which had originally been thought to be located in Sport Science, but was found to be multi-disciplinary. The partially historical nature of the phenomenon meant a number of sources were examined, including contemporaneous documents, government archives and pictorial evidence as well as academic books and papers. It used appropriate literature pragmatically to inform the research undertaken (Cresswell, 1994). Databases and keywords are shown in Table 3. As well as lifecourse theory, the search moved through the educational environment 1950's to 1970s, maths anxiety, and teaching practice, finishing with empirical studies using lifecourse and learned helplessness.

Databases
• International Bibliography of Social Science (IBSS) • Medline Cinahl • PsychINFO • Science Citation Index (Web of Knowledge) • SPORTDiscus • PubMed Central • Cochrane Library • Sage eJournals • Education Research Complete
Keywords
• Exercise • lifecourse • adolescence • physical education • policy • anxiety • dissociation • failure • health behaviour change • youth • school • health attitudes • lazy • competitive • parents • sport • sedentary behaviour • curriculum • other terms that appeared as the search progressed

Table 3. Databases and keywords used in literature review

Lifecourse theory and learned helplessness

At the centre of the research lay stories about life experiences of physical activity at different points in the lifecourse, therefore, a suitable approach to studying this was to take a lifecourse theoretical perspective. Lifecourse is still a relatively new method for studying people. It first appeared in the 1960's, proposed that events in earlier phases of an individual's life could inform and affect later ones. This might seem an obvious idea, but the existing tradition of research had split 'life' into discrete stages in which established researchers tended to work exclusively within a distinct period and become specialised in that area. This reductionist view tended to oversimplify and decontextualise human experience (Frost and McClean, 2014). Lifecourse, on the other hand does not see life as a set of discrete states but is inclusive of all life phases, wide ranging and multi-disciplinary because it reflects the complexity of life (Kuh, Cooper, Hardy, Richards, and Ben-Shlomo, 2014), with quantitative methodologies used as a preference for large scale studies. This model is now widely accepted as a legitimate method, for example, it has been taken up in all areas of national health policy since it was lauded in the 2000's by the Labour government as a tool in their work on obesity around the 'Foresight Report' (Duggan, Lawrence, and Butland, 2007) by established governmental researchers such as Mulgan (2010).

The many separate strands of present usage are being evaluated and systemised with a framework emerging from the interplay of the theoretic work of people such as Alwin (2012), Dannefer (2012) and Hendricks (2012) and its application by others such as Heikkinen (2011), Kuh et al. (2014) and Leopold and Engelhardt (2013). It has developed out of work from two traditions; the first being North American, in which emphasis was given to early life experiences influencing later life outcomes, and a European perspective that laid more importance on the constructed social reality of social structures, institutions and

governmental influences. This perspective to life course is less interested in the personalised worlds of individuals than on what impact institutions and systems have on the individual and groups. Therefore, lives themselves are socially constructed realities and are formed and modified by those organisations. This creates a social order of normative values and behaviours in which individuals move and develop (Dannefer, 2012). Alwin's (2012) approach allows for examination of the lifecourse within this European tradition, and in conjunction with Seligman's (1975) learned helplessness, has been used as the theoretical perspective in this PhD. research.

Alwin's (2012) 5 key principles of lifecourse are: human agency (people make their own lives and choices), linked lives (interdependence), time and place (history and geography shaping experiences), lifespan development (predictive element of past actions on future) and timing (an individual's perspective is particular to the life stage they are in and involves reflecting on the past). These agents each have components: 'events', which signal 'transitions' (changing from one state to another). Transitions happen abruptly and are stages on 'trajectories' (charting a course) and turning points (transitions of significant change that mark a before and after) (Alwin, 2012; Li, Cardinal, and Settersten Jr, 2009). Seen chronologically, these elements create a life pathway. Life is dynamic and although there is human agency, timing of events may be out of an individual's control and have a profound influence on that individual's trajectories and pathway.

Several terms have been used and interchanged with lifecourse such as lifecycle, life history, life span, but Alwin (2012) catalogues each term and defines the parameters into either; biological, psychological or social. There are discipline practices such as psycho-social theory from psychology that cover two of these areas. However, lifecourse as a research tool is becoming an over riding

framework that might cover all facets and is, '*most effectively used in conjunction with other social and behavioural paradigms*' (Li et al., 2009, p. 345).

Human life span development is multi-layered within a social and cultural context (Alwin, 2012) in which people make choices through time and outcomes depend on interactions with earlier interactions; life events are interrelated. These choices are moderated by social institutions, policies and social rules (Dannefer, 2012). As such, the historical era and geography of living will impact social pathways in key areas such as morality, status and job roles as well as structures such as education (Hendricks, 2012).

Seligman's work is thought to be a good fit within Alwin's (2012) lifecourse perspective used in this research, as it involves four of his five key principles: linked lives, time and place, lifespan development and timing. During the 1950's-1970s, a number of models were developed to find solutions to high levels of failure in schools. A precursor to Seligman was Holt (1964), a school teacher and diarist whose observations and reflections led him to conclude that, unlike in babies, the learning experience in children was moderated by constant fear of failing, punishment, being called stupid and losing social status. This constant fear becomes a habit and failure becomes a preferable state; so that the stress levels created by attempting to succeed are removed and so is the teacher's expectation for them to try. '*Incompetence has one other advantage. Not only does it reduce what others expect and demand of you. It reduces what you expect or even hope for yourself*' (Holt, 1964, p. 59).

A number of later models that considered approaches to an individual's success or failure in situations that are stressful include Rosenbaum's (1989) Learned resourcefulness in which an individual learns a repertoire of responses that can be called on to deal with stress, or Seligman's (1998) Learned Optimism that

explains pessimists are prone to failure more than optimists and the attributes to optimism can be developed in the individual. However, it is his earlier work that this research centres on. Learned negative behaviour was developed by Seligman (1975) in his seminal book 'Helplessness on depression, development and death'. In a traumatic situation where failure is inevitable, an individual becomes more reluctant to perform the task. If the pressure to undertake the task persists, fear helps the individual to cope. If the individual attributes uncontrollability and perceives they are incapable of changing their situation, the fear will subside, as it is wasted energy, but resigned withdrawal will take its place and that with further continuance will in turn be replaced by depression or even clinical depression (Antaki and Brewin, 1982) and that for many, school is a pivotal point in such developments,

'Controllability and helplessness play a major role in the child's encounters with our education system. School is a trying experience for almost every child along with reading, writing and arithmetic. I believe that the schoolchild is learning just how helpless or effective he is'. (Seligman, 1975, p. 153)

Reflective of Pavlov's early experiments whilst developing classical conditioning (Pavlov, 1960), Maier and Seligman (1976) also worked with dogs to establish that punishment in a situation where escape is impossible led to punishment being accepted in further sessions even though there was an escape. This was due to the victim having no control of the original punishment. They showed this effect was transient after only one session, whereas it was permanent after four sessions. The longer the abuse lasted, the more permanent were its effects. This supported earlier work where inescapable punishment had an opposite effect to positive reinforcement and longer or more intense punishments elicited a greater response suppression (Azrin and Holz, 1965). The learned helplessness hypothesis also argued that a deficit was created in performance (reduced

incentive motivation proposition) and that learning would be undermined (associative interference proposition) and might affect later behaviours, which Iverson (2012) terms a loss of physical vocabulary.

By 1978 Seligman reformulated the model (Abramson, Seligman, and Teasdale, 1978) in which he argued that there were three dimensions necessary to explain human helplessness and depression: internal-external, stable-unstable and global-specific (the latter is where a quality can be related to all aspects of the activity or only specific elements, for example, some might see themselves as artistic whereas others see themselves as good at sculpture). The following year Seligman, Abramson, Semmel, and Baeyer (1979) clarified that low esteem was the result of a lack of control of internal factors but not of external.

Lifecourse theory was a good fit; people look back, at the present and into the future as opposed to previous research frameworks where life eras are treated as inclusive pockets of researchable time with no reference to the past or future. Time has a subjective sense in which meaning can be attached to change (Hendricks, 2012). Time is also prescribed by institutional life phases such as school, work, marriage, child rearing and retirement.

It is the consideration that life is a complex continuum of interrelated constructs that allowed for a connection to be made between the early experiences and later life health behaviour outcomes of clients and so the next stage was to build an evidenced picture of education practice at that time.

The educational environment 1950s-1970s



Figure 1. (L) Burton Grammar School gym 1950's and (R) PE gym class Linton Village College demonstrate the regimented process of PE lessons. (www.burtongrammar.co.uk, www.hildersham.ccan.co.uk)

Investigating middle-aged people and exercise uptake in 2015 meant that the relevant period of school was covered 1950-1975. Contemporaneous documents were preferred with post period commentaries used when necessary as the 1980's saw a shift in pedagogic thinking. Therefore literature reflected the attitudes and educational perspective of a later generation looking back on its immediate predecessors.

The period in question (1950s - 1970s) was one of flux: of shifting social and educational paradigms. It opened with the selective grammar and secondary modern model of the Labour party, introduced in 1944. This was a more socialist version of its pre-war, class divided, Public and Elementary School predecessors (Aldrich, 2002). Although now controlled by the emerging middle classes, the values of the ruling elite still prevailed over the education system and grammar school teaching was still infused with upper class moralities,

'continuative education through sport in a chivalrous code of sportsmanship ... involving honest rivalry and graceful acceptance of results... may provide a respect for the rules and a sense of fair play will prevail' (Arnold, 1968, p. 137).

The over-riding educational model during this period was the top-down 'professionalist' approach which translated into a working practice called the 'technological perspective' (Armstrong and Sparkes, 1991). This was exemplified by large scale, centrally funded national curriculum projects that were developed by small research teams in Higher Education (HE) or Government agencies and which were disseminated to schools, where it was assumed they would be implemented according to procedural guidelines. Thus knowledge creators and practitioners were separated and stratified with knowledge disseminated downwards in a one-way process (Armstrong and Sparkes, 1991). Even Anthony Crosland, Labour Secretary of State for Education and Science, the education reformer, who famously said, *'I'm going to destroy every f...ing grammar school'* (Crosland, 1982, p. 148), in his cry for comprehensive education, saw clear divisions of labour between professions, from professional policy-making politicians to administrators who administered information, down to professional researchers who supplied prescribed lessons to professional teachers who passed on dictated dogma to pupils. (Education Group Centre for Contemporary Cultural Studies, 1981). It was Crosland's cultural entrenchment that was cited as the reason for the 10-year delay from 1965, when the Comprehensive Education Bill was passed to its implementation in 1975 (Jones, 2003).

In secondary modern schools, where intake was made up of pupils who had failed the 11 plus examination and who were predominantly from the working class, a more authoritarian approach seemed to have prevailed, because *'... working people are the bearers of educationally disadvantageous behaviour'* (Halsey, 1968, p. 575). Class and sexual prejudice were part of the fabric. Mixed sex PE teaching brought out teachers' own gender prejudices (Scraton, 1986) so segregation by activity was not uncommon, i.e. boys played football whilst girls played netball. When the children themselves were interviewed for the Central Advisory Council for Education (1963, p. 15), a 15-year-old school leaver said,

'They couldn't control us because they treated us like children and even kept telling us we were only children'. The Central Advisory Council concluded, children, *'don't see the point of what they are being asked to do and are conscious of making little progress'* (1963 p14). After noting such a decline in interest and ability in both girls and boys by the age of 14, it recommended an urgent need for research into teaching techniques for overcoming the learning difficulties that had been created. This was reiterated by The Schools Council PE Committee (1971, p. 30) who warned that, if children of 13 and 14 wanted to contract out of physical education, there must be something wrong with their physical education,

'If you tend to write children off they will appear to themselves to be written off. Physical ineptitude is surely more in the eye of the teacher than in the mind of the child'. They all have immense possibilities and need reassurance and the confidence, even self satisfaction, which physical education can give them if it is imaginatively taught'.

A clear problem in teaching methods had been recognised.

This governmental 'professionalist' approach had weaknesses: that innovation was the sole prerogative of the course developer so the teacher was passive and that the gold standard was a 'teacher proof' curriculum package; that strategies were large scale with no concern about specific human problems; that organisational variables were overlooked and that what worked well in one school would automatically work well in another (Armstrong and Sparkes, 1991). The effect on teachers' perspectives was profound. They were disenfranchised: seen as dispensers of prescribed practice. Gurney (1989, p. 311) said *'unfortunately teachers seem to have very little say in relation to major educational change'*. This also meant that the secondary school curriculum was slow to change (Whitehead and Hendry, 1976).

It must be remembered that at this time PE was not an examined subject and had poor academic grounding and no academic content (Arnold, 1968) and was just as likely to be taught by the physics teacher or a dedicated PT instructor who had been trained in the wartime army. Specially trained PE teachers were rare (Arnold, 1968). Arnold notes that rather than embracing change, those teaching PE hid behind the limitations of 'how' rather than 'why'. He notes that pupils commonly asked '*Why do we have to waste time with PE?*' or '*why are 'we' forced to do a particular activity rather than another?*' To answer these, the teacher would have had to have a '*thought out position of educational philosophy*' - a 'why' (Arnold, 1968, p. 8), which was impossible within the prevailing 'professionalist' climate. Therefore, classes were prescriptive and pragmatic. i.e. '*Gymnastics and dance should be the basis of indoor work*' (Schools Council PE Committee, 1971, p. 34). It is interesting to note that the Schools Council PE Committee (1971, p. 33) recommendations were as prescriptive and top-down as the system it attacked. i.e. '*There should be no system of options during the middle years.*'

Eras do not have clean breaks between them but have periods of overlap of seemingly incongruous leadership practices (Rickards and Clark, 2006). The fledgling comprehensive system (that would eventually dominate the landscape in the mid 1970s) was overseen by the same professional elite as the existing two-tiered system and initially did not deliver its stated aims of equal opportunities for all. Concerns showed it was the children of the middle class whose chances of getting to university from within comprehensive schools, was greatest due to a soft selection process based on academic ability, class and culture (Halsey, 1968). It was not until the 1980's, with the change in pedagogic philosophy that many of these concerns were recognised, acknowledged and actively changed (Jones, 2003).

In recent years many physical educationalists have been at great pains to explain that they are concerned primarily with education 'through' the

physical rather than 'of ' the physical. The new concept introduced by the change in preposition has made the subject respectable in most schools and is now thought about in more comprehensive terms
(Arnold, 1968, p. 8).

As an aside, sadly, there appeared to be little improvement years later, *'today the situation is no better with some trainee teachers experiencing fewer than 10 hours of Physical Education in their initial teacher training programmes'*, (Chedzoy and Burden, 2009, p. 186).

Maths Anxiety

As the educational institution had profound systemic failures with resultant under-achievement in PE, would it be possible that there may have been other subjects that created a similar response? English was found to have a similar documented effect in some pupils but it was mathematics that stood out (Chinn, 2007). Unlike PE, negative responses to mathematics have been well researched and the phenomenon named 'maths phobia/aversion' or 'maths anxiety' had emerged. In fact so established is it, that a standard test for measuring maths anxiety in school children (MARS-A) was established by 1982 (Suinn and Edwards, 1982), and is still used.

It seems that, like PE, mathematics teaching-methods were a cause for concern within the educational establishment. *'The state of mathematics teaching is so bad that all research efforts should be directed to classroom practice'* (Hart, 1983, p. 119). Hart also noted that teachers' attitudes to their own subject were playing a relevant role; *'mathematics teachers are accustomed to seeing others fail in*

mathematics, and they often expect the children they teach to fail'. It is possible they were unwittingly passing on their own personal anxiety for mathematics to pupils (Trujillo and Hadfield, 2009). Such anxieties hamper Vygotsky's (1978) zone of proximal development (what a learner can do with help) and affect learning through ineffective teaching. Teachers may have inadvertently ostracised pupils who were then unable to access the help they needed. They also could not know what help they needed so could not ask for it. This was also occurring within the predominant teaching style of the time, the rigidly prescriptive 'chalk', 'talk' and 'copy' (Stodolsky, 1985); a process that did not lend itself to teacher – pupil interaction.

Maths anxiety in pupils could be attributed to three sets of factors: Firstly environmental factors, which included negative experiences in the classroom, parental pressure and insensitive teachers (Trujillo and Hadfield, 2009). *'The learner knows they will have to come back tomorrow and face humiliation in the classroom. The learner has a sense of pessimism and permanence'* (Chinn, 2007, p. 107). Secondly, intellectual factors such as self doubt/lack of confidence and mismatched learning styles, or when challenging experiences can have a subsequent, negative effect on motivation and performance (Struthers and Perry, 1996) and lastly, personality factors, where learners can blame their personality for mathematics inability (Hendel, 1980; Trujillo and Hadfield, 2009). Taking a physiological perspective, intellectual deficits in children may be possible reasons for low attainment in maths, (Haylock, 1991) especially having poor sequencing skills, low concentration, poor capacity for abstracted thought and low working memory (Ashcraft and Kirk, 2001). Cortisol is a stress hormone and can have significant negative effects in pressured environments. Cortisol was linked to working memory and maths anxiety (Mattarella-Micke, Mateo, Kozak, Foster, and Beilock, 2011). This might, however, create a negative loop where a

stressful environment encourages high cortisol levels, which in turn affects working memory and performance which creates stress.

The result on pupils that failed in mathematics was profound and far-reaching, with young adults picking their higher/further education course, college and even their careers on the necessity for mathematical proficiency or lack thereof (Donady and Tobias, 1977). Anxiety was even recorded in nurses when it came to them having to do mathematical dosage equations (Walsh, 2008). Dweck (2006) describes actions such as these as the result of having a 'Fixed-mindset' where failures are seen as a negative statement in their innate abilities. It is Chinn's (2007, p. 106) report that is on one hand disturbing and on the other so familiar,

'I have known adults who have been driven close to depression by an unavoidable maths task. Even the memories of maths lessons can generate anxiety... Its not what he was saying that hurts me, but it is his harsh voice, his hostile body language and angry expressions, his cold staring eyes, his angry stamping on the floor, his way of saying my name, his tight angry lips, the hard finger poking my back while he yells out loud, blaming me for not being able to do mathematics'.

Chinn (2007) rationalises Seligman's attributes from his 'Learned Helplessness' model (Abramson et al., 1978; Maier and Seligman, 1976) and applied them to how a maths pupil might think,

'Pervasive (I can't do this sum, I can't do any maths)

Permanent (I couldn't learn 12x tables last night, I'll never learn them)

Personal (I'm just thick)'.

(Chinn, 2007, p. 107)

The situations and environmental factors that might establish corporeal dissociation were similar to those of maths anxiety, as were the effects that such circumstances might provoke. Both subject aversions manifested a 'fear' that might reappear under specific stimuli in the future. This learned response might be as primordial as a Pavlovian conditioned reflex (Gray, 1979; Pavlov, 1960) repeating itself throughout the lifecourse, for as says, Skinner (1972, p. 18). *'Behaviour is shaped and maintained by its consequences'*. However, this does not go all the way to explain corporeal dissociation, rather is sufficiently persuasive that aversive behaviours established at such a formative point in life can make corporeal dissociation entrenched. There was clearly institutional systemic failure in at least two curriculum subjects and an examination of classroom practice revealed causes of failure.

Teaching practice and failure in the classroom

The ramifications of contemporaneous events are not always obvious. Connections can now be made that might have proved difficult at the time due to being in the middle of an all-encompassing socio-political ideology. As was explained earlier, teaching excellence during this period was uneven. Teachers were dispensers of prescribed lesson plans. Authoritarian teaching approaches were commonplace and staff morale and motivation was sporadic.

There was an implicit assumption that teachers held power over their classroom and what happened to those within it (Antaki and Brewin, 1982). This had an effect.

'When pupils are asked to take the part of the teacher in role-playing experiments they reinforce a pattern of reward and punishment that is

virtually identical to that proposed in teachers themselves. (Covington and Beery, 1976, p. 28)

Reactive teaching behaviours predominated (Robinson, 1990). *'Initial classifications made of pupils by their teacher on the basis of his or her impressions of their potential can establish what is virtually an educational caste system'* (Antaki and Brewin, 1982, p. 228). Low expectations of certain pupils led to their achievement level becoming pre-determined (Antaki and Brewin, 1982; Covington and Beery, 1976), which might include being unable to improve on their streaming, as streaming by ability was normal at this time. Pupils who were labeled in this way found it hard to escape the implications (Antaki and Brewin, 1982). For example, children who were streamed with low reading ability stayed as low achievers for the remainder of their school careers (Covington and Beery, 1976). Teachers treated pupils whom they ascribed as low achievers differently: positioned them further away, expected less work and effort from them, paid less attention to them, with less eye contact and fewer response opportunities (Robinson, 1990) and generally spent less time on them (Covington and Beery, 1976).

Another factor of the overriding teaching style of the time was an implicit competitive and evaluative environment, perhaps a residue of the 1930's public school ethos that still pervaded the administration of knowledge. Competition between pupils was an inherent element of PE but was recognised to be universal to the curriculum.

'such practices as grouping by ability, using comparative information to determine grades, publicly charting student progress, and calling attention to those students who are exhibiting specific exemplary performance...these competitive structures depict situations of "forced social comparison". (Robinson, 1990, p. 29)

Such competitive achievement structures created a higher chance of failure in those less able (Robinson, 1990) and evaluative procedures were aversive to those deemed as failure-orientated children. This made future success more unlikely (Robinson, 1990). This cycle became a self-fulfilling prophecy. 'If the teacher thinks I'm useless, I must be and will continue to be, however hard I try'. Weiner, described this scenario in his attribution theory (Weiner, 1984)

'A student tried hard but failed at a relatively easy task (e.g., a simple gymnastic forward roll)...(negative) communications to the student serve as low-ability cues...the student infers that he or she is low in ability and "hopeless." The low expectancy of future success accompanied by feelings of humiliation and expression of pity and help all contribute to the student's lack of persistence in the face of future failure and to performance decrements at similar achievement-related tasks'.

(Weiner, 1984, p. 34)

This was reported to be particular to older children as younger children did not seem to suffer these deficits (Barker and Graham, 1987). Younger children equated high effort with high ability and saw themselves as 'able' as long as they continued to try hard. This worldview may stay with children as they mature and be transmogrified into 'hard work means good grades or reports' and be linked to self-esteem. However, it takes little to shatter this – a judgmental authority figure plus a poor grade or comparison with peers with higher ability (Weisz and Cameron, 1985) and achievement is virtually impossible (Covington and Beery, 1976).

In such an environment learning for average and low ability pupils becomes a matter of survival.

'The child has learned that when English words go up on the blackboard,

nothing he does will be right. He falls farther behind, the helplessness deepens. Intelligence, no matter how high, cannot manifest itself if the child believes that his own actions will have no effect'.

(Seligman, 1975, p. 145)

Classroom practice was shown to be a major factor in learning outcomes of pupils. It affected their daily experience of curriculum subjects and future capabilities of those subjects.

Other models of poor performance

Seligman's learned helplessness is used together with lifecourse in this research as a theoretical perspective. Other models were considered but eschewed as their 'fit' may have been close but not as effective as learned helplessness: Neuro-scientific evidence offered a slightly different perspective. The understanding is biological rather than behavioural. Here, anxiety is, '*a state of the conceptual or central nervous system when an individual experiences uncertainty about the ability to control outcomes*' (Chorpita and Barlow, 1998, p. 4) called 'uncertain helplessness'. This can progress to 'certain helplessness' if the lack of control increases and end in 'hopelessness' if the sense of control is minimal. This produces a depressive state. Thus if a child has sufficient early experiences of uncontrollable events, they may perceive all following similar events in the same vein which can colour their subsequent experience. Enough time must elapse for this to take place and so it will be seen in older children rather than younger (Chorpita and Barlow, 1998; Weisz and Cameron, 1985). Some children were found to be high in levels of the stress hormone cortisol (Chorpita and Barlow, 1998; Gray, 1982), together with anxious emotion presenting as attention deficit, inhibited gross motor behaviour, increased

scanning of the environment and increased stimulus analysis. This link between the neural/brain activity and its seemingly 'other' outward expression as symptoms is reconciled by Jablensky (1999, p. 9), '*the phenomenal body is the arena of our daily conscious experience, of the 'inward expression of neurophysiological activity'*'. The part played by emotional regulation in this process is shown to be significant by Aldao, Nolen-Hoeksema, and Schweizer (2010), who found an association between pathologies such as eating disorders, depression and anxiety with emotional dysregulation created when there are problems controlling emotional arousal in response to experiences.

This intrinsic/extrinsic aspect should be assessed when considering the concept of the social body being a construct of the many pressures in society that influence it (Burkitt, 2012). For example, an inability to be proficient at mathematics will create tension in an environment where success in mathematics is held in high esteem by significant others or the personal sense of physicality will be affected if performance ability is shown to be low in a public arena such as PE . This sense of self is modulated by relationships with others and institutions that constantly modify the internal sense of self. '*We are elements of our culture, time and space and can never be abstracted from the social world'* (Burkitt, 2012, p. 16). This elastic view of the self is redefined daily in light of new information to update a self picture (Grogan, 2008). In order to make sense of this and to make the world more predictable, a system of constructs is created that are either accepted or challenged by experiences (Kelly, 1955).

The interplay between self and environment can be found in the 'egotism hypothesis' (Snyder, Smoller, Strenta, and Frankel, 1981). It claimed that people act in certain ways to gain the approval of others and disassociate themselves with actions that end in negative sanctions. If failure is inevitable, giving up or reducing effort is a good way to avoid a public demonstration of low ability. It was

considered by Robinson (1990) to be seen frequently in physical education.

Sport psychology models include Nicholls, Masters and Csikszentmihalyi, whose frameworks are used to respond positively to stress for performance improvement. Nicholls' (1984) achievement goal theory of motivation, showed experiences in early adolescence would dictate if an individual would be intrinsically (task) or extrinsically (ego) driven, with the former showing better success outcomes. This was later refined to show that there are positive and negative aspects to both drivers. Masters described 'dissociation' as the hypnotic mental state that marathon runners put themselves into (Masters, 1992), however, Masters himself revised his theory in 1998 in which he dropped the term 'dissociation'. 'Flow' (Csikszentmihalyi, 1990) also has superficial similarities of apparent detachment and is commonly described as 'being in the zone' by athletes and is a focused concentration of awareness of the moment of action and as such not a good descriptor for corporeal dissociation.

In the classroom, pupils differed substantially in the degree to which they developed negative emotional symptoms in response to stressful conditions (Allen, Greenlees, and Jones, 2014). However, responses to such fearful regimes had a commonality of failure and avoidance. According to Siddle and Bond (1988) avoidance behaviours occur in order to reduce fear. Interestingly, the response is often not total inaction as this might elicit more punishment and striving for success might bring about more failure, so doing a bare minimum is the safest path. This is in the knowledge that such behaviour will inevitably bring about a more long term failure and the best possible outcome would be mediocrity (Covington, 1984). This shifting of an intrinsic goal locus was named the 'level of aspiration' by Hoppe in 1942 and Himmelweit (1947). Hoppe showed it was dynamically reactive to external events - almost pragmatic in nature. For example, Maracek and Mettee (1972) and Storms and McCaul (1976) found that

a confirmation of poor self image in children is sought from their peers to elicit a social identity. Confirmation gives it validity. Failure can become a way of life. This can become so entrenched that children will actively sabotage or deny success when it occurs (Covington and Beery, 1976; Struthers and Perry, 1996). They can give up tasks quickly or show performance decrements after initial failure (Butkowsky and Willows, 1980; Diener and Dweck, 1978; Robinson, 1990) in order to keep a sense of stability, *'individuals have a tendency to maintain a consistent and stable self image even if it's a negative one'* (Jones, 1973, p. 9).

As early experiences of trauma appeared to be a catalyst and a strong indicator of later maladaptive behaviours, the idea was explored within judgmental psychological models where similar behavioural dysfunctions were created in extremis; In childhood, dissociation is normal, for example when role playing or day-dreaming (Somer, 2011) but in adults 'Dissociation' is a psychiatric illness, classified in DSM-IV (Diagnostic and statistical manual of mental disorders) and is defined as a state when an individual compartmentalises their mind with a presentation of multiple personalities (Somer, 2011). Whilst considering that corporeal dissociation might fit within the psychiatric arena, specialist advice was sought. A practicing psychiatrist and senior consultant, Dr. Adam Winstock, at the Maudsley Hospital London SE5, was asked to consider the proposition but felt it did not sit within the psychiatric condition known as dissociation, as described in the established diagnostic directory, the DSM IV.

Post-Traumatic Stress Syndrome has similar symptoms such as depression, nightmares and hallucinations, but these are a response to extreme trauma (Caruth, 1995). There is a less extreme form of dissociative disorder, 'depersonalization/de-realisation', in which childhood trauma alters perceptions later and the individual experiences recurrent or persistent detachment from mental processes or body in a dreamlike state (Kring, Johnson, Davison, and

Neale, 2013). There is a sense of similarity in each of these but not a clear fit. Corporeal dissociation did not have such aggressive symptoms. Although poor educational experiences might not be thought to be traumatic, there were similarities between the extremity of psychiatric dissociation and corporeal dissociation that might suggest a continuum exists, although that is outside the parameters of this research.

Lifecourse research on exercise and health

Lifecourse has been effectively used in both large-scale epidemiological health studies and smaller scale work in which the strength of studying cohorts is presented. Cohorts share experiences in time, they share a unique social history and they share life phases at the same time (Alwin, 2012).

There is evidence for an 'accumulation model' of lifecourse theory in that the social/biological events of life compound or accumulate to reach inevitable health outcomes which may start at any point, including in-utero (Heikkinen, 2011). A key example of this is the effect of socio-economic status (SES), with low SES in childhood and adolescence leading to a number of poor health outcomes in middle and old age (Astell-Burt, Mitchell, and Hartig, 2014; Hilbrecht, Wong, Toms, and Thompson, 2009; Kirk, 2005; Kroenke, 2008; Kuh et al., 2014; Leopold and Engelhardt, 2013; Marmot and Bell, 2012). Reasons included: lower SES in early life led to lower levels of education, more manual work, less income and fewer opportunities. Other long term effects that have come to light using this perspective include: access to green space at different times in the lifecourse has a beneficial effect on male mental health but less so on women (Astell-Burt et al., 2014); having parents who did not divorce leads to positive health outcomes (Hyppönen, Davey Smith, Shepherd, and Power, 2005; Larson and Halfon, 2013)

and church attendance has an indirect, positive effect on later well being (Koenig and Vaillant, 2009). There is also strong evidence that childhood adversity may lead to poor health behaviours, weight gain, poor functionality, mid-life psychopathology and negative later life health outcomes (Amuzu, Carson, Watt, Lawlor, and Ebrahim, 2009; Bann, Wills, Cooper, Hardy, Aihie Sayer, Adams, and Kuh, 2014; Bellis Ma Fau - Lowey, Lowey H Fau - Leckenby, Leckenby N Fau - Hughes, Hughes K Fau - Harrison, and Harrison, 2013; Clark, Caldwell, Power, and Stansfeld, 2010; Feinstein and Bynner, 2004; Vasunilashorn and Martinson, 2013). Ben-Shlomo and Kuh (2002) suggest that as well as the cumulative effect of events on an individual there might also be a critical period in which the course of events might determine future trajectories. They suggest that these critical periods might be opportune moments for intervention or analysis.

Middle age is also a key transition for many being a stage that covers the end of child rearing to retirement (Bainbridge, 2012). It is a point of many social pressures and responsibilities (Burkitt, 2012; Hilbrecht et al., 2009). It is the point when health outcomes may be acute through the accumulation model, such as the link between metabolic disorders at this age after years of sedentary TV viewing (Wennberg, Gustafsson, Howard, Wennberg, and Hammarström, 2014). Lifecourse analysis does not only consider the forward momentum of life, although this is where the majority of work is done, it can also be used to study life retrospectively. For example, Hamer, Kivimaki, and Steptoe (2012) found that objectively measured physical activity in later life is attributable to physical activity behaviours in middle age.

In regards to physical activity and lifecourse research, school has been suggested to be the biggest predictor of future participation amongst other factors such as SES, social mobility and geographical location (Hirvensalo and Lintunen, 2011; Kirk, 2005; Lunn, 2010; Mann, Hayes, Parker, and Pearce, 2007;

Mann, Hayes, Basterfield, Parker, and Pearce, 2013). A key transition to future participation occurs at aged 13-15 due to PE teaching approaches of the time (Kirk, 2005). It is a key point for personal perspectives of well being (Matthews, Kilgour, Christian, Mori, and Hill, 2014). It is at the end of this point that pupils 'drop out', especially females. However, gender differences become less acute in adulthood (Lunn, 2010) but are more related to work and roles and location (Mann et al., 2013). Educational level and quality of experience in future participation was significant (Mann et al., 2013) with little transfer of learning from school to adulthood found (Kirk, 2005). Hirvensalo's (2011) review tracked longitudinal physical activity studies and found from adolescence to adulthood a low tracking rate with Spearman's rank order correlations 0.15-0.44 in males and 0.09-0.34 in females. This improves a little when looking at all of adulthood (0.35-0.65). The low correlation suggests other factors influence physical activity in adulthood so adolescence itself can not wholly explain adult participation. However, a good approach to encourage participation in later life is to use popular culture as an entrée such as football (Parnell, Pringle, McKenna, Zwolinsky, Rutherford, Hargreaves, Trotter, Rigby, and Richardson, 2015). It must be noted that these studies were considering population experiences some 40 years after those being investigated in this research and, although they cannot offer parallel historical understanding, they do provide understanding of physical activity within a lifecourse perspective.

Summary

The key five facets of lifecourse theory; human agency, linked lives, time and place, lifespan development and timing, make it a suitable theoretical perspective in which to frame this study. Existing lifecourse research shows the 'drop off' of physical activity over the adolescent period, with school being the strongest predictor of future physical activity participation. These studies do not tell us why. Clients' memories of negative PE experiences were substantiated by contemporaneous literature. Classroom teaching was found to be a significant determinant in pupil failure across the curriculum. Reactive teaching behaviours predominated which included low expectation of pupil achievement levels. This in turn informed learning outcomes. Pupils who were labelled as low achievers were unable to break such stigmatisation throughout their school careers. Teachers were also found to foster competitive reward and punishment structures, which for many pupils became an issue of daily survival. This learning environment might be a catalyst for corporeal dissociation to be established and is most closely reflected in Seligman's (1975) 'learned helplessness' model. It was not clear as to why some pupils followed this path whereas others succeeded.

This evaluation of earlier research has highlighted elements that allow for clarification of the effects of these experiences to be further defined by this research.

• Chapter 3 •

Methodology

The practitioner dynamic in research

Businesses produce products and provide services. In personal training, the service of providing efficacious exercise programmes is the product and client retention is a measure of its efficacy. The impetus to enhance practice comes from a professional focus to improve the product allied to the pragmatic viewpoint of having to make a living, as a better service means more clients (Jarvis, 1999). Knowing the nature of practice from an intellectual and hands on standpoint can be both advantageous and disadvantageous to researching it. The 'knowing' that daily practice brings, described as, '*analysis frozen into habit*' (Simon, 1987, p. 63) proffers riches of understanding that outsider researchers cannot hope to achieve. The understanding is more rounded and complex than might be perceived by the onlooker. Like an iceberg, much valuable information regarding processes and relationships is held tacitly below the surface. Four such types of tacit knowledge that practitioners employ in professional judgement are propositional (using existing knowledge), process (practitioners' existing skills), personal (previous experience) and value based (making best fit decisions) (Eraut, 2003). These judgments are contextual and found when problem solving, decision making, learning and assessing situations and are acknowledged to be embedded in this research. The need to acknowledge such practitioner knowledge is reinforced by Dunne, Pryor, and Yates (2005, p. 20), '*in the late modern world we need to constantly assimilate new knowledge that alters our understanding of ourselves and the world and informs our social practice. We don't just accumulate knowledge like natural sciences*', and because such

knowledge has become 'hard-wired' into the makeup of the practitioner, it would be unreasonable to expect it to be separable during practitioner research. In his 'swampy lowlands' of practice, Schön (1991) calls this differentiation of the practitioner to the outsider researcher 'thinking in action'. He adds 'thinking on action', to describe the reflective aspects of practitioner work post action and completes the cycle with 'thinking for action' in which the outcome of the previous two steps will inform the next. It is this very 'insider' nature of utilising practitioner knowledge systematically, intrinsically and extrinsically that distinguishes the approach. Practitioner research has a constant dynamic built in of involvement and detachment in which the researcher must constantly check back against their reflexivity and its ramifications.

The pragmatic paradigm

'Truth is 'what works'. Use whatever philosophical or methodological approach that works best for a particular research problem at issue'
(Robson, 2016, p. 28).

Real world practice does not fit into clearly defined parameters and as Robson argues, the best approach to tackling it may not be pre-defined. *'We can let the problem at hand define which toolbox and tool is best suited for the job'* (Moses and Knutsen, 2007, p. 290). Indeed, Moses and Knutsen believe it is pointless to try and unify different paradigms but to see them as separate tools within the toolbox that can be used for the most appropriate fit to achieve a goal, an approach to a project that is in keeping with practitioners daily practice. Figure 2 illustrates the research design developed and used in this thesis and a discussion of its elements follows.

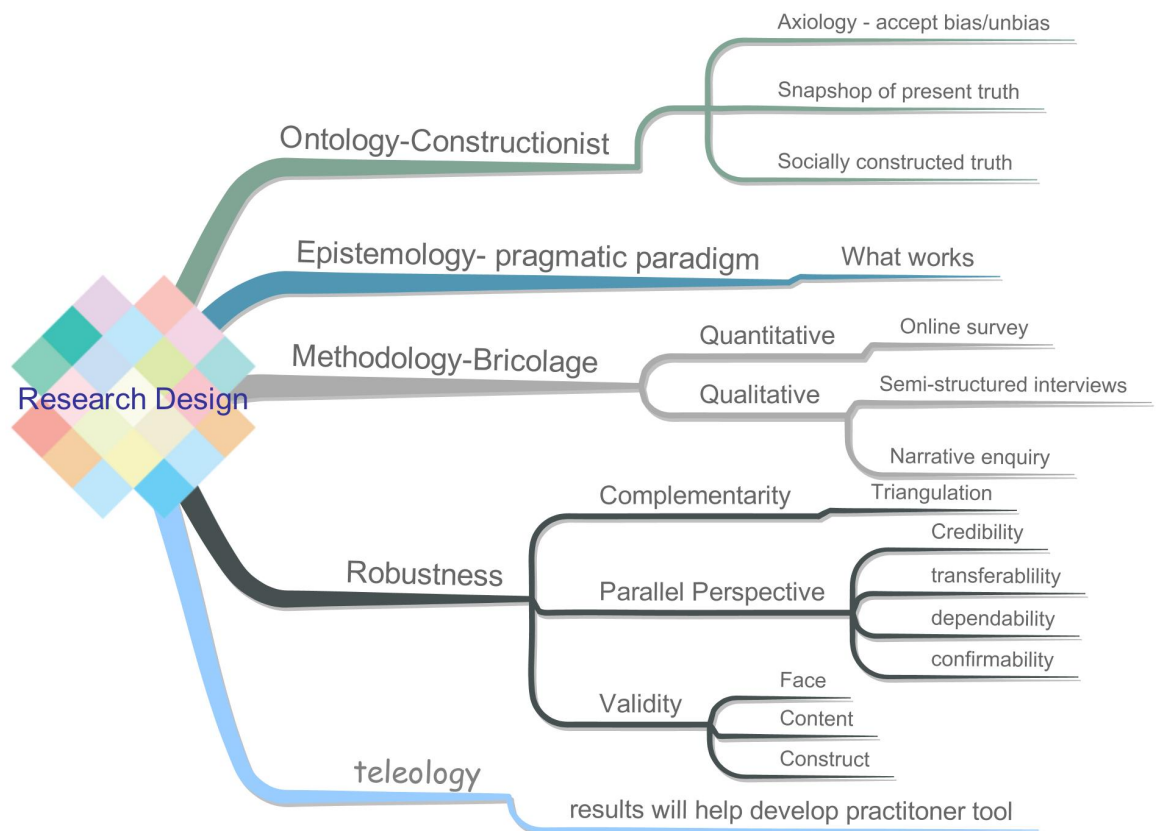


Figure 2. Schematic of thesis design matrix

Bryman (2008, p. 605) defines a paradigm as, ‘a cluster of beliefs and dictates which for scientists in a particular discipline influence what should be studied, how research should be done and how results should be interpreted’. Within this, inductive or qualitative (in which data are usually expressed in text although numbers can be used to stand for qualities as well) and deductive or quantitative approaches are well established (data can be expressed in numbers or quantities). However, this view has detractors. Biesta (2010) argues that the notion of a ‘paradigm’ is unclear and is used for an unspecified bag of world and epistemological stances, shared beliefs and models. He calls it a ‘container concept’, which ‘leads to situations where it must be accepted or rejected wholesale’ (Biesta, 2010, p. 98). This promotes a reticence to embrace multiple epistemologies, ontologies and methods that best suit the research aim. Scientists have been likely to become entrenched in one stance or the other. This

has led to two dominant research cultures (Burke Johnson and Onwuegbuzie, 2004). This separatist view is reinforced by the 'incompatibility thesis', that states qualitative and quantitative paradigms and methods cannot and should not be mixed as they have radically different objective and subjective notions of knowledge of the world (Howe, 1988).

The purely positivist approach where truth and reality are 'separate' and can be observed objectively (Bryman, 2008) is eschewed in this project on a number of grounds. It does not allow for the rich contextual information that practitioners can bring to their research and humans observing human behaviour can never be 'value free' as people (researchers) cannot quit responding to other people (the researched) (Biesta, 2010). However, a purely inductive approach is also inappropriate, as it would not address how widespread individual perspectives were, nor be able to show shared characteristics of a large population (Costley, Elliott, and Gibbs, 2011). Positivist and interpretivist perspectives may be opposing types of truths but the ever practical practitioner can take a third practical position. *'By embracing methodological pluralism we can best pursue one of the central objectives... the need to encourage problem driven (not methods driven) science'* (Moses and Knutsen, 2007, p. 290).

Health and fitness practitioners are by nature pragmatic. They respond on a daily basis to unpredictable and unforeseen elements as they present in practice. They are used to thinking creatively within a framework. Therefore, as the researcher came originally from practice, it is natural to employ a research paradigm that reflects this way of being: a pragmatic paradigm. Biesta defines pragmatism not as a philosophical position like others but again as a set of *'philosophical tools that can be used to address the problem'* (Biesta, 2010, p. 97).

Pragmatism has its roots in the 1920's in the work of the philosopher Dewey, who

outlined two cyclical questions, 'what are the sources of our beliefs' and 'what are the meanings of our actions'? The origins of beliefs come from our previous actions and the outcomes of these actions are found in beliefs' (Morgan, 2014). This brought beliefs and actions together and is a notion that reflects the actions of practitioner knowledge. Dewey called this process self-conscious decision making. He emphasised a process-based approach to inquiry' (Morgan, 2014), centred and grounded in praxis (Burke Johnson and Onwuegbuzie, 2004).

An established modern pragmatic worldview can be described as being made up of; an epistemology centring around practicality and 'what works'; an ontology accepting that there may be single or multiple realities; an axiology that may include bias and unbiased perspectives and a methodology that will combine both qualitative and quantitative approaches (Creswell and Plano Clark, 2011). However, Tashakkori and Teddlie (2003) take a more extreme global view that includes all philosophical elements being subsumed to the research question: abandoning concepts such as 'truth' and 'reality' and applying a practical research philosophy. Such freedoms may feel like researching with few boundaries and yet a pragmatic paradigm fits a pragmatic practitioner and reflects the personal training practice. '*Knowledge learned in practice is flexible and driven by the demands of practice*' (Jarvis, 1999, p. 145).

Next the ontological nature of the study must be clarified. Unlike in a predetermined and preformatted paradigm such as positivism, the freedoms outlined mean justification must be given to choices. The research questions are concerned with human interaction in a social environment with human interaction at its centre (Bowling, 2009) Therefore, the ontology in this study is constructionist. Using the prism of lifecourse theory (Alwin, 2012) the research investigates how and why people have responded in different ways to their environments and other people at differing stages of life. Knowledge is constructed through lives lived, an

interplay of internal and external influences and the decisions made along the way.

Another consideration of constructionism and a characteristic of pragmatism is that knowledge gained is of its time and may very well change after because of its creation in a fluid social existence (Burke Johnson and Onwuegbuzie, 2004). Social research knowledge has an ephemeral edge. This does not render it useless but gives worth for now (a snapshot of a present truth) and for future research that might look back and take note of how things were previously as a baseline or comparison or a root of their own research. This paradigm may not be the most commonly used but it has moved out of a purely theoretical academic environment and is gaining impetus as a valid and useful approach in applied health research where, '*a broader view of health has in turn contributed to an interest and an acceptance of patient narratives as an important method and type of data*' (Tritter, 2013, p. 423).

The usual methodology for a pragmatic paradigm is mixed methods (Creswell and Plano Clark, 2011; Tashakkori and Teddlie, 2003) where both qualitative and quantitative methods are used to collect and analyse data. However, mixed methods as an approach was not quite a perfect fit here because it is prescriptive, with one method, either qualitative or quantitative, usually taking precedence and importantly, the data analysis from both methods must be able to meld together into what detractors see as a difficult philosophical space (Cresswell, 2009). However, the methodology employed in this thesis acknowledges the complexity and contradiction of lives lived (Denzin and Lincoln, 2000) and challenges the structural rationality and requirement to 'mix' results of different paradigms.

Methodology – the ‘toolbox and its tools’

The methodology used is bricolage, using a multi-method approach rather than mixed method. Using the flexibility and plurality of qualitative and quantitative methods, it allows for competing theoretical perspectives and encourages a wide range of methods to produce credible resultant understanding (Rogers, 2012; Warne and McAndrew, 2009). Bricolage involves, ‘*moving away from textbook approaches and developing appropriate methods to fit and essentially grow out of the situation in hand*’ (Costley et al., 2011, p. 90). In this study the strengths of bricolage are that, rather than forcing the research question to fit the method, the methods were picked that were most appropriate to answer each research question. No one method takes precedence and analysis is not artificially forced to fit together, rather presented as different types of information that together give a multi-faceted picture.

Table 4. Five types of bricoleur and the characteristics of each approach. (Rogers, 2012, pp. 4-7)

TYPE OF BRICOLEUR	CHARACTERISTICS OF METHOD
The interpretive	<i>There is no one correct telling of an event. Each telling reflects a different perspective. It is an interactive process shaped by actors histories. There is interactivity between researcher and researched.</i>
The methodological	<i>Combines multiple research tools which allows fluid, eclectic and creative approaches. Can develop new methodological tools if needed. Context dictates method.</i>
The theoretical	<i>Work through and between multiple theoretical paradigms.</i>
The political	<i>Knowledge and power are connected and all findings have political implications. Develop counter-hegemonic inquiry that oppose social constructs. Knowledge gained helps disenfranchised</i>
The narrative	<i>Objective reality can never be captured. Texts are positioned from specific contextual perspectives. Narratives describe the construction of reality</i>

Table 4 shows Rogers' (2012) outline of the five main types of bricoleur researcher and the approaches that were originally developed by Denzin and Lincoln (2000). The research undertaken in this PhD. is predominantly methodological bricolage and also incorporates a narrative approach.

Three distinct studies were developed, each to answer a separate facet of the problem and following on sequentially to move analysis forward, 'because' of the information gleaned previously rather than 'out of it' (Denscombe, 2007). This research concerned itself with constructed realities of the body and the first study involved interviewing other practitioners to explore the possibility that they had experienced clients with corporeal dissociation and the practitioners reflexive responses to it, the second was a national survey of middle-aged people to investigate whether groups of traits and experiences could be found in adolescence that might suggest future activity or inactivity, and the third study involved doing narrative inquiry with a small sample taken from the second study to explore in detail the course of physical activity through the lifecourse from adolescence to middle age. Each of these studies was underpinned and informed by Alwin's (2012) five principles of human agency, linked lives, time and place, lifespan development and timing. Although each study demonstrated facets of all five principles, the first study was mainly informed by human agency and linked lives, the second focussed on lifespan development, time and place and timing, whilst the third utilised all five: human agency, timing, linked lives, time and place and lifespan development.

Each study was given equal weight, significance, with no method privileged over the others. This positively exploited the differences of each method (Tritter, 2013), the advantage being that the triangulation of studies became an outcome when the integration happened (called '*following a thread*'), when, '*an emergent finding*

in one data set was *'identified as having resonances in others'* (Gilbert, 2008, p. 138).

A criticism of bricolage is that it is too eclectic with little formal structure (Rogers, 2012). A counter-argument by bricoleurs is that mono-disciplinary approaches see the world as a regulated and ordered space and therefore they cannot look at the complexity of realities, contexts and systems that structure phenomena (Kincheloe, 2005). Bricolage does share weaknesses with mixed methods with researchers having to learn different methods, the approach has to be defended robustly against methodological purists and it may be more expensive and more time consuming to administer (Adamson, 2005).

Addressing validity in bricolage

Placing practitioner knowledge and practice with the research questions at the centre, involves introspection, individual knowledge and acknowledgement of bias as well as building in as much objectivity as the design affords. The freedoms given when opting for bricolage require a rigorous theoretical and auditable trail of decision making evidence that gives the work 'trustworthiness'.

According to Lincoln and Guba (1986), measures such as trustworthiness and authenticity stem from the paradigm used. In 'naturalistic enquiry', trustworthiness is socially constructed and incorporates the values of both the researcher and those being researched and incorporates multiple realities. Truth is not context or value free and therefore cannot use the standardised criteria of validity, reliability and generalisability; terms historically allied to experimental or positivist approaches (Bryman, 2008), where particular situations can be replicated ad infinitum with the same or similar elements. This also allows for generalisable

inferences to be applied when the experiment and its findings are accepted as universal. Internal validity establishes credence to the design and is concerned with the accuracy of the results and making of claims (Robson, 2016) and is relevant to naturalistic enquiry through auditability. In a positivist approach such elements inform the research design and are used to establish or reinforce the researched element as true, observable and measurable.

Sparkes and Smith (2014) discuss the reduced relevance of such terms in qualitative studies, nothing is being measured or experimented on; it is impossible to have the same interview twice; to reproduce data are problematic when it involves subjective human responses and perspectives. Sparkes and Smith (2014) also talk of the concept of a 'parallel perspective', originally developed by Lincoln and Guba (1986), which can inform the research design proactively as well as being a framework for retrospective judgement. It consists of, '*credibility, transferability, dependability and confirmability*, that together, '*can be used to judge the 'quality' of qualitative studies*' (Sparkes and Smith, 2014, p. 179) and aid trustworthiness. Here, internal validity as 'credibility' or a 'transactional notion of validity' is sought between the constructed realities of respondents and the realities of others such as evaluators or stakeholders.

The 'parallel perspective' facets of credibility, transferability, dependability and confirmability were used to create a reflexive framework to inform and monitor the research process across multiple actions; from checking dependability of data and systemisation of its collection process, to seeing how themes mapped across the studies and monitoring researcher bias and was as such, 'built in' rather than 'bolted on'.

Hammersley (1996) provides three perspectives from which to analyse methodological bricolage using multi-methods. Firstly, he discusses 'triangulation'

where quantitative and qualitative findings are used to corroborate each other. Next, he talks about 'facilitation' where one strategy aids the other and lastly, 'complementarity', in which the approaches 'dovetail' together, offering different perspectives. Similarly, a preferential argument put forward by Bryman (2008, p. 612) states 'completeness' is a criterion for multi method approaches. *'It implies that the gap left by one method can be filled by another'*. This resonates with Adamson (2005) who further argues that 'instrumental' pragmatic decision making is suited to situational concerns. Thus, in this study, decisions regarding theoretical and operational process have been jointly led by practice and theoretical perspectives. Hammersley's (1996) three perspectives were used to both integrate the three studies and to give corroboration and robustness (Figure 3).



Figure 3. Illustration of how Hammersley's (1996) 'facilitation' and complementarity of approaches was used. Each study became a piece of the pie with equal weighting and dovetailing together.

Within the structure of the parallel perspective discussed by Sparkes and Smith (2014) different forms of triangulation/complementarity were used in this research

(as illustrated in Table 5) to create an underlying framework of strategies informed by Adamson (2005) and Hammersley (1996).

Table 5. The different forms of triangulation/complementarity used

Triangulation/ complementarity	How it is used in this research	Informed by
Scale	Assimilating data on an epidemiological scale, from practitioners in a specified geographical area to the internal lived experiences of individuals.	Adamson (2005)
Geographical	Data are gathered from across the entire country	Adamson (2005)
Methodology	Qualitative and quantitative	Hammersley (1996)
Data sources	Participants	Adamson (2005)
Theoretical	Mixing of positivist and constructivist paradigms as evidenced in pragmatism	Hammersley (1996)
Method	Semi-structured interviews, quantitative online survey and narrative interviews.	Hammersley (1996)
Data	Data analysis covers statistical, analytic and narrative analysis.	Hammersley (1996)
Construct perspective	Internal life view to external responses to relationships/events.	Adamson (2005)
Confirmation	Each stage of the process has been shown to and discussed with specialist supervisors who have added knowledgeable perspectives and presented at research conferences. Due to the nature and constraints of Doctoral research it was not possible to add a 'person triangulation' where data would have been collected or analysed by different people.	Adamson (2005)
Time	Data were collected sequentially – at different places along a timeline.	Adamson (2005)
Sample	The sampling across the three studies together constitute a stratified sampling procedure, appropriate in multi-methods	(Creswell and Plano Clark, 2011)

There is a narrow margin of difference between triangulation and complementarity. Complementarity becomes the pulling together of triangulated elements, beyond the cross verification of data from two or more sources. A clearer understanding of 'complementarity' that has manifested itself continuously in this design is that decisions are weighted on the side of pragmatism. This is in line with Creswell and Plano Clark's (2011) view that the researcher should,

'(employ) strategies that address potential issues in data collection, data analysis and the interpretations that might compromise the merging or connecting of the quantitative and qualitative strands of the study and the conclusions drawn from the combination' (Creswell and Plano Clark, 2011, p. 239)

The final design (Figure 4) was made up of a quantitative and two types of qualitative methods. The appropriate selection of methods and processes picked were dictated by placing the research questions at the centre of the study and allowing them to dictate the methods needed, (Biesta, 2010). The parallel perspective (Sparkes and Smith, 2014) allowed qualitative methods to be the best tool to elicit knowledge around any personal perspectives, attitudes, beliefs and individual histories of participants, and quantitative methods to show how global such perspectives were (Bryman, 2008); to examine if middle-aged adults were experiencing corporeal dissociation across a nation or only in exercise uptake in middle-age.

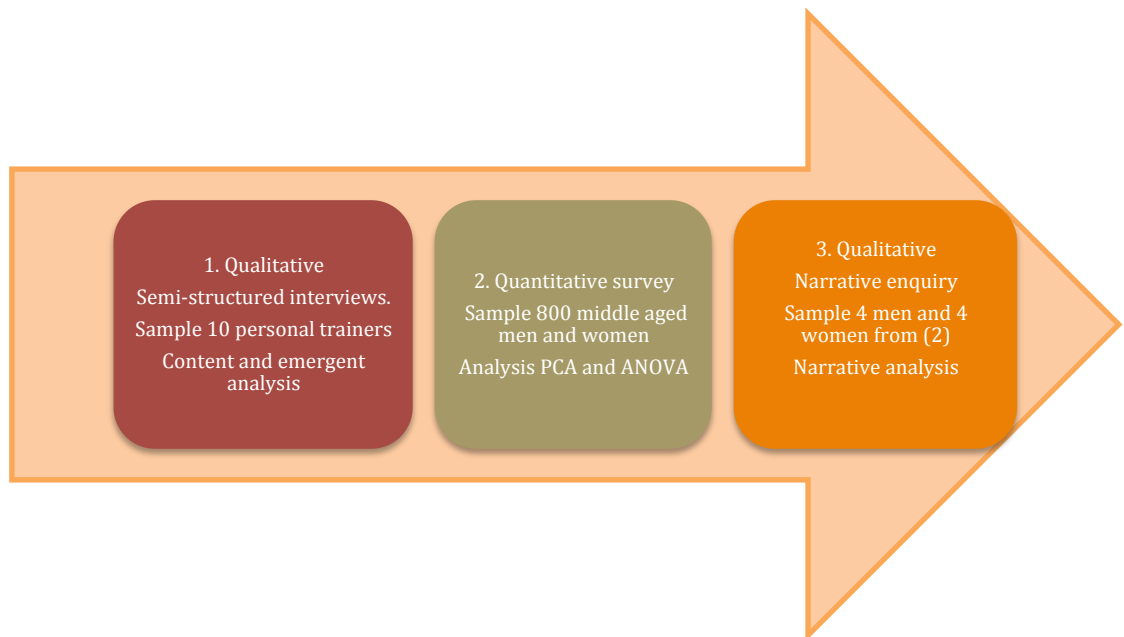


Figure 4. Sequential design process 2013-2015. No studies overlapped

Ethics

The ethical framework used in this research was built on three approaches; researcher reflexivity, being overseen by an organisational body concerned with ethics and a systemic, demonstrable approach to ethical dealings with other people associated with the study. The axiology within the pragmatic paradigm allows that biased perspectives might exist but must be declared (Costley et al., 2011; Denzin and Lincoln, 2000; Fox, Martin, and Green, 2007). Researcher reflexivity was applied during all studies with participant communications and interpreting data. In the qualitative study the interviewer was an active component of interview scenarios (Bryman, 2008; Burke Johnson and Onwuegbuzie, 2004; Rogers, 2012) and researcher bias such as being mindful of politics, gender and class was potentially present, for as Fox et al. (2007, p. 186) put it, *'Observer and observed are interdependent'*. The research was informed by Middlesex University School of Health and Education Ethical Guidelines and has ethical approval which can be found in Appendix 2. Finally, all dealings with people

associated with the research have been reported and examples evidenced in the appendices.

Potential participants were given information as to the nature of the research and their part in it. The information was sent as a letter or email and written in language that was accessible and understandable to the different types of reader such as specialist language for practitioners and clear straightforward language used for the general public. Participants were offered the opportunity to ask any questions about the study and given the choice to turn down participation or withdraw without having to give a reason at any point in the data collection process. All participants were asked to give oral informed consent that was included in the digital recording of the interview (Bowling, 2009).

Sensitive topics

Even when the quantitative survey was being developed, it was kept in mind that it was emotional reactions to experiences that were being investigated through reflexivity. Health and bodily issues are particularly sensitive areas for many people and can be insensitively handled through ignorance or lack of thought,

'Staff and managers in the helping professions who have only a limited understanding of how emotions feature in peoples lives in general, and in the world of professional practice in particular, run the risk of doing more harm than good' (Thompson and Thompson, 2005, p. 2).

To pre-empt potential problems, aspects of pre-existing reflective practice were considered (Thompson and Thompson, 2005). Participants' values including moral or political factors and emotional concerns were tackled responsibly and became vitally important when discussing sensitive issues. The questions were

designed to avoid issues to which participants may be particularly sensitive or find distressing, as that would have meant interviewees being unlikely to answer them.

Renzetti and Lee (1993) talk of sensitive topics being perceived as self-explanatory and without definition, as if everyone knows what constitutes a sensitive topic. '*Surely any reasonable person knows what's ethical and what's not?*' (Potter, 2006, p. 202) Though there may be consensus view on this in the case of extreme mental or physical abuse, it becomes a cloudier issue if seen on a continuum. Where along the line might body issues not be sensitive? Sensations such as guilt, shame or embarrassment are the product and outcomes of lived experiences, which are, by definition, individual and products of Alwin's (2012) five principles of lifecourse. These issues can be seen as threatening to those being studied if not approached thoughtfully (Renzetti and Lee, 1993). If the nature of this type of study is to expose such feelings, then it would be counterintuitive for the research to create barriers in allowing such issues to come to the forefront.

Standard personal training practice techniques were overtly employed to help avoid such an outcome, such as giving an air of friendly professionalism and offering confidentiality. The researcher was aware that participants might find the revelatory process of interview akin to counselling (Gray, 2004) and the researcher was not there in a counseling capacity. Interviewees can blur lines when talking about physical health with a sympathetic listener who can be associated with being a medical professional. Some people who need such help might not make differentiations (Bowling, 2009; Fox et al., 2007) and so the contact details of counseling/ mental health professionals were also on hand in case it was deemed necessary to terminate an interview.

Gray (2004, p. 235) says that, '*after a good interview, the interviewees should know more about themselves and their situation than they did before*'. So it was here. Participants reported they had enjoyed the experience and it had brought up interesting themes that they had not given much concern to and were now going to reflect on by themselves. This was seen as very positive. The information sheets and consent forms for all three studies can be found in Appendix 3.

Summary

This research utilises a pragmatic paradigm, where the pragmatic worldview centres around practicality and 'what works' and gives freedoms not found in the other established paradigms. The action of the research takes place in a social world. It is about lives lived and how perceptions and experiences affect actions and interactions later in the lifecourse, therefore, the ontology of the thesis is constructionist. The methodology employed is bricolage, which involves the researcher building her own toolbox using whichever tools or methods are best for the job. The three studies using multi-methods are developed in Chapters Four, Five and Six.

• Chapter 4 •

Study 1 – Personal trainer interviews

Introduction

Study 1 was informed by Alwin's (2012) lifecourse principles of linked lives because of the interdependence of the client practitioner relationship, and time and place because practitioner perspective is encapsulated in location and history. It looked to understand how 'corporeal dissociation' is experienced by other fitness practitioners and how they experienced their own clients who have a similar geographical and socio-economic status to the researchers' practice. Corporeal dissociation was discussed as a property of clients rather than of the practice. To do this, semi structured interviews were conducted that drew on phenomenological perspectives as both the interviewer and interviewees shared experiences through mutual understanding of practice.

Sample

A criterion based sample of 10 personal trainers from the same geographical area as the research practice, with a similar socio-economic client population. The personal trainers sample was purposive and 'convenient',

'participants are chosen because they have a particular feature, attribute or characteristic, or have a specific experience' (Sparkes and Smith, 2014, p. 70).

The personal trainers were found in two ways; the first method was snowball sampling from a known individual and the second was an online search. Personal Trainers are not collegiate, as the nature of the industry means they are protective of their own client base (Elliott, 2012). However, the researcher had known the first participant in a professional capacity for four years. He owned a private practice three miles away from the researcher's location. His client base was known to comprise a similar population. He was then asked to suggest other trainers he knew with practices in the Northwest London area. They were then contacted and the process was repeated. The study opted to interview trainers from all types of personal training practices: in a gym chain, small private practice, community based practice, Pilates studio and exercise to music classes in order to reflect the broad range of practice. In order to find trainers in practices that were not automatically appearing as part of a snowballing effect, three trainers were found using an online 'Google' search in the area. They were running a small Pilates, weightlifting and weight loss practice. They were approached directly by email via their websites, sent participant information sheets and asked to participate.

Bryman (2008) notes three forms of bias in sampling that have been addressed here. The first is that with a non-probability sample, human judgment might interfere with the selection process. However, it was considered that the snowballing and self-reporting overcame this as they were outside the control of the researcher. The second is that the sample might be inadequate. Here sampling was stopped when analysis showed saturation of themes. Finally, non-participation might affect results. This is more relevant to a quantitative study. Two trainers did decline to be involved and so further participants were sought. Here, participants were willing to both be involved and give their time and views freely.

The following list outlines key points for each interviewee with pseudonyms assigned and used with quotes in findings section.

1. *PHIL. Had own private practice. Boxing specialist. Average client age 50yrs. Reported phenomenon and went on to describe his own phobia for English from school.*
2. *RAY. Worked in small gym chain. Specialised in 'Evolutionary training'. Did initial physical testing but wasn't concerned with clients' previous experience.*
3. *STEVE. Own business employed 15 personal trainers. Imposed his own value system onto client motivators, for example, 'women train to look good, men continue being active'. Described phenomenon without realising it.*
4. *SIMON. Worked in large Gym chain. Reported the phenomenon. Thought he was not qualified to deal with psychological issues but found himself being a therapist.*
5. *JANE. Own small business and employed 2 personal trainers. Employed soft approach, short term programmes. Specialism in diet.*
6. *PHOEBE. Own small private practice. Specialised in pre and post natal exercise but had no specialist qualifications. Noted clients cite school as last PA done.*
7. *BRUCE. Training at clients' homes. 40yrs+. Reported phenomenon - linked bad school PE and inactivity. Saw PT's as unqualified counsellors.*
8. *TED. Ran small gym in affluent area. Believed the trainer's personality is key attribute. Thought phenomenon happened but only 10% in his practice.*
9. *BRIAN. Independent. City clients. Reported phenomenon.*
10. *PETE. Worked as independent trainer. Affluent 40+ women. Came from New Zealand. Thought corporeal dissociation was there but is a British thing.*

Data generation

Data were generated by undertaking semi-structured interviews as they encourage a depth of answers that provide rich data. They also allow for the participants narrative to be directed by the researcher (Bowling, 2009).

An initial pilot interview was undertaken and three questions modified as a result. The development of the interview guideline can be found in Appendix 4. When asking questions, it is important to make sure they are understandable to the interviewee and framed without researcher bias. The questions were considered for their efficacy to both collect appropriate data for the research question and to be understood within the practitioner's vocabulary and terms of reference. Face validity was tackled: by ensuring *'the questions (are) relevant, reasonable, unambiguous and clear?'* (Bowling, 2005, p. 398). The final draft was piloted by asking the first participant, after the interview, for his views in ease of understanding and answering the questions. He thought it appropriate and his answers seemed to flow and be comprehensive and so the interview guideline was considered fit for purpose (Figure 5).

PERSONAL TRAINERS INTERVIEW GUIDELINES

In order to keep your clients' confidentiality, please do not give me your clients' names when answering the following questions

1. Would you start by telling me about your personal training practice; where you train clients and the type of training you do including any specialism you have and use with clients.
 2. How would you describe your clients' age range, gender, types of occupation, fitness levels etc. and how long the average client stays with you.
 3. Do your clients ever raise childhood, adolescent or adult experiences of exercise?
 4. Have you observed any pattern in client experience?
 5. How do you take on board the client's past experience of exercise into their programme?
 6. How do you develop rapport or trust with your client?
 7. I have noticed this phenomenon in my own practice, have you seen it too...
- Finally could you tell me your age and qualifications

Figure 5. Study one final interview guidelines for personal trainer interviews

The interviews were held in the public work places of the participants; either in gyms or their own practice and were informal in approach. A hot drink was offered to participants if there was one available. These conscious attempts to put participants at their ease was hoped to help facilitate focus. Potential obstacles might include talking personally about themselves, their values, their practice, as well as more documented barriers such as that described by Dunne et al. (2005, p. 32) who discusses the interviewer/ee roles as '*actor identity and their relative social position (that) make a neutral interchange unlikely*', for example, doctor and patient. These '*contemporaneous social dynamics... invade the social space of the interview.*' The interviews lasted on average 30-40 minutes and were recorded digitally on an Apple iPhone. The iPhone had been tested prior to the first interview for its clarity, ability to record long durations and optimum recording distance and sound levels. A spare iPhone was also taken as a back-up in case

the first failed. Using an iPhone instead of large cumbersome recording equipment, again helped to give the effect of a friendly conversation. Contemporaneous note taking is encouraged (Bowling, 2005; Denzin and Lincoln, 2000; Kvale, 1996). However, notes were not taken during the interviews as the formality was thought to break up the relaxed atmosphere fostered. They were written up immediately afterwards to aid observations that would not appear on the recording. They helped, as Bowling (2009) says, to clarify ambiguities and check misinterpretations.

This type of interviewing can be a dynamic process with the prepared questions being used as a framework. The direction of questions is in the hands of the interviewer (Gray, 2004) and when participants brought up interesting points, they were asked to expand on them whilst reflexively being mindful not to make value judgments on the interviewees narrative. A sample transcribed interview can be found in Appendix 5.

Data Analysis

Data were analysed using thematic analysis, more specifically, content analysis and emergent analysis. These are commonly used methods with data collected from semi-structured interviews because they effectively, '*report patterns or themes within the data*' (Braun and Clarke, 2006, p. 79). They allow for data to be interrogated from two perspectives. Firstly, looking into the data 'top down' to find answers to the research questions posed, and secondly, 'bottom up' where thematic analysis uncovers themes in the data that could not have been predicted (Strauss and Corbin, 1990). Although Braun and Clarke (2006) espouse content analysis, they consider thematic analysis as no more than researchers' reflexive choices, whereas for Strauss and Corbin (1990) themes

emerge through the application of the systemised process they outline. The methodological bricolage used in this research sanctions both approaches as valid ways to investigate the research question, data and analysis methods.

Interviews were transcribed shortly after collection from MP4 format into Word documents and transferred to MAXQDA 11 software. Initially, analytic coding was used, by interrogating the data using topics that were associated with the research questions. These were further reduced into categories and then themes. To aid this, frequency tools and connection matrices in the software were employed. This coding was then transferred to imindmaps 7 where a mind map was created in which the relationship between the codes, categories and themes was clearly illustrated. The data were then put aside for two weeks and re-analysed using thematic analysis. This revisiting of the data allowed for codes to be renamed or redeployed in different configurations and it allowed themes to emerge that could not have been predicted to appear when writing the guidelines. A back and forward movement of moving quotes and codes to appropriate positions continued until best fit was achieved. Quotes were also added to each code to aid construction. After transcribing and analysing the ninth and tenth interviews, no new codes emerged so no further interviews were undertaken.

Study 1 Findings

Figure 6 illustrates the full coding from analysis after using MAXQDA software. The left side of the map includes the themes 'demographic data' and 'corporeal dissociation'. These were analysed using hierarchical content analysis looking into the data for evidence that might help address the research questions in a 'top down' approach. The demographic data came from the trainers' own descriptions of their clients together with their own professional practice. The raw data were left for a short while and then completely recoded using thematic analysis. This was done with the opposite approach of 'bottom up' and is shown on the right side of Figure 9 in the theme called 'values'. Here there was no intent to look for research question evidence, but to see what themes emerge that may not have been foreseen. A full description of the analytic process is incorporated into these findings.

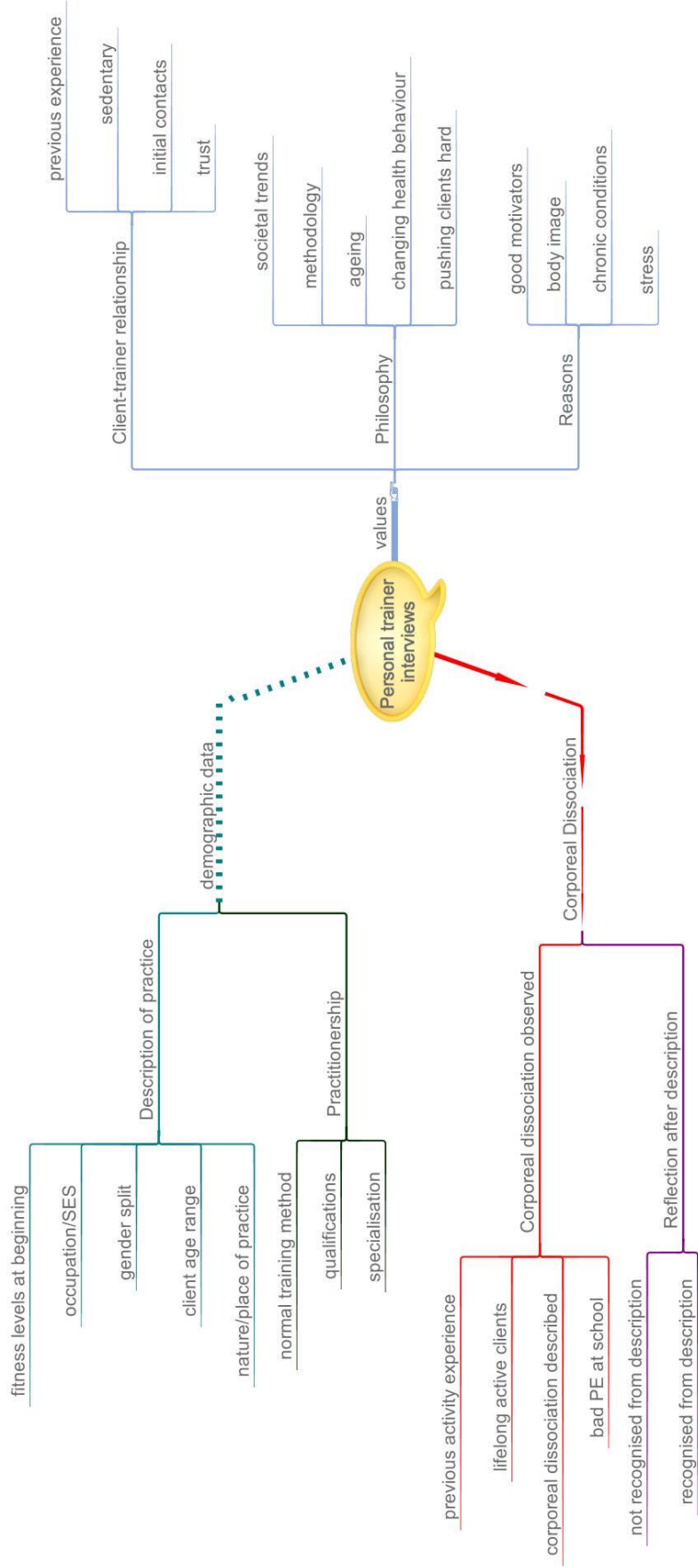


Figure 6. Full coding map of personal trainer interviews.

Content analysis results

The two themes, 'demographic data' and 'corporeal dissociation' were contracted into categories of: 'description of practice' describing aspects of the trainers' clients, place and type of practice; 'practitionership' that contains information regarding the application of professional practice; 'corporeal dissociation observed' which includes references to corporeal dissociation and 'reflection after description' for responses about corporeal dissociation made after it had been outlined at the end of the interview. Each of these categories are now shown in detail.

Description of practice category

Description of practice (Figure 7) was made up of five codes: 'Fitness levels at beginning', 'occupation/SES', 'gender split', 'client age range' and 'nature/place of practice'.

Fitness levels at beginning

Clients are described as being below average fitness, quite sedentary and overweight. All trainers do an initial assessment and build a picture of ability and previous experience except one trainer who was not interested in previous experience at all and based exercise prescription on the initial testing

"so overweight, wanting to lose some body fat and look a bit better"

STEVE

"I always try and find out what they have done in the past" PETE

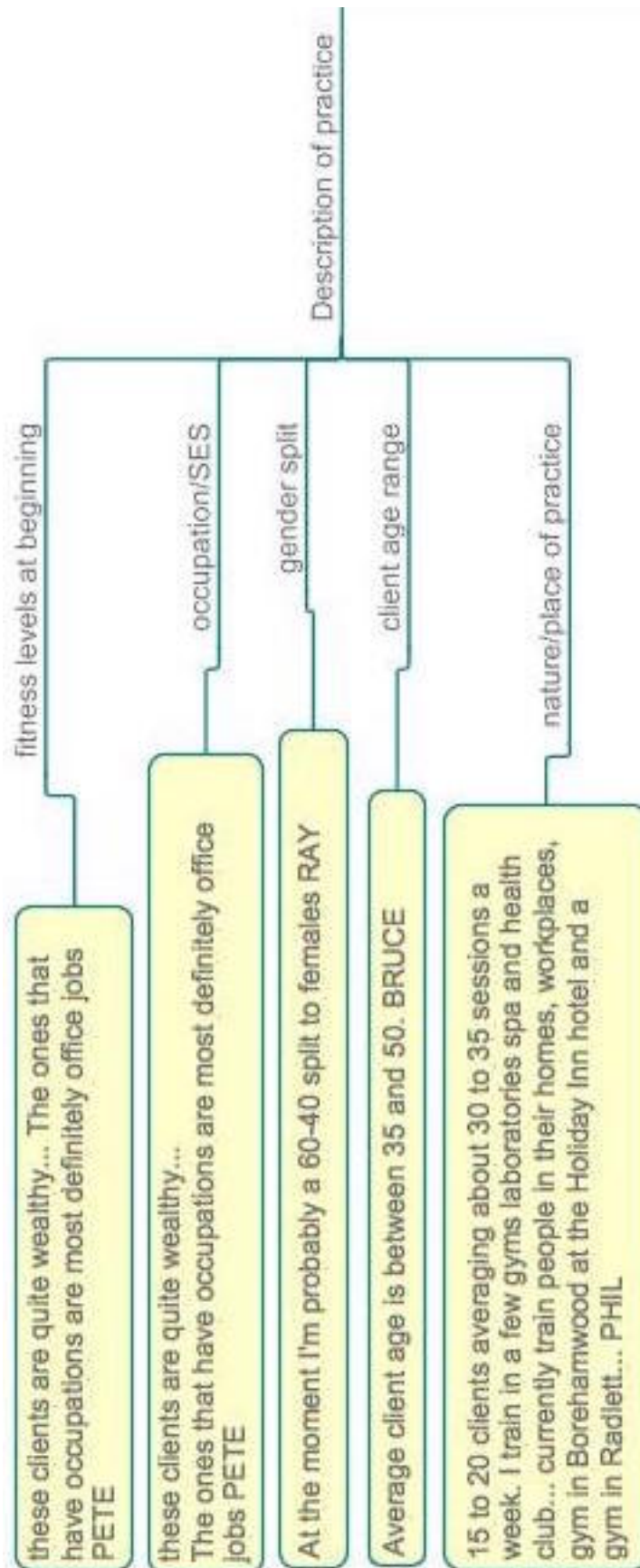


Figure 7. Description of practice category with codes and examples

Occupation/SES, gender split, client age range and nature/place of practice

All trainers report their clients have high socio economic status (SES) and that people have to be wealthy to employ personal trainers as they are expensive.

“generally professionals, accountants, doctors, bankers” BRUCE

“its quite an expensive market, personal training” PHIL

Trainers reported an approximately equal split of women and men, with slightly more women in most cases. The average age of their clients ranged from mid 30s, to mid 50s. All trainers had clients within the age range of this study. Trainers were working in a wide variety of situations: Private gyms, clients' homes, large gym chains, community classes, weight loss clinic, pilates studio, parks and own private studio. It was common for trainers to be self employed although a small number employed other trainers as part of their business. Client retention ranged from 12 week programmes to 5 years and client numbers ranged between 15-35 clients. This demonstrates the similarity of the practices of trainers interviewed to the researcher's practice.

Practitionership category

The 'practitionership' category (Figure 8) housed three subcategories: normal training method, which was further subdivided into lose weight, qualifications and specialisation.

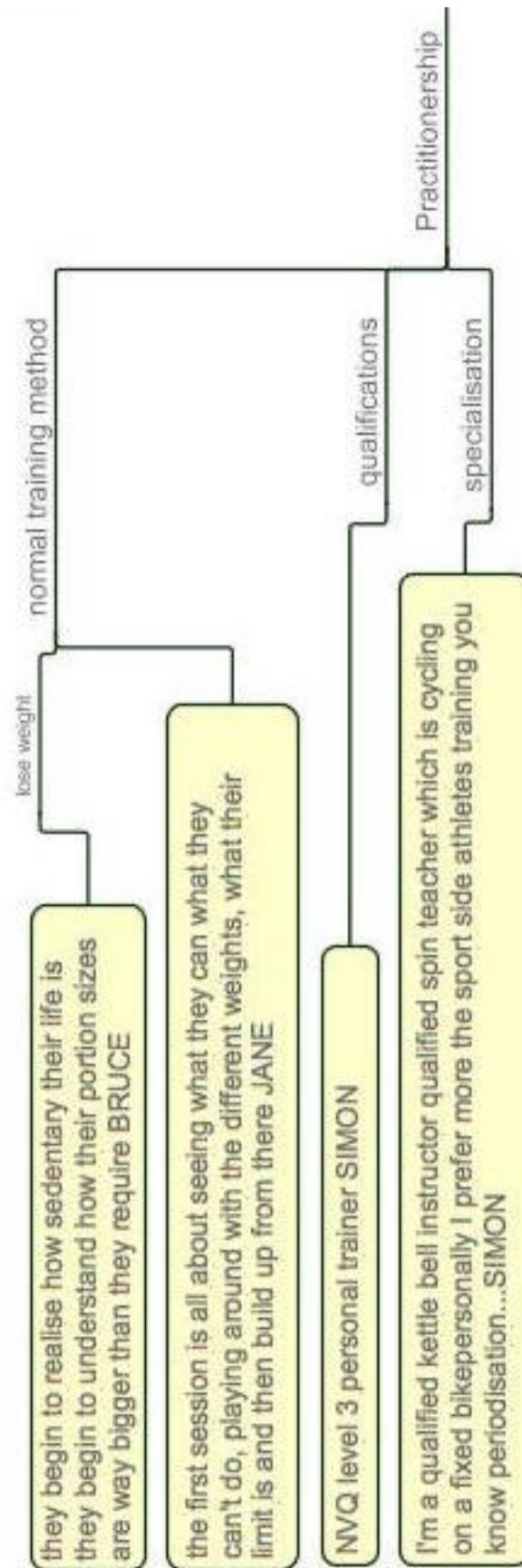


Figure 8. Practitionership category with codes and examples

Normal training method and lose weight

Programme implementation by trainers was split into two types. The first is where the client's goals (such as weight loss) were used as a motivation and the programme was designed around the client's preferences. In the second type, the trainer imposed a programme because they believed it was appropriate and the client's preferences were seen as irrelevant.

"I try to develop programmes that they enjoy that are sustainable" RAY

"I've noticed with clients if you change how they think so when you're constantly putting your value system into them you then begin to see your value system coming back to you" BRUCE

They used client's goals as a focus for programme design, whereas other trainers imposed methods with disregard to client preferences or ability. This example showed a negative outcome,

"pushing and pushing and eventually her shoulder gave way her ligaments gave way and she had an operation on her shoulder and it was a learning curve for me as well as her and you've got be careful" PHIL

All trainers thought they had great rapport with their clients.

"Oh yeah definitely training fundamentally relies on rapport you can be the best trainer in the world your theory can be fantastic but if you haven't got rapport no client will stay with you" PHIL

All trainers thought that the time spent with the client should be doing resistance work rather than cardio-vascular, which they thought the clients could do by themselves without requiring extrinsic motivation.

“cardio, they can do by themselves, they can go for walks, they can go for a little run around the block or something like that. They don’t need to pay someone for that” JANE

Weight loss was the most commonly reported reason for clients hiring a trainer, yet knowledge of and approaches to dietary programmes varied. It was also reported that women wanted to lose weight for personal image rather than health issues.

Qualifications and specialisation

Qualifications ranged from, at the highest, a Level 6 degree in Human Physiology, or Sport Science, to the most common; a Level 3 vocational diploma in Personal Training. Trainers are required to do CPD in order to remain on the REPS register. CPD courses reported included nutrition, triogenics, kettle bell, first aid, boxercise, coaching and evolutionary fitness, all at Level 2. These had become the basis of their practice specialisation. No one reported having a Level 4 specialist qualification appropriate to their specialisation. Trainers described their own specialisations as: kettle bells, weight loss, pregnancy, rehabilitation, soft tissue therapy and boxing and being a ‘good all rounder’. These findings placed the participants within the standard professional practice criteria and reflect the researcher’s professional qualifications.

Corporeal dissociation observed category

‘Corporeal dissociation observed’ category (Figure 9) is subdivided into the following codes: ‘previous activity experience, ‘corporeal dissociation described’ (further subdivided to re-association), ‘lifelong active clients’ (further subdivided into trainers physical history) and ‘bad PE at school’.

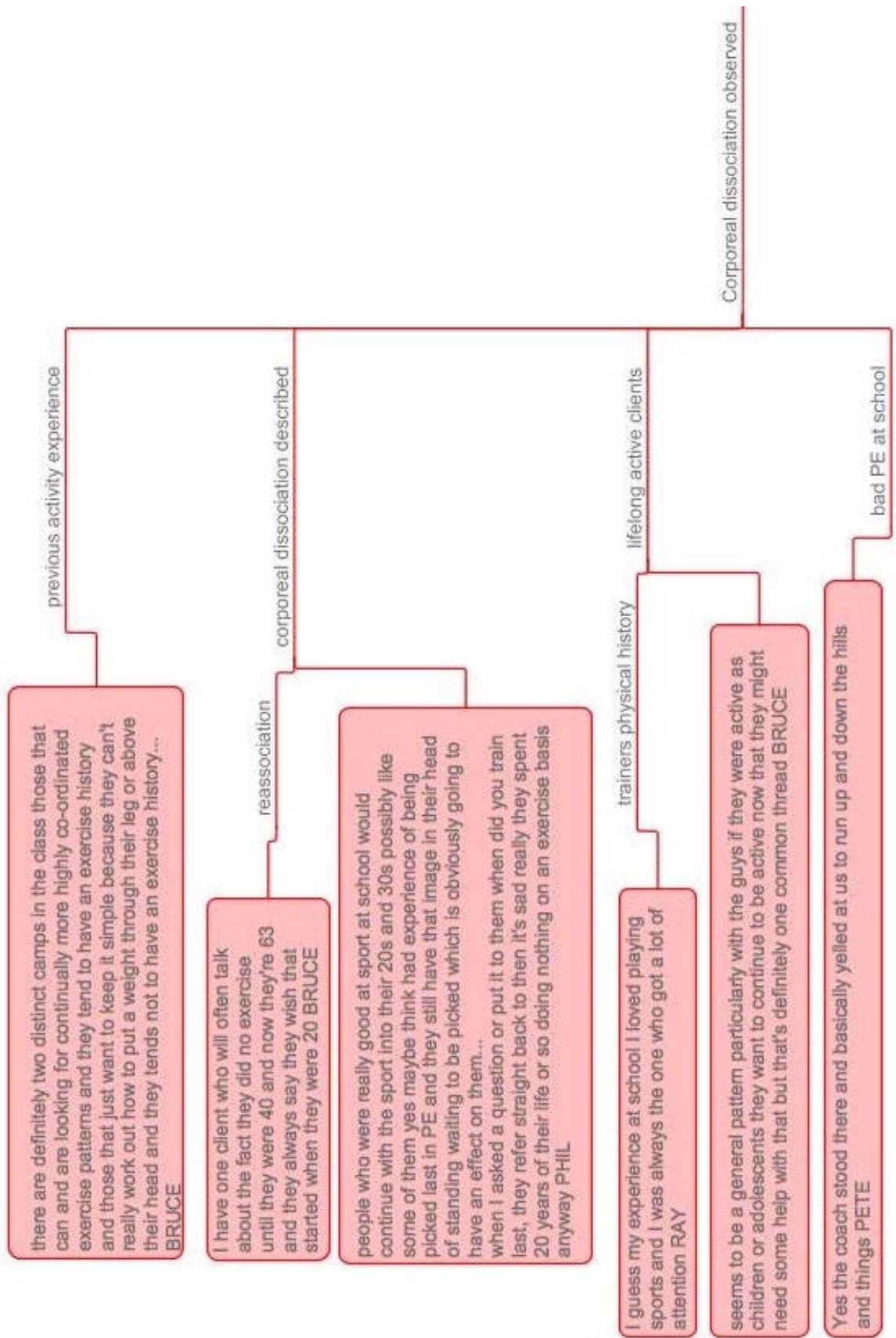


Figure 9. Corporeal dissociation observed and reflection after description categories with codes and examples

Previous activity experience

Most initial assessments included questions about previous experience as a way to gauge present ability. Most clients had negative experiences and if clients reported negative experiences, trainers actively avoided replicating the exercise that caused this stress. However, a single trainer took no account of previous activity and gauged ability from the initial movement assessment.

Corporeal dissociation described

Corporeal dissociation was described by some trainers, who had recognised the client's narrative of the PA history and linked it to their present exercise perceptions whilst others still vocalised the experience but had not made connection between its elements. Stories were clear and unequivocal.

“they had experience of being picked last in PE and they still have that image in their head of standing waiting to be picked, which is obviously going to have an effect on them and ...when I asked a question or put it to them, when did you train last, they refer straight back to then. It's sad really they spent 20 years of their life or so doing nothing on an exercise basis anyway” PHIL

“he was talking about his school experience. I think he's just turned 50. He was saying that he had a bad experience with PE at school he was never really included and he was never really encouraged to do sport. It was either you were good (or) you were rubbish...and it made him hate exercise and hate physical activity and sport, I'm kind of piecing it together, I kind of think that experience was one of the reasons he got overweight in the first place” SIMON

"I think that whole PE thing, I don't know if there was one specific incident but he has talked in general that he was excluded from doing stuff"

SIMON

"there's definitely something in this when you're young and you've had a bad experience of exercise being exhausted doing cross country bullied by your PE teacher because you're wearing certain things it definitely affects your long-term view (of kind of things) of exercise" STEVE

"I think it's the fact that dependent on their age group you get the stereotype of the Sergeant Major type games teacher at school with very strict discipline of what they're supposed to be doing. Depending on the person, it can have a bad affect on them" BRIAN

School PE experience was the life study that both trainers and their clients attached weight to historically.

"nobody mentions anything in the post school or preschool era" PETE

Re-association

The process of 'corporeal re-association', was discussed as being a result of exercise programming.

"he's going to the gym on his own which he didn't want to do before, so he's starting to...overturn some of the negative effects that might have been started while he was at school" SIMON

Lifelong active clients

Trainers described the narratives of clients who have been active throughout their life and the relationship they have with the trainer as different to inactive clients. This code together with the next 'trainers physical history', suggests there might

be a synergy of experience and interests. Some narratives tell of clients that have had substantial achievements within sport.

“and we got talking and he started reminiscing he was an Olympian (boxing). I think it was in the 80’s” PHIL

*“so people that have got that general sense of exercise through their teenage years university or so on to their early 20s they'd come back to it they enjoy using their body, they enjoy the physicality of pushing their body to the limit in certain ways you know, depending on their past”
BRUCE*

“one guy was a very keen rower and did a hell of a lot of rowing I think he may well have been a blue” BRIAN

Trainers' physical history

Trainers reminisced about their own deep connection with sport and exercise in their life. Again it is school that is given the highest priority.

“for me personally I've always played sport all way through school I kept playing sport and kept exercising” PETE

It was recognised that although trainers had a good experience of PE, they saw classmates who had bad experiences.

“I was a sportsman, so obviously I love my PE I'm sure there were many kids in my class that didn't and what they experienced maybe the opposite to what I did” PHIL

Bad PE at school

Trainers reported their clients' memories of bad experiences of PE,

“I don't think any one of my clients said they enjoyed PE” PETE

“they were put off by the teacher or being forced to have to do something”

PETE

“The people that are good at sport get the most attention and they are kind of nurtured whereas the people who aren’t so good they are almost dismissed and kind of put to the side” RAY

“Being out in the cold, doing the track, doing things like that and then the showers, everyone hated the showers, I still remember that myself”

PHOEBE

“I mean everyone hated PE or it was one of those things they avoided more than everything” PETE

These events also took place when the client was attending secondary school.

“Now he is 50 this year so he was what 14 or 15 when he was doing it”

PETE

“at 15, 16 at school, that's probably the only time they will refer to past activities in an exercise sense” PHIL

Reflection after description category

Reflection after description category (Figure 10) is divided into two codes: ‘not recognised from description’ and ‘recognised from description’.

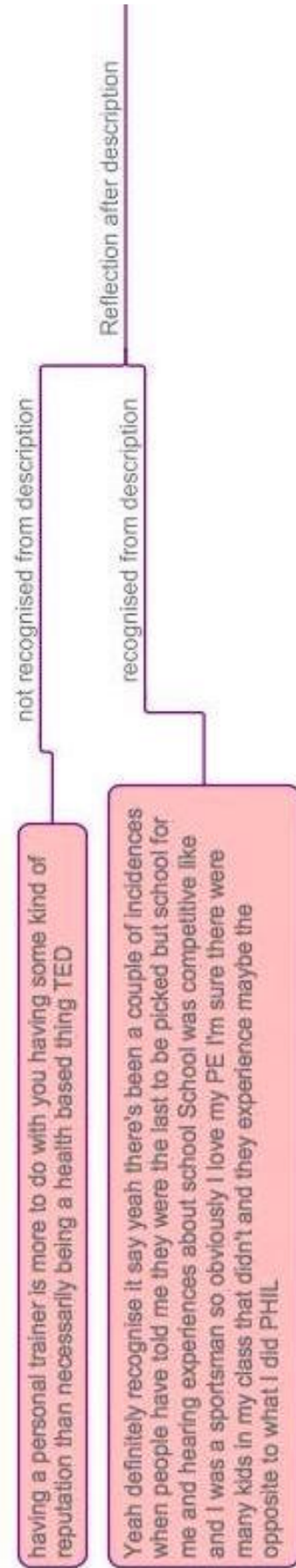


Figure 10. Trainers post interview sub-category with examples

At the end of the interview, corporeal dissociation was outlined to each trainer and they were asked if it resonated in their own practice. Trainers reported having had seen it happen in their own practice although, several said they had not thought about it in that context but as they were thinking about it, it fitted their experience. It had also been observed in other practices. It was said to not reflect a single trainer's practice. The trainer's observations and awareness of the phenomenon differed and although not universal, were deserving of attention.

Together, the findings of the content analysis found that demographically, both the trainers and their client bases were reflective of the original practice. They also find that corporeal dissociation was reported in all but one other practice. The trainer who reported it not being present in his own practice was nonetheless aware of it in other locations.

Emergent analysis results

The results from emergent analysis are illustrated on the right hand side of Figure 9. The theme, 'values' is a contraction of the categories; 'client relationship' 'philosophy' and 'reasons'. These in turn are composites of individual codes. Each of these categories are now shown in detail. The results in this section are emergent codes that came out of the data.

Client - trainer relationship category

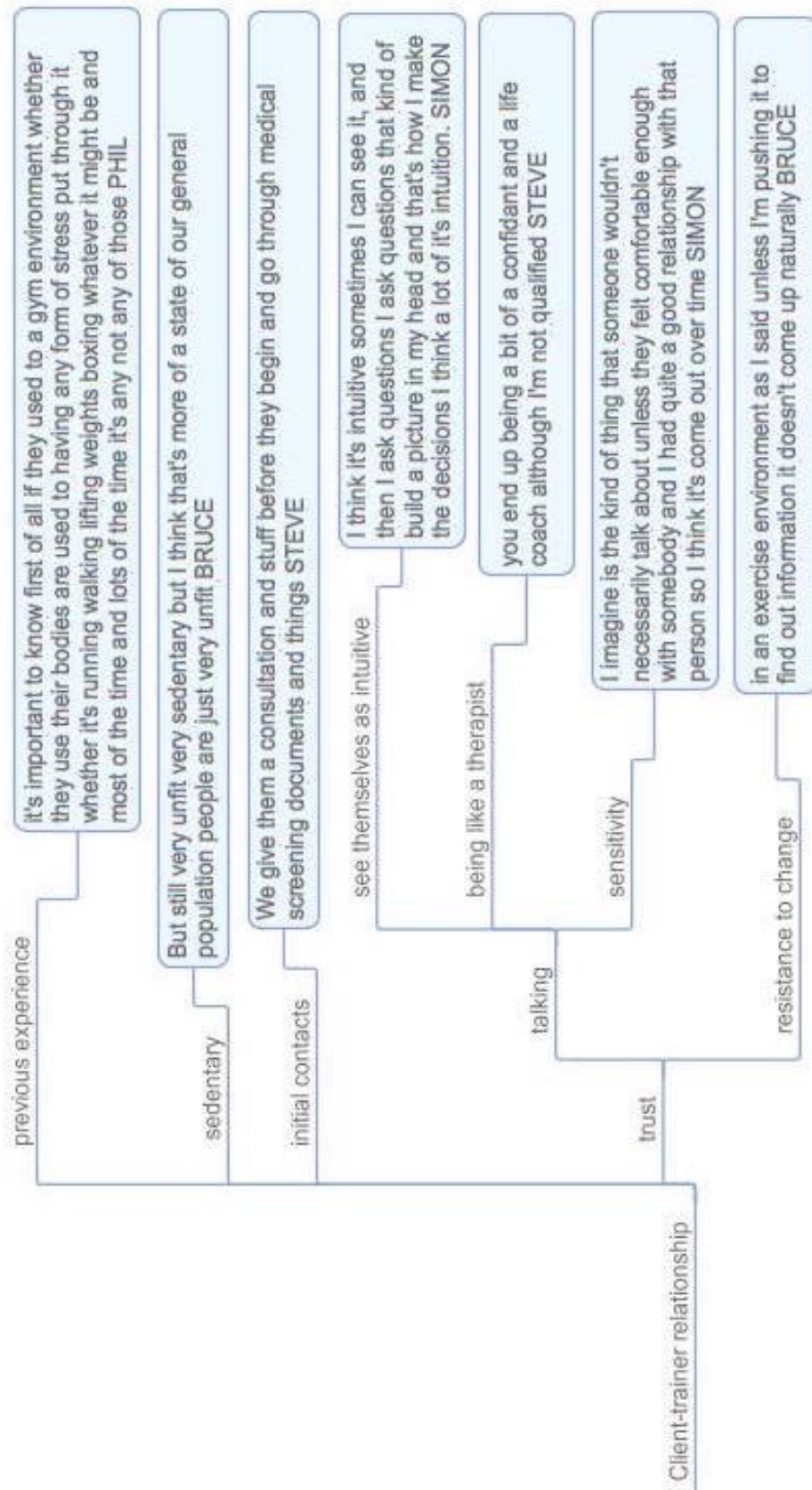


Figure 11. Client-trainer relationship sub-category with examples

The client-trainer relationship category (Figure 11) incorporated the 'softer' aspects of the professional relationship between client and trainer. It transcended the knowledge based information and recorded the trainers' perspectives of their own efficacy and procedures. It is made up of codes: 'previous experience', 'sedentary', 'initial contacts' and 'trust' which is sub-divided into 'talking' and 'resistance to change'. Talking is again made up of three codes; 'see themselves as intuitive', 'being like a therapist' and 'sensitivity'.

Previous experience and Sedentary

These codes reflect the importance trainers placed on clients past experience of exercise. Perspectives were varied and went from believing that past experience was irrelevant to it being paramount to future success.

"I need to gauge what kind of level they are so we need to know what interests you have, so past experiences are really fundamental" PHIL

Trainers believed that clients who had been physically active in their past were much easier to train than those who had not.

"someone coming in with a non-exercise history can be particularly difficult to see exercise as a pleasurable thing to do" BRUCE

"I think people that were active previously or done specific sport would then be more inclined to use the gym and be better at movement so they are generally easier to work with" RAY

"If people come with a limited exercise history their enjoyment of exercise is generally lower because they find it a struggle to do basic movements" BRUCE

This led to assumptions about ability.

"I kind of presume that they are going to be good at certain things" RAY

"I'm making a presumption based on what I see" BRUCE

Other trainers talked of their clients being sedentary which they linked to having desk bound jobs.

"The ones that have occupations are most definitely office jobs...sitting at a desk for too long a period" PHIL

The trainers saw their sedentary clients as being in keeping with the general milieu.

"unfit, sedentary, but I think that's more of a state of our general population. People are just unfit" BRUCE

Initial contacts

Most trainers employed a mechanism to 'get to know' their clients. Apart from filling in a physical activity readiness questionnaire (PARQ) form, initial contact became very individual. All trainers will have been taught a standardised approach to client assessment. This was not followed, but rather the initial contact was used as a measurement against their personal value system and professional approach.

"a lot of people will sort of make themselves look bigger than they are and when you start you find out the real truths" PETE

"I always intend to have a deep consultation to try to find out why they are here" PHIL

"I definitely think you just become aware... I'm not going to sit down and ask everyone what's their history" BRUCE

Only one trainer followed an approved assessment procedure. He ran a company and employed a number of personal trainers therefore his requirement to standardise procedures for insurance purposes might be in play.

"We give them a consultation and stuff before they begin and go through medical screening documents and things to make sure we know about their injuries and one of the key questions is have you exercised, if so what kind of stuff did you do" STEVE

Trust

Trust is made up of codes; 'resistance to change' and 'talking which is further divided into 'seeing themselves as intuitive', 'being like a therapist' and 'sensitivity'.

Talking, seeing themselves as intuitive, being like a therapist

Communication is seen to be at the heart of the client trainer relationship

"training, fundamentally relies on rapport. You can be the best trainer in the world, your theory can be fantastic but if you haven't got rapport no client will stay with you" PHIL

However, 'talking' is not necessarily confined to verbal communication.

"I exchange text messages continually with clients and they tell me what they've done that day" PHIL

The level of 'getting to know clients', ranges from impersonal to personal.

"I don't think I consider them personally" RAY

“people are much more about talking about their families rather than their exercise history” BRUCE

Trainers described themselves as intuitive and that this was seen as an intrinsic skill required for success.

“I ask questions that kind of build a picture in my head and that’s how I make the decision. I think a lot of it’s intuitive” SIMON

“ I think you’ve got to have that affinity and rapport with people, get on with them, it shines through to your work” BRIAN

Others said that they felt that part of their job was to be counsellor or therapist.

“we just ended up being a counselling session more than a training session” SIMON

“it really depends on how much the client is prepared to disclose to you and sometimes you definitely do fall into the kind of hairdresser type counselling” BRUCE

“you end up being a bit of a confidante and a life coach although I’m not qualified” STEVE

High levels of trust their clients had in them was mentioned, by revealing emotional/sensitive topics that the client might not discuss with others.

“you build a bond and a trust with each (client) and you will be sensible with that trust. Obviously you don’t tell anybody. You will be discrete” PHIL

“I imagine it’s the kind of thing that someone wouldn’t necessarily talk about unless they felt comfortable enough with someone” SIMON

Resistance to change

Trainers all encountered resistance to change behaviour patterns in clients regarding diet and exercise and the process that overcame it was part of the remit. When it was not working, the trainer did not interrogate their practice but assumed the client was not ready for change. Change was seen as a positive because it made the trainers job easier.

“it’s getting into their heads as well as making them think about the gym in a certain way, so that later on it becomes easier for me” SIMON

Philosophy category

The category philosophy (Figure 12) is made up of five codes: ‘societal trends’, ‘methodology’, ‘ageing’, ‘changing health behaviour’ and ‘pushing clients hard’. Together they encompass trainers wider societal and industry views about the role of physical activity.

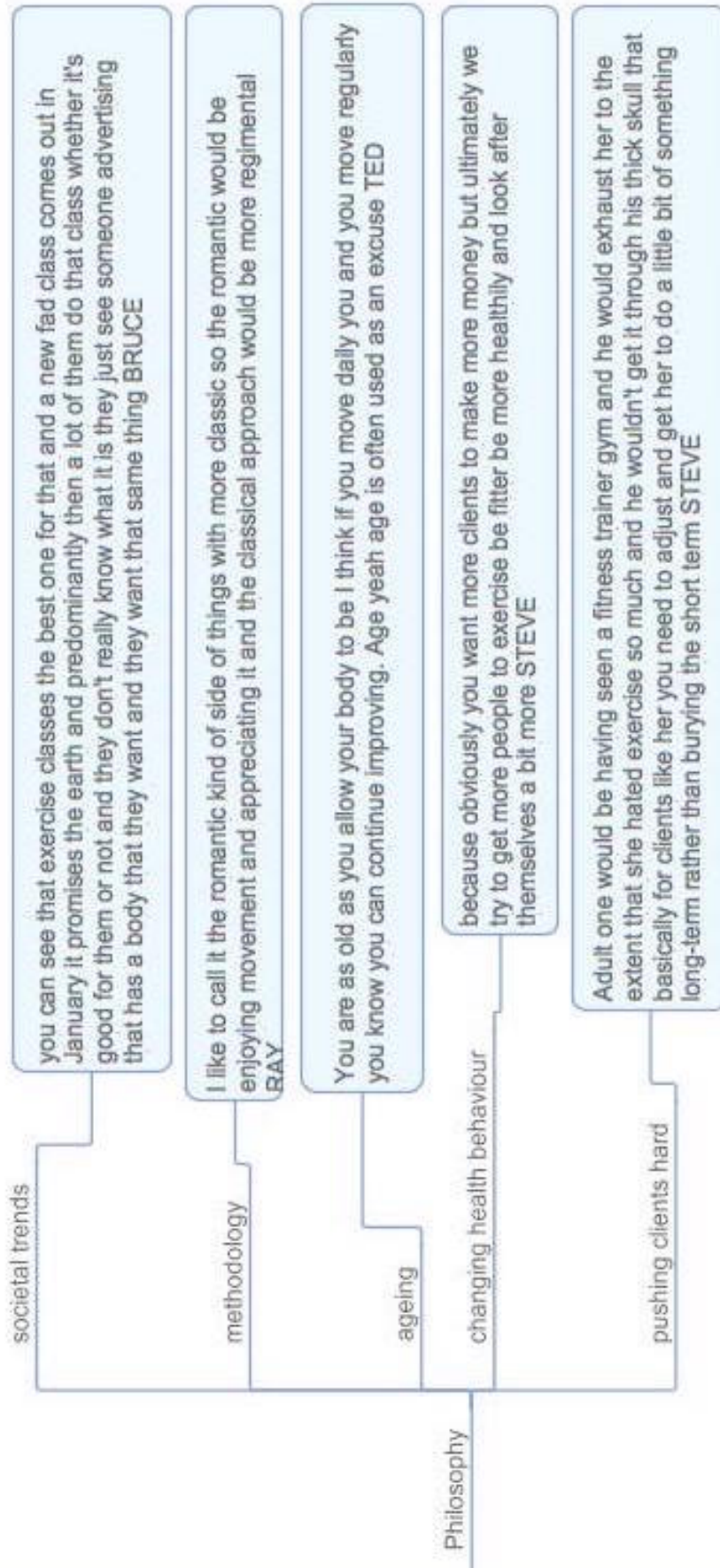


Figure 12. Philosophy sub-category with examples

Societal trends

As the trainers were gym-centric, their views of population exercise uptake differed from epidemiological reports.

"I know society in general is desperately trying to push exercise, I think there is a general shift...so they're taking up exercise, realising the implications of not doing enough exercise or eating poor diet" BRIAN

They talked about how the industry was driven by fads

"a new fad class comes out in January, it promises the earth and then a lot of them do that class whether it's good for them or not" BRUCE

"so at the moment cycling is quite big...when this World Cup is on, more people are playing football and when Wimbledon's on people play tennis" BRUCE

Methodology and pushing clients hard

There is a tension between which style of training should be adopted, the more standardised, taught approach or something more intuitive.

"just trying to balance, I call it the romantic kind of side of things with more classic so the romantic would be enjoying movement and appreciating it and the classical approach would be more regimental that's in the personality you know" RAY

A commonly reported event by new clients is having been pushed too hard previously with negative consequences. Trainers think it is a failing of other trainers.

"X had seen a fitness trainer and he would exhaust her to the extent that she hated exercise so much and he wouldn't get it through his thick skull

that basically for clients like her you need to adjust and get her to do a little bit of something long-term” STEVE

Ageing

The trainers were all younger and fitter than their charges and ideas around ageing were not sympathetic

“getting older, you’re more frail, you’re more this you’re more that. If you move regularly, you eat well, I don’t think that should be a consideration”

RAY

Changing health behaviour

Trainers described being active in their clients’ health behaviour change as ‘just being there’ rather than describing implementing a measureable process.

“It is tricky because hopefully things do change and we do our best. If they need it we try to change their lifestyle and yes, I try to gauge and try to assess what we’re doing having to make things better” PHIL

Reasons sub-category

The reasons category (Figure 13) is made up of five codes: ‘good motivators’, ‘body image’, ‘lifecourse’, ‘chronic conditions’ and ‘stress’. Together they make up the trainers’ perspectives and justification of their clients’ exercise motivations to employ a trainer.

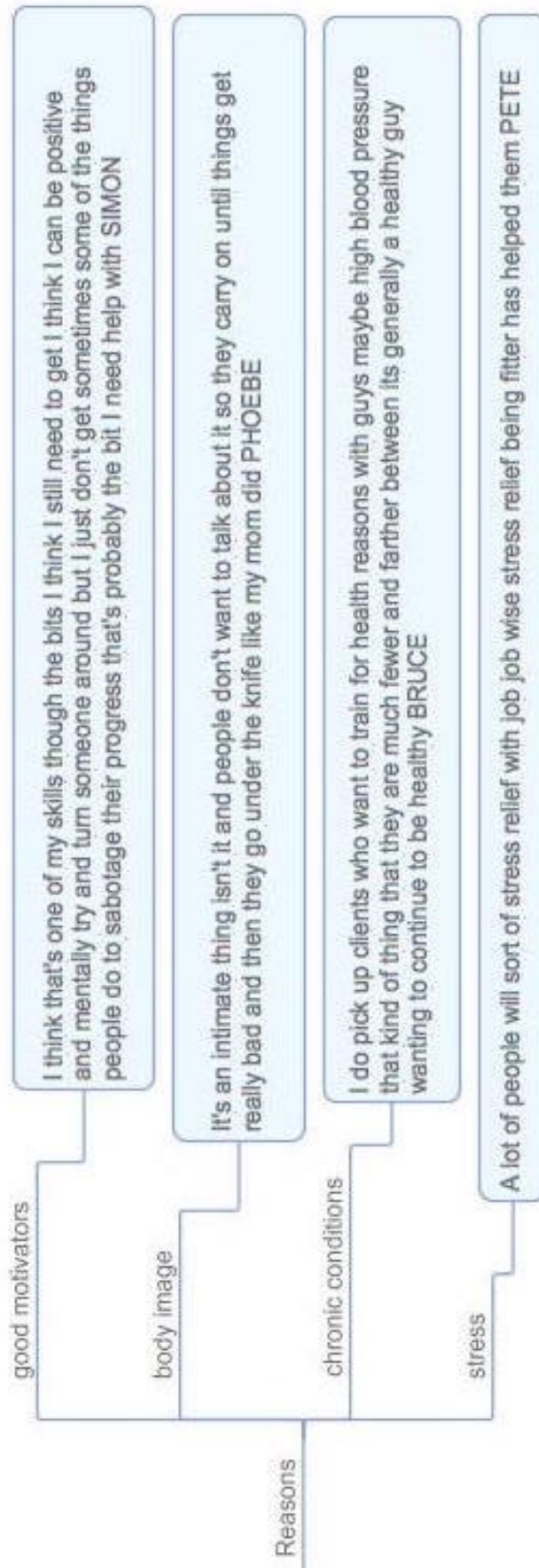


Figure 13. Reasons sub-category with examples

Good motivators

Trainers' ability to motivate was not a separate skill that was implemented when needed but was connected to their own motivation.

"I've noticed that my own motivation for training has changed that it's a funny one I would train with my clients as part of my day so if you're teaching a class you're actively involved in exercise" BRUCE

"it's easy for me to do this stuff I understand it it's hard for you and I understand it's a big deal for you to get someone's help" SIMON

Motivation is perceived as a central attribute. The trainers saw themselves as either intuitive or motivational and believed that rapport was key to success both professionally and economically.

"I term it as if you can't cheese you shouldn't be in the business. You've got to be able to strike up a rapport with nearly every type of person that comes through the room and do it with a smile" TED

Body image, chronic conditions, stress and lifecourse

The descriptions of 'body' by trainers are 'graphic'.

"she used to be really fat as a child" STEVE

*"they carry on until things get really bad and then they go under the knife"
PHOEBE*

It was commonly acknowledged that most clients had some kind of chronic health condition. Dealing with such problems was an implicit part of the job.

"I do pick up clients who want to train for health reasons maybe high blood pressure that kind of thing. Much fewer and farther between is a healthy guy wanting to continue to be healthy" BRUCE

Stress was acknowledged as a major problem for their clients. The stress came from different facets of their lives. They believed the exercise prescription was effective. None of them saw exercise as an extra stressor.

Trainers discussed and linked clients present activity levels as part of a lifecourse causality.

“they got through their 20s possibly their 30s with actually being fine and then all of a sudden they might have had children and they feel they want to get that body back” PHIL

“I’m still trying to work this out I’m not really sure but I think there is a link somewhere to childhood and upbringing” SIMON

Study 1 Discussion

Study 1 focused on experiences of fitness practitioners with their clients including how they thought clients related to their body. It was required because corporeal dissociation was observed in the researcher’s practice and it was therefore deemed necessary to find out if it was either particular to the specific practice (a construct of the researcher) or was observable in other practices. Personal training is here seen to be a relationship between the knowledge giver and the knowledge taken. This study hones down specifically on the knowledge giver who use the body as a pedagogic device (Evans et al., 2009) and addresses the research question:

To what extent can ‘corporeal dissociation’ be identified in middle-aged men and women in a health and fitness context and in which forms?

The data analysis was divided into two approaches; the first, content analysis, to see if answers to questions might be directly extracted. The second, emergent analysis, was to discover aspects of practice, beliefs and experiences that could not have been predicted when writing the interview questions.

The trainers interviewed all practice within North West London. Their clients were all reported to have a high SES with occupations putting them into A, B, C1 categories. This was further supported by a trainer, who acknowledged that employing a personal trainer was expensive. Gender was reported as being mostly equally split with a slight leaning to more women than men with average age across all practices being mid 40s with two trainers having slightly older and two having slightly younger client bases. Client retention seems to be wide from set 12 week programmes up to five years. The size of practice ranged from 15-35 clients.

The trainers all endeavoured to offer a 'specialisation' to their clients in order to differentiate themselves from their competitors. The highest qualification gained was at degree level but two trainers admitted they were not formally qualified for the specialisation they were offering.

Trainers themselves had active profiles and tended to view their clients' success through their own value system. Clients were described as active. This matters because it was observed that the trainers felt more kinship with these clients and were respectful of these clients' previous athletic achievements. They clearly enjoyed training these people. However, such a skewed value system can have negative ramifications, especially as the majority of clients were historically inactive. Philips and Drummond (2001) noted that trainers inability to have empathy or understanding of clients ineptitude or reduced motivational drive to push themselves can put clients off.

'When individuals perceive a caring and task-involving climate in physical activity settings they are more likely to have positive experiences',
(Brown and Fry, 2011, p. 70)

Here the data also showed that trainers being younger than the majority of their clients reinforced a lack of understanding of clients' needs and that they just did not understand what it felt like to be middle-aged with low level chronic pain.

In order to practice, personal trainers must pass a minimum National Vocational Qualification (NVQ) qualification. All training providers must map their courses to the qualification requirements. This means that trainers all start with the same understanding of knowledge and procedures. However, the methods reported by interviewees varied in process and efficacy from the original training principles they learned. Some trainers understood the importance of clients' preferences,

"as I said sustainable things rather than it being a chore and being regimental they got to find something that they enjoy doing and something that they feel they look forward to doing" RAY

Apart from one trainer who was not interested in clients' previous history or experiences of PA, trainers had built up a picture of clients' previous history through dialogue. The complete corporeal dissociation phenomenon was described without prompting either in entirety as a single narrative or in separate parts, so not noticing a pattern or contextualising the constituent parts in the same way. School PE was consistently reported as the last lifecourse point where physical activity was significant to the clients.

"many of them refer to being a child strangely enough like ...it's the only time they've ever done exercise at 15,16 so that's probably the only time they will refer to past activities in an exercise sense" PHIL

“One lady who came to my class and said that the last time she exercised was at school” PHOEBE

Trainers reported that their clients had bad school PE experiences.

“I mean everyone hated PE or it was one of those things that they avoided more than anything” PETE

And a trainer with an international client base noted that this is particular to British clients.

“they were put off by the teacher or being forced to have to do something and that was it, sort of thing with my English clients.” PETE

With a link made between school experience and later sedentary lifestyle.

“I get (clients) who basically have been put off since school, kind of been sedentary” TED

It should be remembered that these reports are through the trainer's lens of their own school PE experience, which was different to their clients as they are so much younger. However, the reports were unequivocal.

At the end of the interview, when corporeal dissociation was outlined to the trainer, a number of interviewees who had not made contextual connections but had described it in sections took the opportunity to reflect over what they had said, and their own practice. As they made the connection, their awareness became palpable. Those that had described corporeal dissociation acknowledged it immediately, one person who said it did not happen in his practice reconsidered at the end and said maybe it was there in 10% of his clients and he had seen it elsewhere. Several trainers commented that they had not thought about their practice quite so deeply and that the interview had given them the opportunity to

look at their methods from a new perspective. They felt it had been helpful and they intended to carry on their reflection and be more aware when they were working with clients. They saw value in being systematic about clients' histories.

The content analysis showed that the researcher's practice and client base was wholly within the parameters of other practices in the area and that corporeal dissociation was observed by the majority of other practitioners amongst their own clients and therefore, it was not specific to the researcher's practice.

The second round of analysis was emergent. Answers could not be anticipated, nor predicted. It is understood, that one of the reasons to interview people at length is that they can give you a fuller account than in a survey, and it is perhaps these intuitive spaces between the quantitative facts that suggest explanation or motivation. The interviewees had not been asked about their philosophy of practice and yet narrative emerges from the sum of their experiences and values. Emergent themes have been highlighted in bold.

Trainers perceived their clients through their own value system. Being inactive is considered an unnatural state to be in and by employing a personal trainer they were being helped back to 'movement'. Trainers saw themselves as the 'expert' regarding body matters, reinforced by clients coming to them with problems to solve.

"they might have come to me because they've experienced hip pain for the last few months and we've got to discover why you are experiencing it"

PHIL

Trainers had a dualistic view of their clients, those that were active and those that were inactive. As they could not understand inactivity as a state of being, and as

inactive or sedentary people made up the majority of their practice, they employed a number of strategies to justify this 'other':

Sedentary lifestyle and older age were connected,

"The thing is with people and age it's the lifestyles we lead" RAY

Having a high SES is connected to sedentary lifestyle,

"a tax adviser for Pepsi and obviously a very sedentary lifestyle and gained a hell of a lot of weight" BRIAN

It was extrinsic life pressures that stopped people being active,

"they go to school and stop sport altogether when they start work" SIMON

All trainers believed they were strong communicators and the initial consultation with a new client was seen as a key moment in the relationship. Assessment was covered in a number of ways including PARQ, health and lifestyle factor questionnaires. This paperwork/administration method of assessment was a tick box exercise for many trainers. It was suggested that clients could not be trusted to be truthful initially.

"a lot of people will sort of make themselves look bigger than they are and then you start to find out the real truths you know what they have and haven't done" PETE

Others reported also chatting to potential clients to put them at ease. A few used verbal communication as their main communication method, although text messages and email were utilised by a few trainers as a motivation tool.

Talking to clients was thought by far to be the most effective method of achieving clients' success and building trust.

“personal training is quite intimate” PHIL

However, this had a down side; **they all found difficulty distinguishing where the boundaries of the relationship existed.** By seeing clients regularly, conversation often strayed beyond the confines of exercise. Clients talked about their relationship with family, friends and work. Some trainers thought that responding in kind was part of their practice.

“I’m also forthcoming with my own ailments my own experiences that’s when I get more coming out of them when I tell them I’ve done this I done that” PHOEBE

This blurring of ‘expert’ into ‘friend’ in many cases went further and became a professional problem for trainers. In many cases, the degree of intimate knowledge given to trainers made them feel uncomfortable. They called themselves a confidante, friend, therapist, counselor, life coach. Two trainers said they were not trained to do this role. There was also a requirement for them to show sensitivity to client’s affairs and to hold any information they were given in confidence.

“so we hear loads of private stuff that they tell no one else partly because you’re in no way linked to their family or their circle of friends so you’re outside, someone fairly safe to talk to” STEVE

Trainers’ views of social trends in exercise and health promotion was also seen through their own prism. **They assumed that because of their focus on physicality, the entire population was just as aware of health promotion messages as they were** and that everyone knew the link between exercise and good health.

"I know society in general is desperately trying to push exercise I think there is a general shift now people are becoming much more aware more educated so they're taking up exercise, realising the implications of not doing enough exercise or eating poor diet or following a poor lifestyle"

BRIAN

They felt that national sporting events had a big effect on amateur participation and that exercise uptake was linked to new exercise trends.

"a new fad class comes out in January, it promises the earth and then a lot of them do that class whether it's good for them or not and they don't really know what it is they just see someone advertising it that has a body that they want" *BRUCE*

Half of the trainers verbalised their role in client's health change behaviour and felt they did their best to help people. They related a common story that some clients had had previous trainers who had hurt them or put them off, so the interviewees were sensitive to early motivation lapses. In fact motivation skills were seen as another key aspect of the role.

Being a trainer and exercising with the client to help motivation, allowed the trainer to exercise as well. It was important to encourage clients to try new types of physical activity as it was believed that this might give a sense of physicality in the long term. Also to help clients understand why they had unsuccessful experiences.

"so that the next time they are in the same situation they could potentially behave in a different way" *JANE*

It is not always successful.

“I just don't get sometimes some of the things people do to sabotage their progress that's probably the bit I need help with” SIMON

Five trainers related stories of their client's lifecourse history of physical activity, which means that they must discuss previous experiences as part of a normal course of events. They used this knowledge as a moderator for future exercise prescription. As part of these histories, they report many of their middle aged clients have chronic conditions, but as they have no academic knowledge to train them specifically, they put such clients under an 'improve health' banner

Study 1 Summary

- To what extent can 'corporeal dissociation' be identified in middle-aged men and women in a health and fitness context and in which forms?**
- What are middle aged people's perceptions of their adolescence and themselves as exercisers?**
- Can lifecourse links be found between adolescent experience and middle-age activity behaviours**
- Can an understanding of clients' adolescent physical activity experiences be useful for practitioners to encourage exercise adherence in middle age?**

Study 1 findings show that a description of corporeal dissociation comes from practitioners (that is in practice as interaction rather than physical location) as they come to know and work with middle aged clients. Corporeal dissociation, as was reported originally by the researcher was described by trainers, but not

necessarily recognised through contextual connections, it was commonly seen in all the practices to varying degrees except one. It was acknowledged as being established during their clients' school experiences of PE and presented now as a reticence and difficulty in engaging with activities whilst being trained.

Practitioners involved a reflexivity linked to their own value system and school PE experiences when considering clients' needs to reconnect with their physicality. This included practice judgments as to how to reach these goals. Corporeal re-association is reflected as the goal of personal training programmes.

The importance of these findings is that corporeal dissociation is shown to be a shared experience of personal training working with socio-economic groups A,B and C1. A better understanding of this phenomenon may ultimately lead to greater exercise adherence as a more appropriate, bespoke exercise prescription and training approach could be implemented based on the information, not just at a local, but also a national or even international level. It was therefore appropriate to investigate corporeal dissociation further on a national stage.

• Chapter 5 •

Study 2. National survey

Introduction

Study 1 had confirmed that other practitioners in a local geographical area had experience of corporeal dissociation. The next step was to look at middle-aged people nationally, who may or may not interact with fitness instructors, to determine how biographical dispositions of corporeal dissociation develop in the lifecourse. This was tackled in two ways; here, to uncover autobiographical components using a large scale survey and develop a practitioner tool developed from them and secondly, in Chapter 6, by using narrative interviews to consider how the biographical disposition develops through the lifecourse.

From the lifecourse literature on physical activity, adolescence is identified as a significant transition (Hirvensalo and Lintunen, 2011; Mann et al., 2013). In Study two a national survey was undertaken that asked a range of questions concerned with aspects of adolescence. Together with Seligman's (1975) learned helplessness and contemporaneous literature, this method was informed by Alwin's (2012) lifecourse principles of time and place. It asked a range of questions regarding participant responses to structures and relationships from a particular historical time and place, lifespan development – because of the search for elements that might predict later behaviours (and help develop a practitioner tool), and timing, because the respondents were asked to consider their own histories at a particular life stage.

Sample

The sample used in study two was stratified and random, in order to gain '*insight and understanding from a target population*' (Gilbert, 2008, p. 512). A professional marketing research company called 'Shape the Future' (Appendix 1) was employed to identify a large scale sample and to undertake the data collection. They were asked to recruit 800 men and women that reflected the practice client base, being between the ages of 45-65 and who had gone to secondary school aged 11-16 in England and fell within the British National Readership Survey (NRS) of A, B or C1.

These are defined as:

A High managerial, administrative or professional

B Intermediate managerial, administrative or professional

C1 Supervisory, clerical and junior managerial, administrative or professional

(Ipsos Media CT, 2009)

The company uses a panel of people willing to participate. Participants were part of a reward scheme that allotted points based on the estimated time taken to complete the questionnaire. On successful completion, points would be allotted to their account where they could accumulate enough to be converted into spendable vouchers. Completing the questionnaire alone would not generate enough points to obtain a monetary voucher. The company used their own database and a national database owned by a third party organisation, SSI, who are an international 'panel' organisation, that provide respondents to market research companies. Sourcing a sample through a private marketing research company and offering an incentive is not uncommon, especially in health and medical fields as used by Furnham (2009). Mook, Kanagarajah, Maguire, Adak, Dabrera, Waldram, Freeman, Charlett, and Oliver (2016) utilised and evaluated sourcing a sample through a private marketing research company as a method.

They compared the,

'timeliness and cost of using a market research panel as a sampling frame for recruiting controls and capturing data against a control recruitment strategy employed by an outbreak control team as part of a case-control study' (Mook et al. 2016, p2)

and found it may offer useful efficiencies for research, as it allowed for a wide geographical area to be studied with more data collected faster, and although it also showed a substantial cost saving in data collection, it also noted that the Market Research panel had inherent biases. However, overall they concluded that it should be included as a recruitment and data collection tool for epidemiological, self-reported survey work amongst the more established methods. The efficiencies of this method offer advantages for PhD research, which is bounded by registration time constraints.

Recruiting in this manner has meant the researcher, or the research company could not predict who, from the non-probability sampling frame, might respond and the decision to employ a commercial company here reflects Mook's (2016) findings and the pragmatic nature of the process. The sample size was computed to give a margin of error of 3.85% across a national population. The margin of error expresses the maximum expected difference or tolerance interval between a 'true' population parameter and a sample estimate of that parameter and is computed by multiplying the population standard error with a z value of 1.96 for 95% confidence. The margin of error is within the range around the confidence level of 95%. An initial sample size of 1000 was considered but proved expensive and would only have improved the margin of error to 3.1%. It is interesting to note that to obtain a 5% margin of error, only 383 respondents were needed. By more than doubling this number the internal validity of the study was improved.

Data collection

A survey questionnaire was developed through ten iterations before the final was published. The process started with a profiling exercise that had been a job skill of the researcher whilst working in the advertising industry fifteen years previously. From this emerged areas of adolescence that could be developed. A consideration that arose was whether to tackle these areas, thematically or chronologically. A thematic approach was decided on and questions developed around them. In draft 3 categorical questions were added. Draft 4 shows a refining of existing questions and reconsideration of their applicability. Thematic grouping was reappraised in the next two drafts and was informed by lifecourse literature that deals with this lifecourse phase. In draft 7 the survey's purpose was clarified and internal validity and robustness were addressed. Other tests were examined but no single test was found. Therefore, appropriate questions were used and adapted (Table 6) from a range of tests and signifiers that emerged in the literature. Two questions were developed from comments commonly made by practice clients. Draft 8 was sent to the marketing research company and the questionnaire was formatted. An information and informed consent sheet was added to the beginning of the survey with instructions that continuing the survey would mean the respondents gave informed consent. They also had to answer two qualifying questions; to agree that they were aged between 45-65 and were educated between the ages of 11-16 in England. In the final draft, the marketer made constructive suggestions to aid adherence and survey completion. The final draft was published and a pilot test of 45 respondents was undertaken. A full narrative of the development of the questionnaire can be found in Appendix 6.

The survey used a 7 point likert rating and asked for a response of: 'Strongly disagree', 'disagree', 'partly disagree', 'neither agree or disagree', 'partly agree', 'agree' and 'strongly agree' to 63 statements on aspects of the respondents'

home, school and leisure life aged 11-16. 16 demographic questions were also added. The pilot study looked to see if the data generated allowed for appropriate statistical analysis. The final survey was then sent out to respondents. All data were collected within a 2 week period.

It was important that the survey was clear, accessible and understandable to maximise useable data and statistical analysis. Bowling (2005) calls this clarity of questions 'face validity', which she separates from 'content validity' by defining it as a superficial/surface aspect (which does not mean insignificant) of content validity. Content validity here concerned the research vehicle, which was considered for its applicability to measure fully its intended target and whether it was the most effective type of research tool. This is most effectively achieved by using pre-validated questionnaires (Fink, 2006). However, a complete questionnaire suitable for this research question could not be found. Therefore, as is applicable within a bricolage methodology, a bespoke questionnaire was compiled from other validated questionnaires.

The PyschTest database was interrogated as it is a repository for questionnaires used in psychology research. Keywords were used from the existing drafts such as; family, school, youth, education, happiness, physical activity, physical education, anxiety, mathematics, leisure, adolescence, attribution, teachers, diet, body image, failure and friendship amongst others. After examining 124 tests, 32 tests were utilised by directly using questions with no adaptations, others adapted existing statements to closer match test questions and develop statements from text. This also applied to the nature, type and validity of the descriptor outcome measures which came from existing national population surveys. Only one outcome measure was added to the descriptor questions and that was 'Are you an exerciser – yes or no'. This came from consideration of research undertaken at Masters level in which an individual's internal perception of whether they were an

exerciser was considered rather than an external measurement of actual exercise done (Elliott, 2012). Group headings were also optimised to keep language clear, simple and understandable (Blair, Czaja, and Blair, 2014). Table 6 lists all questions, with their source and original form of text. They are colour coded by thematic grouping.

Blue - Questions about your home life when you were aged 11-16

Orange - Questions just about me when I was aged 11-16

Green - Questions about your secondary school age 11-16

Yellow - Questions about your friends and leisure when you were 11-16

Purple – Demographic information

The reference list of questionnaires used can be found in Appendix 8.

Table 6. Final questionnaire - lists all questions, their sources and original form of text.

Question	Validated reference
<i>Questions about your home life when you were aged 11-16</i>	
<i>I felt my mother and father loved me</i>	<i>'I felt my mother and father loved me'</i> (Melchert 1998)
<i>My mother and father would compliment me (say something nice about me)</i>	<i>'My mother and father would compliment me (say something nice about me)'</i> (Melchert 1998)
<i>My mother and father would support and comfort me when I needed it</i>	<i>'My mother and father would support and comfort me when I needed it'</i> (Melchert 1998)
<i>My family had significant financial struggles growing up</i>	<i>My family had significant financial struggles growing up'</i> (Melchert 1998)
<i>My parents made sure I had the right kind of food</i>	<i>'My parents made sure I had the right kind of food'</i> (Melchert 1998)
<i>I got on well with my siblings</i>	<i>'family size has also been shown to be related to control cognitions, such that external locus of control beliefs increase in later-born children as family size increases'</i> (Chorpita, B.E. and Barlow, D.H. 1998)
<i>I was encouraged to explore the world</i>	<i>'parents who are less intrusive and protective and who provide the child with occasions to develop new skills and to explore and manipulate the environment would help cultivate an enhanced sense of control over events'</i> (Chorpita, B.E. and Barlow, D.H. 1998)
<i>Overall my parents had an authoritarian style of parenting</i>	<i>'Overall my parents had an authoritarian style of parenting'</i> (Watt 2007)
<i>My parents overprotected me</i>	<i>'I felt overprotected'</i> (Watt 2007)
<i>My parents encouraged me to be physically active</i>	<i>'How much does your mother/father/guardian encourage you to be physically active'</i> (Savage 2009)
<i>I was happy as a child</i>	<i>'Other children are happier than I'</i> (Reynolds 1978) <i>'I am happy'</i> (Lippsitt 1958)
<i>I used to walk to school</i>	<i>Interview with retired Headmistress – asked what lifestyle elements of adolescent life might have played a role in the development of physicality</i>
<i>I often had seconds at mealtimes</i>	<i>'Dishing up superfluously'</i> (Adachi 2007)
<i>I often ate in-between-meal snacks</i>	<i>'I often eat in-between-meal snacks'</i> (Coker 1990)
<i>I was messy. I didn't know where to begin to clean up papers; I couldn't even begin as it was so overwhelming</i>	<i>'I don't know where to begin to clean up papers; I can't even begin as it is so overwhelming'</i> (Nalavany 2011) <i>'You have a messy room'</i> (Kaslow 1991)
<i>Although my parents didn't play sport, they watched it</i>	<i>Interview with retired Headmistress – asked what lifestyle elements of adolescent life might have played a role in the development of physicality</i>
<i>My parents played sport</i>	<i>Interview with retired Headmistress – asked what lifestyle elements of adolescent life might have played a role in the development of physicality</i>

<i>Questions just about me when I was aged 11-16</i>	
<i>I was a daydreamer</i>	<i>Some people find that they become so involved in a fantasy or daydream that it feels as though it were really happening to them. Circle the number to show what percentage of the time this happens to you' (Carlson and Putman 1986)</i>
<i>Sometimes it felt like my body did not belong to me</i>	<i>'Some people have the experience of feeling that their body does not seem to belong to them. Circle the number to show what percentage of the time this happens to you' (Bernstein Carlson and Putman 1986)</i>
<i>I am able to ignore pain quite well</i>	<i>'Some people find that they sometimes are able to ignore pain. Circle the number to show what percentage of the time this happens to you' Bernstein Carlson and Putman 1986)</i>
<i>I used to talk to myself</i>	<i>'Some people sometimes find that when they are alone they talk out loud to themselves. Circle the number to show what percentage of the time this happens to you' Bernstein Carlson and Putman 1986)</i>
<i>I was bullied</i>	<i>picked on or bullied by other children' (Goodman 1997)</i>
<i>I never told lies</i>	<i>'Often lies or cheats' (Goodman 1997)</i>
<i>I participated in physical activities wherever I could'</i>	<i>'I participate in physical activities wherever I can' (Abbott 2011)</i>
<i>I worried a lot of the time</i>	<i>'I worry about what is going to happen' (Reynolds 1978)</i>
<i>I did not cope well with failure</i>	<i>'when an individual experiences uncertainty about the ability to control outcomes (i.e., "uncertain helplessness"), the resulting affective state is one of "aroused anxiety." If this ostensible lack of control increases (i.e., "certain helplessness"), one experiences a state of "mixed anxiety-depression." Finally, when an individual's sense of control is entirely diminished (i.e., "hopelessness") and there is certainty of a negative outcome' (Chorpita, B.E. and Barlow, D.H. 1998)</i>
<i>I was more confident in my thinking rather than my physical skills</i>	<i>'I feel more competent in my "study skills" than I do in my sport skills' (Dunn 2012)</i>
<i>Food was a comfort</i>	<i>'My eating pattern is related to particular moods' (Coker 1990)</i>
<i>I was overweight as a child</i>	<i>I consider myself to be overweight (Coker 1990)</i>
<i>I was conscious of my body shape</i>	<i>'I am not satisfied with my body shape' (Coker 1990)</i>
<i>I was quite lazy</i>	<i>'I am lazy' (Lipsitt 1958)</i>
<i>I had problems concentrating on tasks</i>	<i>'I have problems concentrating on tasks' (Nalavany 2011)</i>
<i>It was discouraging and frustrating to work harder than others and not see the same results</i>	<i>'It's discouraging and frustrating to work harder than others and not see the same results' (Nalavany 2011)</i>
<i>I was not competitive</i>	<i>common client statement in practice</i>
<i>I was physically clumsy</i>	<i>common client statement in practice</i>

<i>Questions about your secondary school (age 11-16)</i>	
<i>I loved school</i>	<i>loved school'</i> (Lefly 2000)
<i>I thrived on competition at school</i>	<i>'The others can't do as well as me'</i> (Duda and Nicholls 1984)
<i>I got consistently good grades in tests</i>	<i>Have a high grade points average'</i> (Miller 1997)
<i>Learning made me anxious</i>	<i>'Early experience with uncontrollable events may be thought of as a primary pathway to the development of anxiety in that such experience may foster an increased likelihood to process events as not within one's control (i.e., a psychological vulnerability). In this way, it appears that early experience can be disproportionately important in that it weights or colors subsequent experience'</i> (Rotter 1966) (Rotter 1966)
<i>I loved PE at school</i>	<i>Interview with retired Headmistress – asked what lifestyle elements of adolescent life might have played a role in the development of physicality</i>
<i>PE was like bootcamp</i>	<i>'Youth should know that fine character does not come easily but rather, that the great traditions of mankind are wrought out of struggle, sacrifice and suffering. Personal effort not circumstance provides the excellent man'. (Arnold 1968 p111 on physical education)</i>
<i>I was a bit of a joker in school</i>	<i>'I make other people laugh'</i> (Matson 1983)
<i>At school I would strive to be as perfect as possible</i>	<i>'At school I would strive to be as perfect as possible'</i> (Stoeber 2007)
<i>I was good at PE</i>	<i>How good at sport are you'</i> (Parsons 1987)
<i>I found Maths easy</i>	<i>'How good at math are you'</i> (Parsons 1987)
<i>I found English easy</i>	<i>Did you experience difficulty in high school or college English classes'</i> (Lefly 2000)
<i>Art was one of my best subjects</i>	<i>'Art is one of my best subjects'</i> (Vispoel 1993)
<i>I enjoyed myself and had fun in PE</i>	<i>'You enjoy yourself and have fun at practices and meets'</i> (Lewthwaite 1993)
<i>I was often the team captain</i>	<i>'When I do sport it is important to me that I am a leader in the group'</i> (Lee 2008)
<i>I did not get on with the PE teacher</i>	<i>'Adult leaders in this activity (sport) were controlling and manipulative'. (Macdonald 2012)</i>
<i>I wanted my teachers to think of me as a good student</i>	<i>Do teachers think of you as a good student'</i> (Miller 1997)
<i>I was never picked for the team</i>	<i>common client statement in practice</i>

<i>Questions about your friends and leisure when you were 11-16</i>	
<i>I regularly played alone</i>	<i>'He/she prefers being alone than with others' (Wall 2011)</i>
<i>I was sociable</i>	<i>He/she is sociable' (Wall 2011)</i>
<i>I was always the winner</i>	<i>'I'm the best.' (Duda and Nicholls 1984)</i>
<i>I used to compete with my friends</i>	<i>'I can do better than my friends.' (Duda and Nicholls 1984)</i>
<i>I loved reading</i>	<i>'What is your current attitude towards reading' (Lefly 2000)</i>
<i>I had many friends</i>	<i>'I have many friends' (Matson 1983)</i>
<i>In my leisure time, I read, watched TV and did other activities in which I did not move much and did not strain me physically</i>	<i>'In my leisure time, I read, watch TV and do other activities in which I do not move much and do not strain me physically' (Borodulin 2012)</i> <i>'How many mins/hours do you usually spend on an average school/weekend day sitting around doing hobbies and crafts or music lessons/practice' (Hardy 2007)</i>
<i>I visited and borrowed books from the library</i>	<i>'How often do you visit the library to borrow a book for yourself' (Damber 2012)</i>
<i>My friends and I were always dieting</i>	<i>'I often engage in dieting' (Coker 1990)</i>
<i>Outside school hours I liked to do sports or exercise, without any club association</i>	<i>'Outside school hours, how often do you do sports or exercise, without any club association' (Jakobsen 1997)</i>

<i>Demographic information</i>	
<i>What is your age? 40-44 years old 45-49 years old 50-54 years old 55-59 years old 60-65 years old</i>	<i>(Age range of survey as outlined in informed consent)</i>
<i>Are there any children under the age of eighteen years currently living in your household?</i>	<i>(Wellbeing Annual Population Survey)</i>
<i>When you were growing up, how many children lived in your household in total (including you?)</i>	
<i>Are you An only child, Eldest child 2nd child 3rd child 4th child 5th or later</i>	<i>(Wellbeing Annual Population Survey)</i>

<i>child</i>	
<i>What kind of secondary school did you attend?</i>	<i>Market research company's standardized demographic question</i>
<i>What is your gender?</i>	<i>(Wellbeing Annual Population Survey)</i>
<i>Which highest qualification do you have?</i>	<i>(Wellbeing Annual Population Survey)</i>
<i>What is your occupation?</i>	<i>(Wellbeing Annual Population Survey)</i>
<i>Which of these best describes your working status?</i>	<i>Market research company's standardized demographic question</i>
<i>If working, are you self employed?</i>	<i>Market research company's standardized demographic question</i>
<i>What is your marital status?</i>	<i>(Wellbeing Annual Population Survey)</i>
<i>Which of these groups represents your annual household income?</i>	<i>Market research company's standardized demographic question</i>
<i>Are you an Exerciser or non-exerciser</i>	<i>The justification for this comes from my masters study where I found that individuals have personal perspectives of their physical selves as exercisers or non exercisers; this is not dependent on actual physical activity levels but on an internal comparison to a previous lifecourse study.</i>
<i>How many children have you bought up?</i>	
<i>How would you describe your ethnicity?</i>	<i>Market research company's standardized demographic question</i>
<p><i>To what extent are the following statements accurate descriptions of you?</i></p> <p><i>"I didn't like PE at school and haven't done any organized exercise since. In work and leisure I use brain skills rather than physical skills. In fact I use my body as a vehicle to move my head around" (Please indicate by giving a percentage from 0 to 100%)</i></p> <p><i>I liked PE at school and showed ability. I have continued to do sport/exercise off and on throughout my life, as and when family or work demands allow" (Please indicate by giving a percentage from 0 to 100%)</i></p>	<i>The justification for this comes from my masters study where I found that individuals have personal perspectives of their physical selves as exercisers or non exercisers; this is not dependent on actual physical activity levels but on an internal comparison to a previous lifecourse study.</i>

Pilot study

Fink (2006, p. 37) gives a clear outline of the purpose of doing a pilot study and provides a framework from which to integrate the data it produces.

- *Will the survey provide the needed information?*
- *Are certain words or questions redundant or misleading?*
- *Are the questions appropriate for the people who will be surveyed?*
- *Are the procedures standardised?*
- *How consistent is the information obtained from the survey?*

These were considered in the pilot study. The first problem identified came from noticing that of the 50 respondents in the pilot survey, 4 of them had not gone to school in England, therefore making their responses invalid and leaving a pilot sample of 45. The market research company modified the main survey, so that if respondents did not successfully match the qualifying criteria, they would not be able to proceed. This significantly cut down on error and meant a greater number of qualifying respondents answered. The contract with the company was that 800 appropriate respondents were found. The researcher was not told how many completed original respondent surveys were needed to reach this final figure and the fallout rates of inappropriately completed surveys.

Raw data were prepared in Excel and imported into Minitab, which highlighted issues that needed to be addressed for the main survey. These were agreed and amended by the market research survey administrator:

- The questions, 'I was not competitive' and 'I thrived on competition' were considered to be too similar. However, it was decided to keep them both for internal validity. Validity was shown in ANOVA when these two variables (the first inverted) were tested against another created from self-reported activity and inactivity variables (Appendix 12) and produced comparable results.

- Gaps in data where no answer had been given led to a consideration of how to overcome this. The survey was amended by disallowing the respondent to proceed to the next page until an answer to each question had been given.
- 'Income', required total household income rather than income of respondent only. The question was amended to 'total household income' to better reflect the economic level of the home environment.
- Two minor data entry corrections were made – (respondent 223) 5030 was changed to 50 and 30 and (respondent 782) 1000% was changed to 100% as respondents intention was clear but input incorrectly.

The survey's strengths were that the market research company was briefed to access participants over a defined geographical area and that it covered a broad range of themes of adolescent life. Its weaknesses are that the content could not be exhaustive and that a seven point likert rating is not an objective measure of perception. It is however, an accepted data collection method, especially within psychology research (Field, 2013).

Analysing pilot data

The aim of the pilot data analysis was to check that the questionnaire and proposed analysis methods would be effective. Multivariate analysis was the most suitable statistical method to find patterns of components in the data that belong together. Principal component analysis (PCA) is a multivariate test that finds the linear combination of a set of variables that have co-variance. Co-variance means that some parameters operate 'together' either because they are correlated or to identify parameters worth further examination. This variance is described as an 'eigenvalue', and the higher the eigenvalue, the stronger the evidence. The PCA with the highest eigenvalue strength becomes principal component 1 (PC1), the

next PC2 and so on. The initial results were encouraging although the eigenvalues overall were not strong (Table 7, Figure 14).

Table 7. Although eigenvalues of the first 4 PCA's are not high, together they account for a cumulative proportion of over half of the variance.

Principal Component Analysis of all variables

Eigenanalysis of the Correlation Matrix	PC1,	PC2,	PC3,	PC4
Eigenvalue	13.055	11.397	6.931	3.941
Cumulative Proportion	0.204	0.382	0.490	0.552

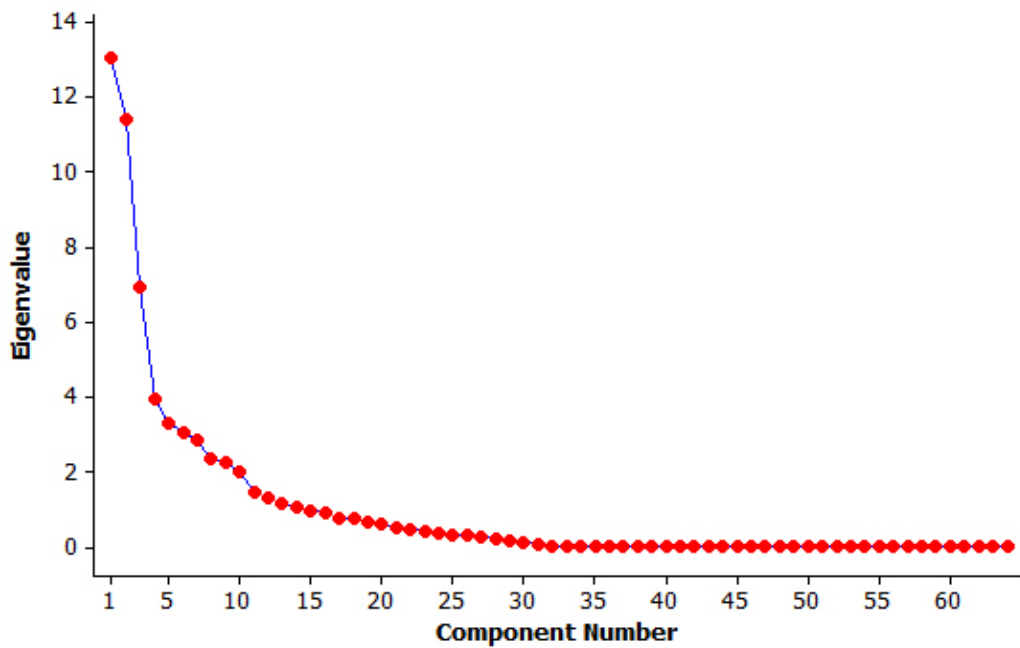


Figure 14. The first 4 PCA's are shown to be the strongest so the remainder were eschewed.

The first 4 principal components were then interrogated to look at their constituent parts (Table 8).

On initial inspection, principal component 1 includes traits expected of 'active people' and principal component 2, of 'inactive people'. Principal component 3 combines traits that together produce a picture of an adolescent who is happy,

confident, concentrates and works hard, got good grades and was literacy orientated, whereas, the third component can be seen as a profile with no bias to either active or inactive. The fourth component might describe an individual who is confident, came from a financially stable background, getting good grades, found academic work easy but did not care about impressing authority figures or being a winner/team captain. So in essence, this participant may have found it easy to achieve but was not too bothered to utilise their skills.

Variable	PC1	PC2	PC3	PC4
father.mother	0.111	0.100	-0.192	0.121
compliment	0.112	0.123	-0.220	0.190
support	0.104	0.125	-0.196	0.178
financial.struggle	-0.042	-0.042	-0.066	-0.273
right.food	0.112	0.099	-0.241	0.142
siblings	0.037	0.120	-0.107	0.183
explore.world	0.108	0.114	-0.192	0.187
authoritarian	-0.027	-0.064	0.038	-0.072
overprotect	-0.054	-0.182	0.013	0.209
encouragePA	0.193	0.043	-0.042	0.148
happy.child	0.158	-0.005	-0.173	0.063
walk.school	0.092	-0.023	0.077	0.207
ate.seconds	-0.154	-0.108	-0.045	-0.138
snacking	-0.042	-0.158	-0.076	-0.171
messy.room	-0.119	-0.159	-0.141	0.105
parents.watched.sport	0.163	0.075	-0.024	-0.013
parents.played	0.164	0.035	0.073	-0.159
daydreamer	-0.083	-0.152	-0.114	0.035
body.didnt.belong	-0.024	-0.217	-0.121	-0.008
ignore.pain	0.077	-0.017	0.043	0.034
talk.myself	0.034	-0.187	-0.023	0.179
bullied	0.053	-0.130	-0.058	0.100
never.lied	0.014	0.078	-0.117	-0.258
didPAwherever	0.214	-0.088	0.118	-0.009
worried	-0.029	-0.180	-0.185	-0.029
failure	-0.072	-0.177	-0.155	0.118
confident.thinking	0.009	-0.199	0.180	0.098
Food.was.comfort	-0.035	-0.155	-0.117	-0.051
overweight	0.071	-0.173	-0.066	0.053
body.shape	-0.041	-0.142	-0.013	-0.062
lazy	0.037	-0.186	0.020	-0.154
concentrating	-0.008	-0.200	-0.218	-0.077
working.hard	0.040	-0.191	-0.163	-0.096
not.competitive	0.081	-0.232	0.019	0.014
physically.clumsy	0.072	-0.196	0.046	0.038
loved.school	0.124	-0.010	-0.186	0.009
thrived.competition	0.216	-0.020	-0.119	-0.030
good.grades	-0.149	-0.052	0.162	0.284
learning.anxious	0.027	-0.153	-0.166	-0.074
lovedPE	0.224	-0.061	0.106	-0.001
PE.bootcamp	0.169	-0.143	0.059	-0.010
was.joker	-0.110	-0.120	-0.130	0.058
perfectionist	0.108	0.108	-0.157	-0.038
good.at.PE	0.227	-0.076	0.090	-0.048
maths.easy	-0.112	-0.059	0.149	0.209
english.easy	-0.114	0.014	0.230	0.136
art.best	-0.102	-0.083	-0.075	-0.133
PEfun	0.229	-0.085	0.050	0.011
team.captain	0.206	-0.035	0.095	-0.175
Peteachernotgood	0.123	-0.152	-0.083	0.007
teachers.impression	0.045	0.111	-0.146	-0.248
picked.team	0.113	-0.195	0.113	-0.025
outside.sport	0.202	-0.036	0.160	-0.049
played.alone	0.124	-0.163	0.015	0.109
sociable	0.171	-0.017	0.055	0.144
winner	0.179	0.089	0.103	-0.158
compete.friends	0.218	0.024	0.061	-0.021
sport.clubs	0.213	-0.023	-0.058	-0.004
reading	-0.022	-0.033	0.178	0.045
many.friends	0.161	0.022	0.068	0.144
inactive.pastimes	0.067	-0.219	0.090	0.035
library	-0.013	-0.096	0.187	-0.062
always.dieting	-0.038	-0.155	-0.124	0.062
active.not.club	0.186	-0.006	0.061	-0.099

Table 8. Correlation scores ranged from 0.00 to 0.284 (+ or -) so variables/traits greater than 0.15, taken as a mid point, were highlighted.

A final question was added to the survey to invite respondents to take part in Study 3 and to leave contact details. All aspects of the pilot study were reconsidered and checked again. Amendments were conveyed to the market research company and the survey was then made public. The final survey can be found in Appendix 7.

A number of potential problems associated with surveys were addressed during the development of the questionnaire and have been mentioned above. Another concern of this type of data collection is discussed by Field (2013, p. 12), self reporting.

'Self report measures will produce larger measurement error because factors other than the one you're trying to measure will influence how people respond to our measures'.

However, he qualifies this by saying that using a larger sample number can offset this by applying the central limit theorem. It is believed that the large sample used in this study will address this. Others concerns are more amorphous and cannot be measured. For example, the survey was released in the week between Christmas and New Year 2014, a time of year when New Year resolutions of weight loss and doing more activity may be foremost in people's intentions. It is not known if the time of year might affect results positively or negatively by perhaps, body weight being at the forefront of thinking after overindulgence in the festive period. However on the positive side, it is a period when more people have time to sit and fill in an online survey.

Data Analysis of survey

Data from 800 fully completed questionnaires were returned as an Excel spreadsheet (where the raw data were 'cleaned up'). Of the 63 Likert rating

questions, 35 had been orientated from positive to negative and the others from negative to positive, in that a positive correlation with increased physical activity was expected to result from the question. Each question was posed to evaluate a parameter that might result in an effect on the perception of physical activity. This had two advantages, firstly that they were as close as possible to the original validated questions and secondly that frequent inversion of statements encouraged greater adherence in respondents, who could not just go down a column giving the same answer without obviously 'spoiling' their survey (Fink, 2006). All were rescored to align in the same direction with a low score being expected to correlate to lower physical activity. As the research question is examining an inactive or active bias in individuals, positive was seen as being physical and negative as being sedentary, however, the strength of correlation is not affected by a positive or negative direction. A third group of questions such as, 'I felt my mother and father loved me' were concerned with the physical and emotional environment that the individual grew up in and positive outcomes of these questions were considered to foster happy environments in which the respondent could have become orientated to active or inactive. It is acknowledged that some decisions made in the polarity of statements have a reflexive element and subject to the researchers own ethical and life perspectives. This was assuaged as much as possible by discussion with supervisors and that the focus of analysis was the strength of correlation rather than their direction.

Data were then transferred to Minitab software and analysed statistically using Principal Component Analysis and ANOVA to identify groupings of characteristics and experiences in active and inactive people

The findings are divided into 7 sections which map the analytic development; finding evidence for corporeal dissociation to producing a practitioner tool from that evidence.

Study 2 Findings

The following list shows all survey questions including those in blue italics that had been reversed in the questionnaire. To align all questions from positive to negative, these questions have been reversed back to aid understanding of the statistical output illustrated in this chapter. This list does not include categorical questions:

HOMELIFE

I felt my mother and father loved me
 My mother and father would compliment me (say something nice about me)
 My mother and father would support and comfort me when I needed it
My family had no financial struggles when I was growing up
 My parents made sure I had the right kind of food
 I got on well with my siblings
 I was encouraged to explore the world
Overall, my parents were not authoritarian
My parents did not overprotect me
 My parents encouraged me to be physically active
 I was happy as a child
 I used to walk to school
I rarely had seconds at mealtimes
I rarely snacked in between meals
My room was tidy rather than messy It was easy to clean up
 Although my parents didn't play sport, they watched it
 My parents played sport

ABRIDGED VARIABLE NAMES

mum.dadlovedme
 compliment
 support
 nofinancial.struggle
 right.food
 siblings
 explore.world
 not.authoritarian
 not.overprotected
 encouragePA
 happy.child
 walk.school
 no.seconds
 no.snacking
 tidy.room
 parents.watched.sport
 parents.played

ABOUT YOU

I was not a daydreamer
It always felt like my body belonged to me
 I was able to ignore pain quite well
I never used to talk to myself
I was never bullied
 I never told lies
 I participated in physical activities wherever I could
I never worried
I coped well with failure
I was more confident in my physical skills rather than my thinking
I did not use food as a comfort
I was not overweight as a child
I was not conscious of my body shape
I was not lazy
I never had problems concentrating on tasks
It was not discouraging and frustrating to work harder than others and not see the same results
I was competitive
I was not physically clumsy

not.daydreamer
 body.belonged
 ignore.pain
 not.talk.myself
 not.bullied
 never.lied
 didPAwherever
 never.worried
 good.with.failure
 moreconfidentPA
 food.not.comfort
 not.overweight
 bodyshape.unconscious
 not.lazy
 good.concentrating
 workhard.ok
 competitive
 not.clumsy

ABOUT SCHOOL

I loved school
 I thrived on competition at school
I got consistently bad grades in tests
Learning did not make me anxious
 I loved PE at school
PE was nothing like bootcamp
I was not a joker in school
 At school I would strive to be as perfect as possible

loved.school
 thrived.competition
 bad.grades
 okwith.learning
 lovedPE
 not.bootcamp
 not.joker
 perfectionist

I was good at PE	good.at.PE
<i>I found Maths hard</i>	maths.hard
<i>I found English hard</i>	english.hard
<i>Art was one of my worst subjects</i>	art.worst
I enjoyed myself and had fun in PE	PEfun
I was often the team captain	team.captain
<i>I got on with the PE teacher</i>	PEteacher.got.on
I wanted my teachers to think of me as a good student	good.teach.impress
<i>I was always picked for the team</i>	picked.team
I played lots of school sport outside of PE classes	outsidePE

ABOUT FRIENDS AND LEISURE

<i>I regularly played with others</i>	played.other
I was sociable	sociable
I was always the winner	winner
I used to compete with my friends	compete.friends
I belonged to lots of clubs like scouts/guides/swimming/gymnastics	sports.clubs
<i>I hated reading</i>	hated.reading
<i>In my leisure time I was less likely to do activities in which I wouldn't move much or strain me physically such as reading or watching TV</i>	active.pastimes
<i>I rarely visited and borrowed books from the library</i>	no.library
<i>My friends and I were never dieting</i>	never.dieting
Outside school hours I liked to do sports or exercise, without any club association	active.not.club

The statistical analysis recorded below follows the systematic investigation of the data in order to answer the research question: **What are middle aged people's perceptions of their adolescence and themselves as exercisers?**

1. Descriptive statistics of dependent variables

An initial exploration and overview of the data used descriptive statistics:

Table 9. As there were 7 question options for each variable, if the answers are random, a mean would be 4. Therefore, those greater than 5 (highlighted in green) and less than 3 (highlighted in red) create two tentative groupings of variables $n = 800$. The groups are shown in Table 10.

Variable	Mean	StDev	Variable	Mean	StDev
mum.dadlovedme	5.7400	1.6661	good.concentrating	4.2512	1.8282
compliment	5.1387	1.8155	workhard.ok	4.6275	1.6590
support	5.3963	1.7587	competitive	3.9875	1.6899
nofinancial.struggle	3.3625	1.8365	not.clumsy	4.3213	1.8302
right.food	5.5062	1.5117	loved.school	3.9200	1.9107
siblings	4.9863	1.5998	thrived.competition	3.6738	1.7539
explore.world	4.4037	1.8514	bad.grades	3.4975	1.7011
not.authoritarian	3.2275	1.6776	okwith.learning	4.4750	1.6264
not.overprotected	4.4713	1.6591	lovedPE	3.7225	2.1175
encouragePA	4.5187	1.6653	not.bootcamp	4.1450	2.0419
happy.child	5.1475	1.7137	not.joker	4.4288	1.7360
walk.school	5.5775	1.8563	perfectionist	4.0137	1.5294
no.seconds	4.0488	1.7827	good.at.PE	3.8000	1.9962
no.snacking	4.2775	1.6451	maths.hard	3.9250	2.0358
tidy.room	5.1563	1.6920	english.hard	2.8638	1.6571
parents.watched.sport	4.0400	1.8849	art.worst	4.7538	2.0027
parents.played	2.7813	1.7958	Pefun	3.8338	2.0968
not.daydreamer	3.8462	1.9280	team.captain	2.7725	1.9132
body.belonged	4.6013	1.5509	PEteacher.got.on	4.4887	1.7948
ignore.pain	4.4387	1.7139	good.teach.impress	4.9075	1.3384
not.talk.myself	3.7850	1.6933	picked.team	4.2938	2.0360
not.bullied	3.9937	1.7536	outsidePE	3.5412	2.1913
never.lied	4.2325	1.6036	played.others	4.0100	1.7794
didPAwherever	4.0538	1.7881	sociable	4.8800	1.4503
never.worried	4.5075	2.0081	winner	3.1525	1.4429
goodwithfailure	3.9962	1.7833	compete.friends	3.8800	1.6051
moreconfidentPA	4.1050	1.7629	sport.clubs	3.5162	1.9136
food.not.comfort	4.6075	1.6672	hated.reading	2.3675	1.6111
not.overweight	4.9325	1.7669	active.pastimes	4.0775	1.8284
bodyshape.unconscious	4.2100	1.8782	no.library	3.0387	1.7843
not.lazy	4.8700	1.7152	never.dieting	5.9650	1.4565
			active.not.club	3.5975	2.028

Table 10. Two groups of variables developed from Table 9

HIGH (>5)	LOW (<3)
mum.dadlovedme	parents.played
compliment	English.hard
support	team.captain
right.food	hated.reading
happy.child	
walk.school	
tidy.room	
never.dieting	

Although Table 10 suggested that overall, most respondents reported a happy home life, it needed clarification and therefore the investigation moved on to multivariate analysis to identify variables that clustered.

2. Principal component analysis

Principal component analysis is a method that seeks to reduce the complexity of large databases with many variables by considering groups of variables that act together (positively or negatively correlated). This is a potential shortcut to facilitate identification of parameters which will then be evaluated in more detail and give further information than that found in the descriptive statistics. The initial PCA test considered the complete sample. Full workings can be found in Appendix 9.

Principal component analysis - whole sample n = 800

	PC1	PC2	PC3	PC4
Eigenvalue	11.183	4.591	4.368	3.051
Cumulative proportion	0.178	0.250	0.320	0.368

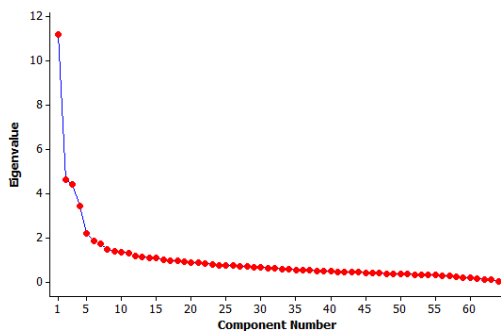


Figure 16. Visualisation of eigenvalues shows the first 4 PC's are strong enough to consider further.

Figure 16 indicates PC1-4 as having the largest variance and being worth investigation. From PC5 onwards there is little difference in variance, therefore, they were discarded. The first four principal components were then examined testing the whole sample of 800 over 63 variables.

Table 11. Correlation scores ranged from 0.00 to 0.307 (+ or -) with only one variable at 0.362 so variables/traits greater than 0.15 (taken as a mid point) were highlighted to identify the most important contributors.

Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.115	0.266	0.217	0.111
compliment	0.131	0.272	0.209	0.120
support	0.131	0.268	0.220	0.126
nofinancial.struggle	0.029	-0.046	0.057	-0.028
right.food	0.115	0.197	0.187	0.113
siblings	0.101	0.176	0.146	0.125
explore.world	0.122	0.213	0.119	0.046
not.authoritarian	-0.003	-0.062	0.072	0.067
not.overprotected	0.036	-0.203	0.051	0.016
encouragePA	0.190	0.132	0.031	0.124
happy.child	0.156	0.213	0.182	0.084
walk.school	0.021	0.079	0.037	0.031
no.seconds	-0.081	-0.190	0.076	-0.087
no.snacking	-0.018	-0.201	0.096	-0.067
tidy.room	0.019	-0.118	0.151	-0.098
parents.watched.sport	0.101	0.126	-0.041	0.060
parents.played	0.097	0.127	-0.082	0.082
not.daydreamer	0.101	-0.121	0.098	0.000
body.belonged	0.034	-0.083	0.129	0.063
ignore.pain	0.163	-0.025	-0.122	0.037
not.talk.myself	0.100	-0.108	0.156	0.036
not.bullied	0.110	-0.070	0.182	-0.011
never.lied	-0.064	0.085	0.052	-0.070
didPAwherever	0.076	0.078	-0.137	-0.025
never.worried	0.078	-0.096	0.188	0.086
goodwithfailure	0.072	-0.117	0.184	0.128
moreconfidentPA	0.096	-0.131	0.046	0.100
food.not.comfort	0.079	-0.141	0.196	-0.097
not.overweight	0.080	-0.136	0.157	-0.067
bodyshape.unconsc	0.124	-0.102	0.047	0.019
not.lazy	0.143	-0.168	0.085	-0.043
good.concentrating	0.090	-0.095	0.131	-0.164
workhard.ok	0.102	-0.089	0.235	-0.044
competitive	0.077	-0.060	0.009	-0.062
not.clumsy	0.095	-0.111	0.123	-0.062
loved.school	0.150	0.046	0.032	-0.241
thrived.competition	0.201	0.038	-0.065	-0.192
bad.grades	-0.100	-0.087	-0.046	0.362
okwith.learning	0.059	-0.138	0.165	-0.145
lovedPE	0.234	-0.060	-0.156	0.047
not.bootcamp	0.160	-0.139	-0.047	0.046
not.joker	-0.078	-0.075	0.104	-0.070
perfectionist	0.064	0.154	-0.062	-0.274
good.at.PE	0.232	-0.071	-0.167	0.025
maths.hard	-0.083	-0.042	0.017	0.194
english.hard	-0.048	-0.087	-0.083	0.298
art.worst	-0.004	-0.083	0.092	0.050
Pefun	0.243	-0.051	-0.148	0.020
team.captain	0.200	-0.008	-0.210	-0.026
PEteacher.got.on	0.149	-0.133	-0.005	0.031
good.teach.impress	0.044	0.120	-0.022	-0.307
picked.team	0.203	-0.136	-0.052	0.013
outsidePE	0.225	-0.051	-0.179	0.064
played.others	0.141	-0.078	0.097	0.042
sociable	0.160	0.044	0.049	-0.041
winner	0.171	0.028	-0.140	-0.070
compete.friends	0.193	0.029	-0.140	-0.051
sport.clubs	0.173	0.012	-0.112	-0.009
hated.reading	0.011	-0.069	-0.101	0.298
active.pastimes	0.147	-0.167	-0.010	0.093
no.library	-0.003	-0.105	-0.044	0.303
never.dieting	0.010	-0.118	0.173	0.030
active.not.club	0.210	-0.021	-0.141	0.062

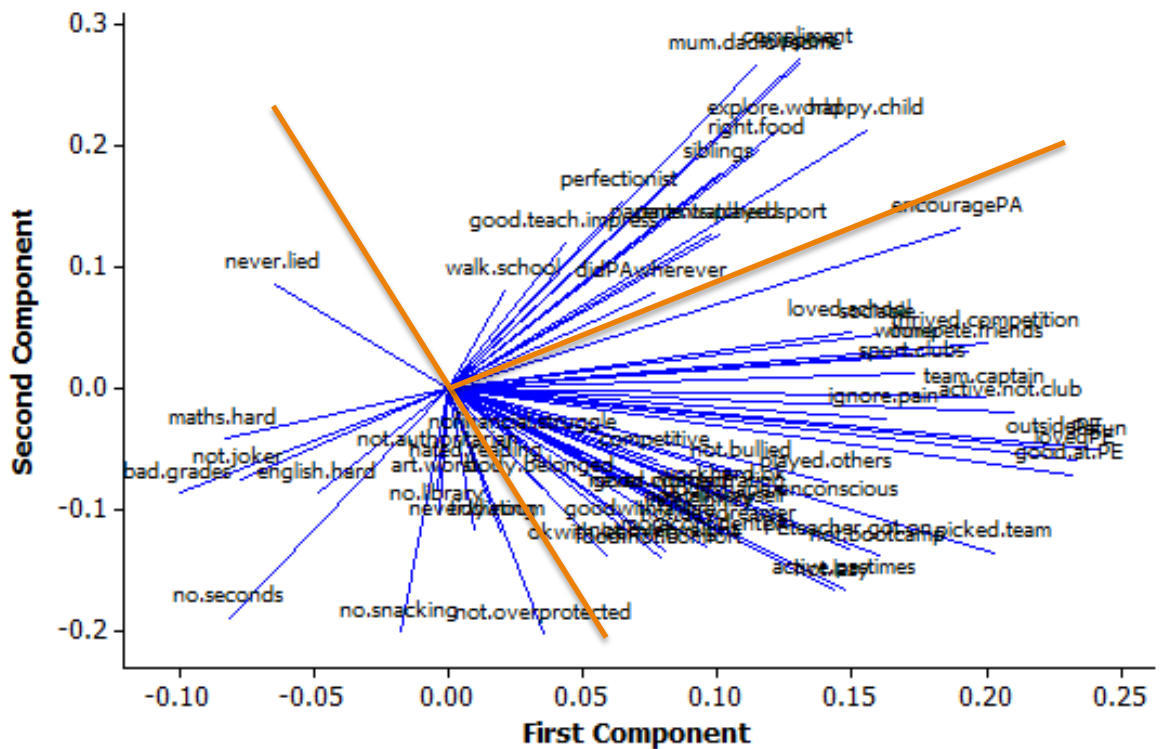


Figure 17. When PC1 v. PC2, 3 clusters appear

PC1 and 2 have discrete variables that suggest clustering in differing parts of the survey. Although not proportionally as strong as in the pilot study, PC1 (17.8%) and PC2 (7.3%) are still distinct and three groupings emerged (Table 11 and Figure 17). 17 of the 63 variables were not included in PC1-4.

Each principal component was then considered individually and variables with scores higher than 0.2 were extracted as having greater internal validity than at 0.15. Groupings began to emerge, although as eigenvalues were low, over-interpretation should be guarded against. It is a feature of PCA that variables showing small statistical significance might have strong power value as determinants when interacting with others (Ellenberg, 2014), in that a group might have a distinct cluster of potentially important variables but they are not seen as important because not many people in the sample have them and the effect on the overall variance is low. So groupings need two elements: the power to

distinguish between parameters and a sufficient number to have effect on the overall variance. In light of this, the descriptors in brackets for each group are therefore tentative at this stage.

PC1

(active)

Thrived on competition at school
 Loved PE at school
 Was good at PE
 Had fun in PE
 Was often the team captain
 Was picked for the team
 Played sport outside PE classes
 Active outside school but not in clubs

PC2

(content home life)

Felt mother and father loved them
 Mother and father would compliment them
 Mother and father would support and comfort them
 Was encouraged to explore the world
 Was overprotected
 Happy as a child
 Snacked between meals

PC3

(content trier)

Felt my mother and father loved them
 Mother and father would compliment them
 Mother and father would support and comfort them
 Worked hard and didn't see immediate results
 Never team captain

PC4

(bad school experience)

Hated school
 Had bad grades
 Not a perfectionist
 English was hard
 Didn't care about teachers impression
 Hated reading
 Didn't go to library

PC1 and PC4 are exclusively about school, whereas PC2 and PC3 are exclusively about home life. PC1 suggests that PE was one of the few ways to have a 'leisured life' in this period. PC1 also shows a positive experience of school, especially PE, whereas, PC4 shows an opposite school experience but it does not include PE. PC2 and PC3 are concerned with home life as a positive experience and PC3 as a positive home experience being a foundation for trying. Only PC1 highlighted PE as relevant. These four groups, active, content home life, content trier and bad experience suggested distinct groups, which were then investigated in more depth.

3. Principal component analysis of men and women as discrete groups.

There were 354 men, 439 women and 7 who preferred not to answer fully, so were removed from this test. Women were considered first followed by men. Traits scoring more than 0.15 were highlighted.

Analysis of women only (Table 12) shows PC1 is made up once again of key active traits (yellow). PC2 has a block of positive traits based around home life and shows negative responses to active traits (green). PC3 (pink) shows a mixed range of traits and PC4 shows a cluster of traits that describe a negative academic experience (dark green). PC1 and PC2 have 5 overlapping variables whereas in the whole population there was only one variable overlapped (Table 10).

Table 12. Women only. Eigenanalysis of the correlation matrix of women PC1-4 accounted for 35.8% of all variance with PC1 covering just under half of that at 17%.

WOMEN ONLY	PC1	PC2	PC3	PC4
Eigenvalue	10.709	4.793	3.915	3.162
Cumulative proportion	0.170	0.246	0.308	0.358

Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.121	0.327	-0.054	0.127
compliment	0.134	0.323	-0.064	0.136
support	0.132	0.334	-0.048	0.133
nofinancial.struggle	0.041	0.010	0.057	0.006
right.food	0.139	0.244	-0.005	0.103
siblings	0.107	0.201	-0.025	0.130
explore.world	0.138	0.219	-0.059	0.034
not.authoritarian	0.010	0.040	0.083	0.089
not.overprotected	0.028	-0.121	0.175	0.055
encouragePA	0.180	0.112	-0.080	0.144
happy.child	0.145	0.285	-0.007	0.099
walk.school	-0.005	0.087	-0.027	0.025
no.seconds	-0.084	-0.074	0.224	-0.053
no.snacking	-0.041	-0.076	0.209	-0.079
tidy.room	0.029	0.008	0.185	-0.087
parents.watched.sport	0.090	0.080	-0.119	0.051
parents.played	0.091	0.033	-0.164	0.123
not.daydreamer	0.088	-0.031	0.142	0.031
body.belonged	0.024	0.050	0.148	0.056
ignore.pain	0.143	-0.100	-0.044	0.026
not.talk.myself	0.087	0.037	0.183	0.075
not.bullied	0.117	0.110	0.192	0.005
never.lied	-0.062	0.078	-0.056	-0.018
didPAwherever	0.089	-0.038	-0.171	-0.070
never.worried	0.075	0.070	0.186	0.101
goodwithfailure	0.069	0.036	0.220	0.106
moreconfidentPA	0.108	-0.095	0.064	0.155
food.not.comfort	0.084	0.024	0.241	-0.028
not.overweight	0.080	-0.010	0.226	0.016
bodyshape.unconscious	0.105	-0.030	0.109	0.052
not.lazy	0.142	-0.088	0.193	-0.025
good.concentrating	0.087	0.035	0.167	-0.183
workhard.ok	0.110	0.115	0.217	-0.055
competitive	0.105	-0.025	0.027	-0.085
not.clumsy	0.089	0.009	0.149	-0.030
loved.school	0.152	0.071	0.040	-0.253
thrived.competition	0.199	-0.010	-0.034	-0.222
bad.grades	-0.103	-0.114	-0.015	0.347
okwith.learning	0.059	0.019	0.229	-0.151
lovedPE	0.231	-0.168	-0.080	0.027
not.bootcamp	0.151	-0.148	0.049	0.049
not.joker	-0.084	0.026	0.126	-0.090
perfectionist	0.052	0.098	-0.148	-0.315
good.at.PE	0.227	-0.188	-0.077	0.020
maths.hard	-0.080	-0.013	0.040	0.190
english.hard	-0.062	-0.127	-0.029	0.274
art.worst	-0.006	0.005	0.091	0.090
Pefun	0.241	-0.166	-0.066	0.007
team.captain	0.210	-0.162	-0.119	-0.026
PEteacher.got.on	0.155	-0.095	0.078	0.035
good.teach.impress	0.037	0.098	-0.080	-0.310
picked.team	0.200	-0.142	0.033	0.032
outsidePE	0.223	-0.171	-0.089	0.050
played.others	0.134	0.034	0.131	0.039
sociable	0.148	0.068	0.040	0.002
winner	0.185	-0.072	-0.096	-0.097
compete.friends	0.192	-0.064	-0.126	-0.093
sport.clubs	0.189	-0.080	-0.097	-0.005
hated.reading	-0.015	-0.119	-0.082	0.220
active.pastimes	0.137	-0.111	0.112	0.114
no.library	-0.027	-0.090	0.015	0.241
never.dieting	-0.006	0.011	0.205	0.037
active.not.club	0.206	-0.100	-0.071	0.060

Table 13. Men only. Eigenanalysis of the correlation matrix of men account for 39.1% of all variance with PC1 covering 18.7%. This is slightly higher than women at 35.8% cumulatively and 17% for PC1.

MEN ONLY	PC1	PC2	PC3	PC4
Eigenvalue	11.760	5.551	4.300	2.998
Cumulative proportion	0.187	0.275	0.343	0.391

Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.106	-0.088	0.332	0.089
compliment	0.124	-0.104	0.335	0.081
support	0.128	-0.094	0.327	0.116
nofinancial.struggle	0.018	0.079	0.005	-0.071
right.food	0.092	-0.064	0.281	0.182
siblings	0.089	-0.064	0.250	0.162
explore.world	0.098	-0.122	0.230	0.037
not.authoritarian	-0.031	0.099	-0.034	-0.030
not.overprotected	0.044	0.191	-0.057	-0.045
encouragePA	0.199	-0.092	0.098	0.091
happy.child	0.169	-0.087	0.240	0.109
walk.school	0.055	-0.043	0.067	0.049
no.seconds	-0.065	0.172	-0.063	-0.063
no.snacking	0.016	0.220	-0.029	0.003
tidy.room	0.019	0.182	0.071	-0.050
parents.watched.sport	0.115	-0.125	0.000	0.074
parents.played	0.101	-0.140	-0.003	0.022
not.daydreamer	0.122	0.155	0.028	0.020
body.belonged	0.037	0.139	0.031	0.026
ignore.pain	0.184	-0.063	-0.122	0.073
not.talk.myself	0.109	0.176	0.055	0.025
not.bullied	0.101	0.161	0.056	0.048
never.lied	-0.068	-0.019	0.121	-0.134
didPAwherever	0.055	-0.118	-0.066	0.003
never.worried	0.074	0.195	0.088	0.075
goodwithfailure	0.062	0.188	0.101	0.137
moreconfidentPA	0.083	0.168	0.013	0.055
food.not.comfort	0.078	0.218	0.095	-0.127
not.overweight	0.081	0.180	0.082	-0.112
bodyshape.unconscious	0.135	0.110	-0.043	-0.088
not.lazy	0.148	0.168	0.011	0.003
good.concentrating	0.097	0.161	0.052	-0.103
workhard.ok	0.086	0.223	0.126	-0.029
competitive	0.037	0.078	-0.051	-0.113
not.clumsy	0.093	0.172	0.043	-0.092
loved.school	0.158	-0.042	0.037	-0.166
thrived.competition	0.198	-0.082	-0.038	-0.179
bad.grades	-0.101	0.054	-0.071	0.378
okwith.learning	0.056	0.197	0.059	-0.138
lovedPE	0.234	-0.032	-0.137	0.069
not.bootcamp	0.170	0.094	-0.082	0.077
not.joker	-0.054	0.135	0.043	0.077
perfectionist	0.090	-0.134	0.013	-0.212
good.at.PE	0.237	-0.032	-0.146	0.044
maths.hard	-0.078	0.041	-0.033	0.320
english.hard	-0.051	0.030	-0.118	0.262
art.worst	-0.006	0.140	0.013	-0.041
Pefun	0.245	-0.048	-0.112	0.046
team.captain	0.190	-0.127	-0.166	-0.012
PEteacher.got.on	0.143	0.114	-0.079	0.081
good.teach.impress	0.065	-0.101	0.034	-0.270
picked.team	0.204	0.102	-0.104	0.005
outsidePE	0.223	-0.064	-0.170	0.057
played.others	0.148	0.115	-0.000	0.109
sociable	0.177	-0.037	0.059	-0.051
winner	0.153	-0.113	-0.112	-0.063
compete.friends	0.191	-0.095	-0.110	-0.097
sport.clubs	0.154	-0.064	-0.073	-0.018
hated.reading	0.006	0.028	-0.143	0.287
active.pastimes	0.151	0.130	-0.128	0.061
no.library	-0.006	0.074	-0.136	0.286
never.dieting	0.013	0.193	0.123	-0.049
active.not.club	0.209	-0.071	-0.152	0.053

Whereas, men only (Table 13) shows PC1 is grouped around key active traits. PC2 centres around intrinsic qualities such as self control and these two groups are discrete. This is further illustrated in Figure 18 where 2 distinct groupings emerge. PC3 shows a strong home bias and PC4 shows a cluster of negative academic environment traits.

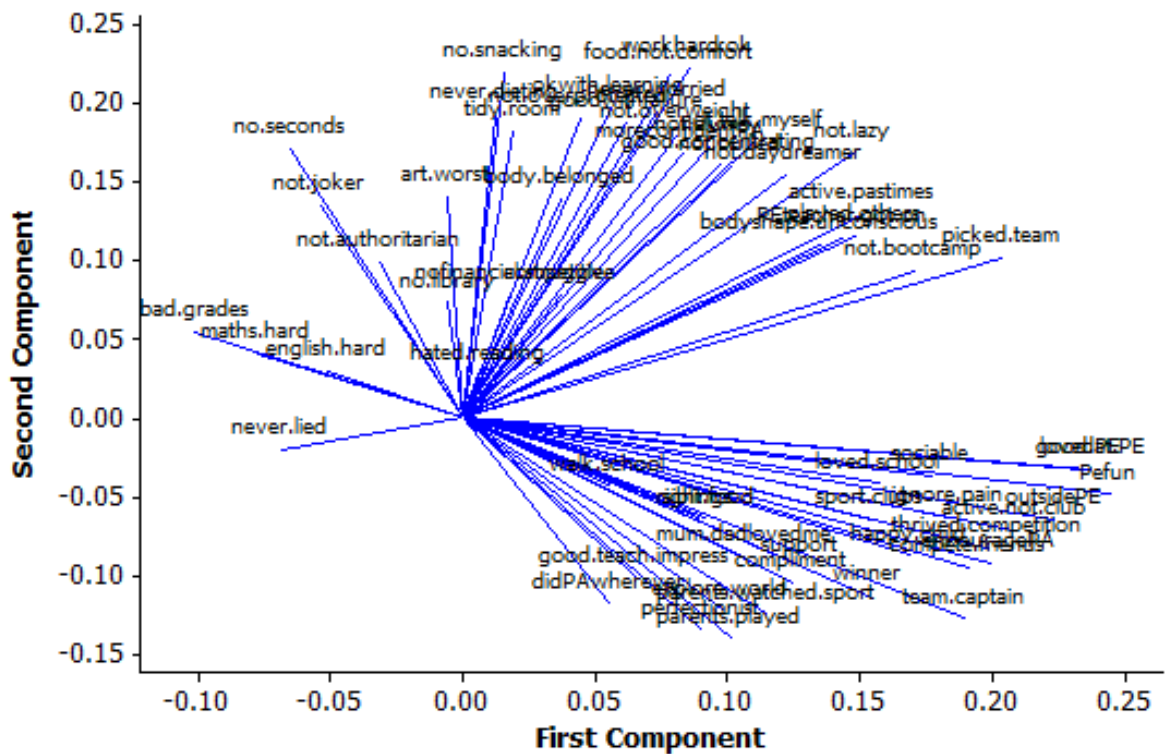


Figure 18. Two distinct clusters emerge from PC1 v. PC2

Men show stronger, clearer trait groups than women in PC1 and PC2. Gender showed some differences. It was then decided to see if questionnaire themes might also show further clarification.

4. Principal component analysis of questionnaire themes

The final PCA test was to consider the four questionnaire themes: homelife, about me, school, friends and leisure. Each was tested with all respondents to see if any one theme showed more differentiation than the others. Reflecting the descriptive statistics, home life showed the overall clearest differentiation. 54.9% of all variance described participants who came from a happy home (PC1, Table 14) with parents who were loving and encouraging. PC1 indicated the importance of home life for encouraging physical activity or sport.

Table 14. Home life. PC1-4 accounted for 54.9% of all variance

HOME LIFE	PC1	PC2	PC3	PC4
Eigenvalue	5.1811	1.6859	1.3090	1.1567
Cumulative	0.305	0.404	0.481	0.549

Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.365	0.151	-0.035	0.112
compliment	0.381	0.128	0.052	0.076
support	0.384	0.144	0.004	0.095
nofinancial.struggle	0.012	0.105	0.324	0.525
right.food	0.311	0.104	-0.222	0.138
siblings	0.272	0.086	-0.162	-0.125
explore.world	0.292	0.048	0.099	-0.066
not.authoritarian	-0.007	0.236	0.548	-0.159
not.overprotected	-0.073	0.317	0.294	-0.565
encouragePA	0.292	-0.005	0.130	-0.124
happy.child	0.349	0.074	-0.036	-0.050
walk.school	0.082	-0.202	-0.386	-0.410
no.seconds	-0.179	0.459	-0.023	0.031
no.snacking	-0.120	0.474	-0.096	-0.035
tidy.room	-0.019	0.427	-0.317	-0.043
parents.watched.sport	0.167	-0.185	0.185	-0.352
parents.played	0.155	-0.230	0.328	0.014

PC2 suggested individuals who were independent emotionally. They highlight not eating seconds, no snacking, having a tidy room and not being overprotected. PC3 and 4 show home finances as being significant and PC4 also showing being overprotected as significant. The relevance of parental interest in sport was

important (Figure 19) with 'parents played' and 'parents watched sport' being in the lowest group.

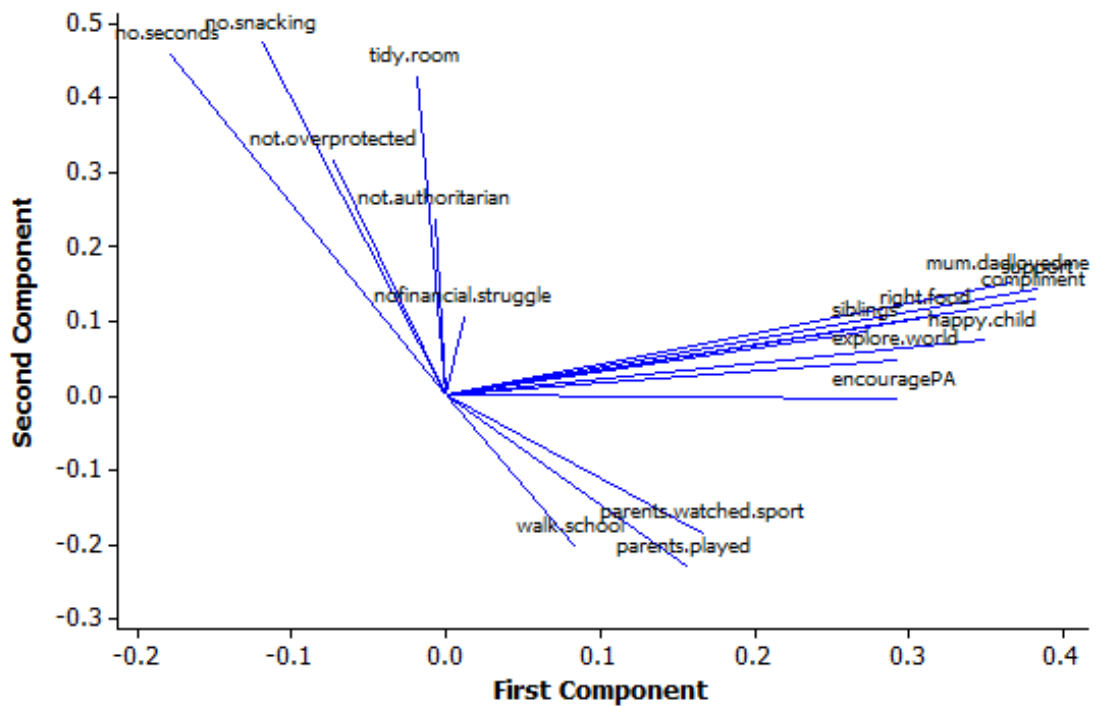


Figure 19. Home life PC1 v. PC2 produces 3 distinct groups of traits, with parents playing and watching sport scoring low.

Principal component analysis findings

Principal component analysis was implemented to find what variables might group together. Tests were done looking at all respondents together, then by gender and finally by theme as found in the survey (Appendix 7). Although eigenvalues in all tests were not high, indicating that a large proportion of the sample was not explained, they were considered strong enough to use as evidence (Field, 2013), especially as similar groupings appeared in whole population and in gender tests.

Table 15. The PC1 across all 3 tests. The same traits that contributed to PC1 at some significant level in 'All', 'Women' and 'Men' can be together named active with minor gender differences

All PC1	Women PC1	Men PC1
encouragePA	encouragePA	encouragePA
happy.child		happy.child
ignore.pain		ignore.pain
loved.school	loved.school	loved.school
thrived.competition	thrived.competition	thrived.competition
lovedPE	lovedPE	lovedPE
not.bootcamp	not.bootcamp	not.bootcamp
good.at.PE	good.at.PE	good.at.PE
PEfun	PEfun	PEfun
team.captain	team.captain	team.captain
	PTteacher.got.on	
picked.team	picked.team	picked.team
outsidePE	outsidePE	outsidePE
sociable		sociable
winner	winner	winner
compete.friends	compete.friends	compete.friends
sport.clubs	sport.clubs	sport.clubs
		active.pastimes
active.not.club	active.not.club	active.not.club

Men reported being happy and being able to ignore pain. They also took part in active pastimes. Women on the other hand got on well with the PE teacher (Table 15).

The other consistent and clear principal component across all three tests shows a bad educational experience (Table 16). Variables such as loved.school with a correlation of -0.245 are notated here as hated school as it is a negative correlation.

Table 16. PC4 variables across all 3 tests are negative variables

All PC4	Women PC4	Men PC4
		right food
		siblings
	physical than mental	
not good at concentrating	not good at concentrating	
hated school	hated school	hated school
not competitive	not competitive	not competitive
had bad grades	had bad grades	had bad grades
not ok with learning	not ok with learning	
not a perfectionist	not a perfectionist	not a perfectionist
maths was hard		maths was hard
english was hard	english was hard	english was hard
bad teachers impression	bad teachers impression	bad teachers impression
hated reading	hated reading	hated reading
not library	not library	not library

Men reported having a good relationship with siblings and eating the right food. They also found maths hard, whereas women did not identify siblings and food as relevant and found learning difficult. Academic attributes added a tiny bit of explanation of variance and physical ones did not appear at all.

PC2 and 3 were less clear cut. PC2 in women and PC3 in men were similar. They both show a grouping of positive variables around home and negative for physical activity. PC1 showed positive elements of parental support whereas PC2 highlighted unfavourable aspects of home life. PC3 and 4 were concerned with living in a financially strained environment with PC4 also highlighting being over protected. This thematic clustering together with the other tests suggests four groups of variables that can be characterised as being: active, having parental support, being intrinsically driven and having bad school experience. These results are a refinement of the first tentative groupings at stage 1. However, the eigenvalues across all the tests were not substantial so the next stage of statistical analysis was to look at difference for further clarification.

It was decided that a useful approach to look at difference and suggested separateness would be to look directly for differences in any of the measured parameters between those that identified themselves as active versus those that saw themselves as particularly inactive. This would give the best possible chance of isolating any parameters that might predict corporeal dissociation.

5. Analysis of respondents' intrinsic views of their active/inactive self

The first task was to derive a basis on which to split the data. The pilot study had shown that variables separated into active and inactive themes, therefore a question was added in which respondents were asked to rate themselves on a 0 -100% scale on two type descriptions based on the pilot PC1 and 2 findings.

This penultimate survey question asked:

To what extent are the following statements accurate descriptions of you?

"I didn't like PE at school and haven't done any organised exercise since. In work and leisure I use brain skills rather than physical skills. In fact I use my body as a vehicle to move my head around"
(Please indicate by giving a percentage from 0 to 100%)

"I liked PE at school and showed ability. I have continued to do sport/exercise off and on throughout my life, as and when family or work demands allow"
(Please indicate by giving a percentage from 0 to 100%)

The percentages given to the two questions by respondents were assessed independently and did not have to equal 100% together. An overall score was derived by subtracting one from the other. Three new category variables were created and labeled: (-100:-95) *active*, (-95:95) *mid range*, (95:100) *inactive* to permit the analysis to focus specifically on the self declared very active and very inactive. The selection criteria thus isolated the top and bottom 5% of the possible range from -100 to +100. The sample divided as follows: the active (group 1) = 84, the mid range (group 2) = 587 and the inactive (group 3) = 82. Those falling into the top 5% (group 1) of the distribution curve represented 11.16% of the sample population and the bottom 5% represented 10.89%. Together they accounted for 22.05% of total respondents which gave a useful group size. The analysis continued using only groups 1 (active) and 3 (inactive).

6. Analysis of difference

The next task was to decide on the most appropriate test of difference.

Preliminary analysis for data distribution was done by an Anderson-Darling test for normality on 63 variables (Appendix 10). Normally, with non normal distribution of data, a non-parametric route would be taken. However, these procedures are less powerful because they use less information in their calculations (Field, 2013). So a parametric, and preferable, route was taken because the central limit theorem states that the larger the sample size, the more approximately the sample means will be normally distributed (the estimate of the mean is normally distributed around the mean). The normal distribution pattern will be achieved as the means of the sample means will be closer to the population means and therefore nearing normal in distribution shape (Dancey and Reidy, 2014; Field, 2013). A sample size of at least 25 observations is sufficient. This survey has 800 observations and was considered large enough to utilise the power of parametric testing (Foster, Diamond, and Jeffries, 2012).

A one-way analysis of variance (ANOVA) was undertaken. ANOVA permits direct comparison of the determinants in means of each category. Here, categories were compared to the independent variable 'self-reported active/inactivity' with 3 groups: *1 = active, 2 = mid range, 3 = inactive as described above*. ANOVA shows any significant differences between the means of independent groups. Each mean has a confidence interval of 95%. Of the 63 variables tested, 23 showed no significance and were discarded. Six variables related to wellbeing, relationships with parents and the world showed a small difference, as did six other variables concerned with intrinsic experiences of school and four variables concerned with academic ability. Eight variables showed a moderate difference. These were related to intrinsic responses and extrinsic relationships with the outside world. Appendix 11 shows findings for these variables that showed no

difference, small difference and moderate difference and Appendix 15 shows interval plots of all variables. The current analysis focuses on the parameters that showed the greatest difference between groups.

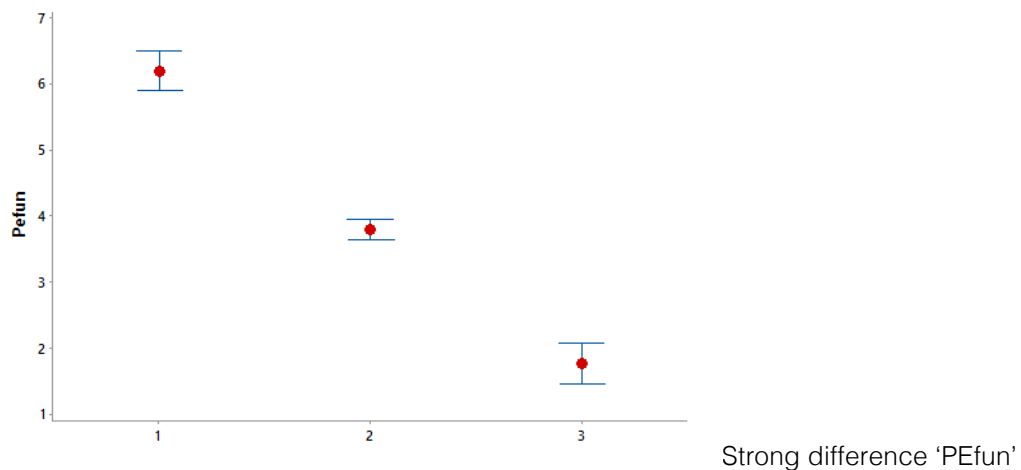
The F value is the ratio of the between group variability and the within group variability. The higher the f value the stronger the difference. Ranking all the variables separates the strongest from the weakest. The variable groups that have been differentiated by size of difference are colour coded (Table 16), to reflect the ranking. blue = group 3 (strong difference), green = group 2 (moderate difference), brown = group 1 (small difference).

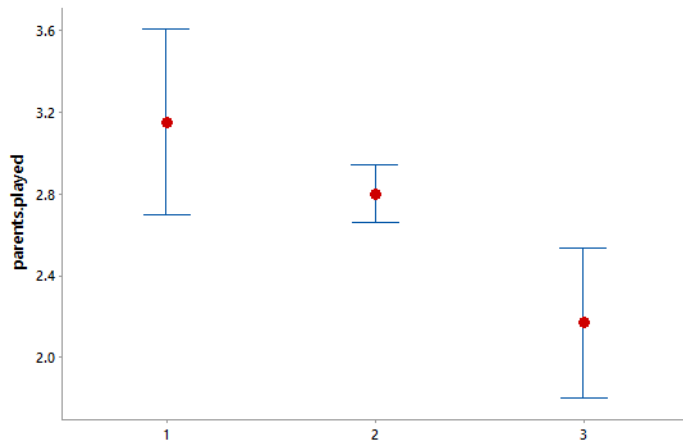
Table 17. F value ranking of all variables

I was good at PE	138.81
I enjoyed myself and had fun in PE	124.71
I loved PE at school	121.76
I played lots of school sport outside of PE classes	101.74
Outside school hours I liked to do sports or exercise, without any club association	82.77
I was often the team captain	74.28
I was able to ignore pain quite well	66.25
I got on with the PE teacher	57.72
I was always picked for the team	52.18
I used to compete with my friends	47.25
PE was nothing like bootcamp	45.84
I thrived on competition at school	45.31
I belonged to lots of clubs like scouts/guides/swimming/gymnastics	43.74
My parents encouraged me to be physically active	41.44
I was always the winner	31.86
In my leisure time I was less likely to do activities in which I wouldn't move much or strain me physically	30.96
I was not lazy	24.49
I was more confident in my physical skills rather than my thinking	20.51
I loved school	18.55
I was not conscious of my body shape	17.73
I never told lies	17.55
I was sociable	14.26
I was happy as a child	12.98
I regularly played with others	10.62
I was not a daydreamer	9.65
Although my parents didn't play sport, they watched it	9.52
I found Maths hard	6.88
My parents played sport	6.74
At school I would strive to be as perfect as possible	6.64
I participated in physical activities wherever I could	6.35
I was competitive	6.34
I wanted my teachers to think of me as a good student	6.12
My mother and father would like compliment me (say something nice about me)	6.08
I rarely snacked in between meal snacks	5.96
I felt my mother and father loved me	5.93
My mother and father would support and comfort me when I needed it	5.61
I coped well with failure	5.60
I got consistently bad grades in tests	4.83
It was not discouraging and frustrating to work harder than others and not see the same results	4.75
I was encouraged to explore the world	4.19
I hated reading	4.04

Tests employed on variables showing a strong difference

The analysis of variables showing strong difference between groups (highlighted above in blue and illustrated in example Figure 20) is shown in Tables 17 and 18 where they are split into those related to PE in school and those outside school. They are ranked by effect size - calculated using eta squared, (dividing the between sum of squares by the total sum of squares). This measures the degree of association in a sample and gives an estimate of the variance. Bias in this test is assuaged by the large sample size. The range for interpretation is >0.01 = small effect, >0.06 = medium effect and >0.14 = large effect. Post hoc Tukey tests (Appendix 14) on each variable checked for significance of difference between the group showing small difference (1) and the group showing strong difference (3). It was used here as it is most suited to pairwise comparison. Finally Cronbach's Alpha was done to measure internal consistency to see how closely variables are related as a group. It is a measure of internal reliability. The higher the results, the stronger the consistency, with 0.7 being an acceptable point of reliability.





Small difference 'parentsplayed'

Figure 20. Illustration that compares a variable with strong difference and one with a small difference

Table 18. Variables related to PE in school

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Tukey adjusted P value between 1-3	Cronbach's Alpha
I was always the winner	2	122.69	61.34	31.86	0.000	0.0783	0.000	0.9285
I thrived on competition at school	2	249.92	124.96	45.31	0.000	0.1078	0.000	0.9277
PE was not like bootcamp	2	338.73	169.37	45.84	0.000	0.1089	0.000	0.9290
I was always picked for the team	2	379.25	189.62	52.18	0.000	0.1221	0.000	0.9256
I got on with the PE teacher	2	324.72	162.36	57.72	0.000	0.1333	0.000	0.9304
I was often the team captain	2	454.73	227.36	74.28	0.000	0.1653	0.000	0.9240
I played lots of school sport outside of PE classes	2	772.10	386.05	101.74	0.000	0.2134	0.000	0.9211
I loved PE at school	2	820.59	410.30	121.76	0.000	0.2351	0.000	0.9206
I enjoyed myself and had fun in PE	2	821.79	410.89	124.71	0.000	0.2495	0.000	0.9197
I was good at PE	2	797.34	398.67	138.81	0.000	0.2701	0.000	0.9207

The active group scored substantially higher on all variables. All variables in this group are connected to physical activity in school with the inactive scoring very low on all. This group of questions covers both intrinsic responses such as 'I loved PE' and extrinsic experience of PE such as 'I was often the team captain'.

Table 18. Variables related to physical activity outside school

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Tukey adjusted P value between 1-3	Cronbach's Alpha
In my leisure time I didn't do activities in which I wouldn't move much or strain me physically such as reading or watching TV	2	192.68	96.34	30.96	0.000	0.0762	0.000	0.9304
My parents encouraged me to be physically active	2	208.75	104.38	41.44	0.000	0.0994	0.000	0.9294
I belonged to lots of clubs like scouts etc.	2	287.89	143.94	43.74	0.000	0.1044	0.000	0.9285
I used to compete with my friends	2	220.20	110.10	47.25	0.000	0.1119	0.000	0.9268
I was able to ignore pain quite well	2	337.87	168.93	66.25	0.000	0.1501	0.000	0.9284
Outside school hours I liked to do sports or exercise, without any club association	2	556.06	278.03	82.77	0.000	0.1808	0.000	0.9242

The eta squared values show all the variables have a medium effect except 'I was able to ignore pain quite well' and 'outside school hours I liked to do sports or exercise, without any club association' have a large effect. Again, this cluster of questions relating to activity outside school covers both intrinsic and extrinsic experiences. Active score very high, inactive score very low.

As the literature in Chapter 2 (pg.'s 41-46) had discussed the flux of the education system and its four very different types of teaching institutions during the 1950-1970s, another test was undertaken to consider the effect of type of schools. The results, which can be found in Appendix 13, found respondents agreed with the literature's themes regarding types of schooling in systemic and academic outcomes in that secondary modern school pupils were poorly served across all facets of school experience including academic and non-academic subjects, grammar school pupils' education focused heavily on academic subjects, comprehensive pupils fared well in academic subjects and public school pupils showed the biggest polarity of experience when compared to the other types of schooling, although this was also the smallest group surveyed and as such, the inference is tentative.

7. Creating the tool

The 16 variables that emerged showing the strongest difference between active and inactive respondents became the basis of the practitioner tool, a scalable client questionnaire. The scale focuses on these 16 most powerful discriminators and component parameters for their predictive and explanatory power with F values that came from the same distribution. As there was a variation in F values, each variable was weighted using the formula $F/\sum F$ (to 2 decimal places) then multiplied by 1-7 dependent on their rating position. As the majority of answers were small numbers, all answers were multiplied by 10 to bring them into numerically positive range for ease of practitioner use (Figure 21). The actual weighted values would be hidden from the client to ease adherence and avoid visual complexity.

Please think back to when you were in secondary school and answer how you feel about each statement between you strongly disagree and you strongly agree

	Strongly disagree						Strongly agree	SUM
I was good at PE	1.2	2.4	3.6	4.8	6	7.2	8.4	
PE was fun	1.1	2.2	3.3	4.4	5.5	6.6	7.7	
I loved PE at school	1.1	2.2	3.3	4.4	5.5	6.6	7.7	
I played school sport outside of PE classes	0.9	1.8	2.7	3.6	4.5	5.4	6.3	
I played sport outside school – not in a club	0.7	1.4	2.1	2.8	3.5	4.2	4.9	
I was often the team captain	0.6	1.2	1.8	2.4	3	3.6	4.2	
I was able to ignore pain	0.5	1	1.5	2	2.5	3	3.5	
I got on with the PE teacher	0.5	1	1.5	2	2.5	3	3.5	
I was always picked for the team	0.4	0.8	1.2	1.6	2	2.4	2.8	
I competed with friends	0.4	0.8	1.2	1.6	2	2.4	2.8	
PE was nothing like bootcamp	0.4	0.8	1.2	1.6	2	2.4	2.8	
I thrived on competition at school	0.4	0.8	1.2	1.6	2	2.4	2.8	
I belonged to lots of external clubs	0.3	0.6	0.9	1.2	1.5	1.8	2.1	
My parents encouraged me to be physically active	0.3	0.6	0.9	1.2	1.5	1.8	2.1	
I was always a winner	0.2	0.4	0.6	0.8	1	1.2	1.4	
I was more likely to do physical activities in leisure time	0.2	0.4	0.6	0.8	1	1.2	1.4	
								Total-



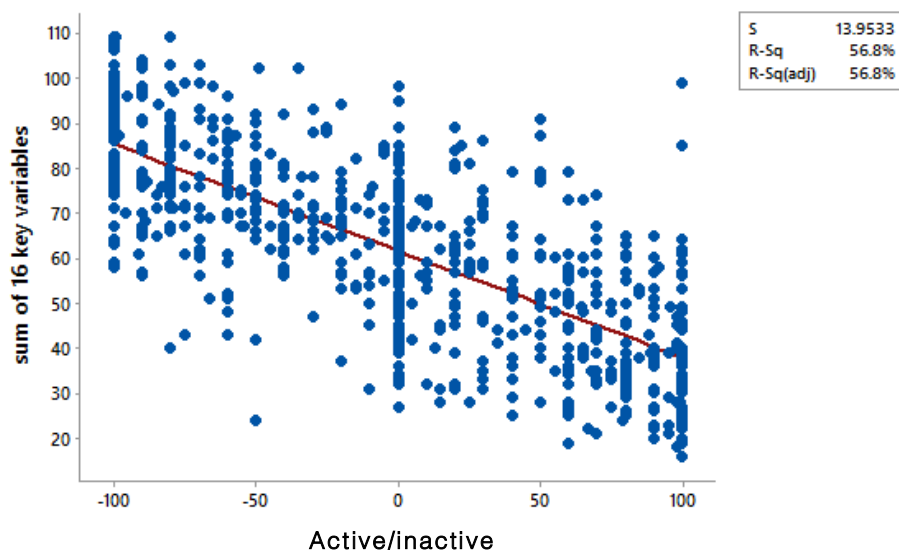
SCALE OF CORPOREAL DISSOCIATION

Figure 21. Tool - A questionnaire that is administered by the personal trainer with the client giving each question a value. The trainer then adds up the weighted response values in grey, and the sum of responses is placed on the scale to ascertain the degree of corporeal dissociation in the client.

Finally tests for internal consistency of the scale across the whole sample were done. Firstly, a Pearson's correlation was used to test the correlation between the

proposed scale (being the sum of all 16 variables across all respondents and the original active-inactive scale). This produced a Pearson's correlation of -0.754, an inverse strong correlation across the whole data set.

The regression equation is $16 \text{ key variables } r = 61.61 - 0.2368 \text{ Active/inactive}$



R squared	F value	P value
56.8%	988.75	0.000

Figure 22. Sensitivity test shows consistency across the respondent population

Finally, regression analysis (Figure 22) showed a consistency of response across the sample. It also illustrated and explained earlier findings in that the population had a tri-modal distribution with clustering at the centre as expected but also at each end of the curve. It showed 'active' scoring highly on the 16 variable and inactive scoring low. Corporeal dissociation correlated to those who perceive themselves as inactive. This test produced a high F value of 988.75, a P value of 0.000 and an r-squared value of 56.8% which is the proportion of variation between the two variables.

The results of these tests were strong enough to accept the practitioner questionnaire as a valid, initial tool to identify corporeal dissociation in clients. This tool will be developed further in future research.

Study 2 Summary

- **To what extent can ‘corporeal dissociation’ be identified in middle-aged men and women in a health and fitness context and in which forms?**
- **What are middle aged people’s perceptions of their adolescence and themselves as exercisers?**
- **Can lifecourse links be found between adolescent experience and middle age activity behaviours**
- **Can an understanding of in/activity typologies be useful for practitioners to encourage exercise adherence in middle age?**

A survey, undertaken by 800 men and women aged 45-65 who had been in secondary education in England, were asked questions that covered four significant areas of adolescent experience including home, school, intrinsic drivers, leisure and friendships. The data were systematically examined, initially through PCA that suggested 4 disposition groupings: Active, content home life, content trier and bad school experience. When gender was investigated, men demonstrated more defined trait groupings than women. Further analysis using ANOVA pinpointed the strongest variables that are the 16 dispositions that underpin a corporeal dissociation disposition. These were then used to create a tool that was tested across the whole data set for internal consistency and found to have a strong inverse correlation. The tool was developed into an initial working model that could be used by practitioners to identify corporeal dissociation in new clients and thereafter, suggest suitable exercise prescription approaches to aid early exercise adherence. Action research in the tool’s development will be done post-doctorally.

These findings have answered the second research question and having identified the biographical dispositions, the next stage was to investigate how they develop through the lifecourse.

• Chapter 6 •

Study 3. Narrative interviews

Introduction

This final study looked to find themes that might link those adolescent experiences found in study two to uptake of exercise in middle-age through the lifecourse to ascertain possible trajectories for corporeal dissociation became established and could affect adult behaviours. Narrative inquiry was chosen as a method because of the ontological position of social construction and the epistemological position that the meaning of events in the life can be known through narratives. The method encompassed all of Alwin's (2012) five principles: human agency, linked lives, time and place, timing and lifespan development and informed by Seligman's (1975) learned helplessness. Narrative inquiry is an accepted way of exploring perceptions of embodiment in physical activity, education, culture and sport (Hunter and Emerald, 2015). It was privileged above other similar methods that take a life history or biographical approach, with an unstructured and broad perspective of lives lived, as it enabled participants to focus and consider their relationship with a facet of their life experience; that of physical activity.

Narrative Inquiry is not a fixed methodology and covers a number of interview methods used to collect oral history, life story, life history and biographies as well as facets or themes of lives-lived (Squire, Andrews, and Tamboukou, 2008). Rather than investigating the wider life stories of participants, this study investigated a facet of lives lived, that of narratives of exercise uptake, that encompassed particular phases in the life course. Unlike other methods such as grounded theory or thematic content analysis, the parameters and processes such as interview length or analytic method are not defined (Wengraf, 2001). Riessman (2008, p. 23) states that, '*narratives come in many forms and sizes, ranging from brief tightly bounded stories told in answer to a single question, to long narratives*'. However, there are principles that need to be adhered to that differentiate it from other more prescribed methods. These include the co-constructed nature of data collection and the temporality of narrative with an interweaving of phenomenological responses to socially constructed events through stories, that even when contradictory, build the narrative (Bruner, 1991). Which of these elements becomes the analytic emphasis is dependent on the focus of the researcher (Squire et al., 2008). Narrative interviewing has been used here to understand how the specific events of adolescence are experienced in relation to uptake of exercise in middle age. Because the focus is in these events it is not possible to reconstruct an oral history, life history or life story and does not claim to do so. The claim is that using narrative interviews enabled the third research question to be answered. It uses the method as the best 'tool' to answer the third research question, can lifecourse links be found between adolescent experience and middle-age activity behaviours?

In narrative inquiry, the participant tells their own story, '*It has been depicted as documenting the inner experience of individuals, how they interpret, understand and define the world around them*' (Bryman, 2008, p. 440). It also highlights how personal lives are pragmatic, with a progression of tacit and non-reflexive

decisions that build on each other to modify perceptions, as explained by the 'cumulative model' (Heikkinen, 2011), and are bounded by personal and institutional interactions (Duncan, 2011). The strength of narratives is held within the importance experiences are to the individual, rather than narratives being objective replays of historical events. Narrative differs from other interview methods in that it incorporates temporality by acknowledging the influence of historical events on later decision making. Time passing becomes an inherent, structural element of the narrative rather than there being discrete stages of life (Floyd, 2012).

Lifecourse narrative is a dynamic, relational construct where external social and personal internal worlds interplay. *'Meaning is fluid and contextual, not fixed and universal'* (Riessman, 1993, p. 15). The telling of a narrative is layered with social meaning that might include wanting to give a particular impression to the listener for example, of power, of sympathy of mutual aims or amenable friendliness dependent on the social context of the telling (Turk and Mrozowicki, 2013). Dowling and Garrett (2015) discuss narrative in terms of 'big stories' which might be rehearsed, outlining what is exceptional (rather than ordinary), that stands out (over fitting in), whereas it is the middle sized and small stories within that might hold a contradictory, multiplicity of narratives.

Riessman (1993) discusses five representations of experience: Beginning with the primary experience, firstly, there is 'attending to experience' in which the individual is conscious of the experience, followed by 'narration of experience' in which the event, related as a past event, is given meaning by the teller. This provides for a deeply reflexive account by the teller that is then further filtrated by 'transcribing the experience' in which the narrative is 'fixed' by recording it, 'analysing the experience' where the researcher reorders and filtrates information to create a metastory and finally reading the experience, where the reader will be

interpreting the data through their own perspective. The respondent, researcher and reader co-construct the information.

In the telling of events in the life, narrative may be fragmented. Priorities and values might bring events to the fore and out of chronology, the dynamic of how something is told might reflect how the event is perceived. So it is not just about the content (ideational) but also the way it is said (textual) and its role between the teller and listener (interpersonal) (Riessman, 1993; Squire et al., 2008). In narrative inquiry, truth is not objective or observed. Narratives can only reach 'verisimilitude', tell us about events that happened and how the narrator interpreted them from multiple personal perspectives, their 'beliefs, desires, theories and values' (Bruner, 1991), *the focus is not on factual accuracy...but on the meaning it has to the respondent*' (Floyd, 2012, p. 225), the relevance being that the summation of the lifecourse activities are having a present and future decision making effect on individuals, which in turn has an effect on physical health. Murray (2000) codifies this process into four levels of narrative within health psychology; the personal, interpersonal, positional and societal, and suggests that they should not be thought of as 'levels of reality' but as 'levels of analysis'. This stance has been taken in this study and used within Fraser's (2004) process framework

'Our own lives are eventually converted into more or less coherent autobiographies centred around a self acting more or less purposefully in a social world' (Bruner, 1991, p. 18).

The Investigative Process

The actual research actions and process for this study were informed by Fraser (2004) who offers a workable framework for using narrative inquiry as a method.

She breaks a linear process down into seven stages with a reflexive period beforehand. Although each phase is prescriptive with a number of questions posed to the researcher to consider the workings of that particular study, she explains that it is a framework rather than a recipe where each step must be followed rigorously. Here, the researcher is encouraged to use or eschew steps as appropriate to the research being undertaken.

'As I have suggested earlier, narrative analysts may be likened to chefs who do not feel the need to adhere to recipes' (Fraser, 2004, p. 197)

The initial considerations are around preparing for the interviews, such as being mindful of 'mining' for information rather than cross examining participants, considering the researchers 'investment', using a 'conversational' style as opposed to an 'interview' style to collect data, allowing participants to ask questions and how a suitable response might sound. Fraser's framework contains the following phases:

Phase 1. Interviews. Fraser asks the researcher to reflect on the efficacy of the questions or prompts that have been developed and to undertake the interviews.

Phase 2. Transcribing. Again she asks a number of reflective questions about the researcher role in transcribing data successfully. She encourages the researcher to do it themselves to become fully familiar with it.

Phase 3. Interpreting individual texts. This involves considering each transcript separately, interpreting stories, contradictions, specificities, themes, vocalisation, identifying transitions and chunking a long narrative into smaller stories.

Phase 4. Scanning across different domains of experience within all texts. Here she suggests looking at themes or 'domains of experience' that cross the lives. They might be experiences, transition points, events that may happen at the same chronological ages or may not, courses of action or stories that show similarity.

Phase 5. Linking the personal with the political. This considers a political context to the work if it is part of the methodology.

Phase 6. Looking for commonalities and differences. Here narratives compared and thematic comparisons made which can include patterns or plots for extrinsic or intrinsic factors and can involve any facet of the transcripts including 'content, style and tone'.

Phase 7. Writing academic narratives about personal stories.

Finally, rather than saying how writing up should be, Fraser asks the researcher a number of reflexive questions that challenge what has been finally formulated to be 'fair' interpretations. Are arguments repetitive, respectful, too apologetic, suffering from researchers 'blind spots' and are the findings relevant to the research questions?

Fraser's (2004) framework supports and allows for systematic consideration of both individual narratives and comparisons across multiple narratives, offering rigour within an interpretivist approach.

Sample

This study focuses on a cohort of people, a particular generation that went through a particular set of environmental experiences that made them react in particular ways with particular outcomes (Bryman, 2008). They were middle-aged men and women who went to secondary school in England in the 1950s – 1970s. The last question in the previous study 2 survey, asked respondents if they would agree to take part in a telephone interview (Appendix 7). If so, they were requested to leave their name, email and contact phone number. Of the 800 respondents, 326 included their name, of which 325 included their email address, and 298 also provided their contact telephone number. From these, the market research company extracted all respondents who had answered 100% as a self-

descriptor as an active or inactive person (Appendix 7 – penultimate question), which gave a potential purposive and homogenous sample of 44. Baker and Edwards (2012) discuss how it is impossible to know at the beginning of a study how many participants will be needed as this is determined by a number of factors including success of data collecting and the type of analysis undertaken. This reflects Sandelowski (1995) who, when considering how big qualitative sample sizes should be says, 'neither too small nor too large' for the intended project which reflects this problematic nature of qualitative sampling. However, for homogenous or critical case sampling she suggests around 10 and Morse (1994) suggests about 6 participants for methods looking at the 'essence of experiences'. An initial determination of 8 participants was made consisting of 4 males and 4 females. This would constitute approximately 20% of the eligible respondents but as the literature suggests a fluidity in need, it was decided to have an initial contact list of 16 (8 males and 8 female) in case any participants dropped out of the research at any stage or more were thought to be needed for further analysis purposes. So from the list of 44 possible participants, the market researcher was asked to choose, 4 females and 4 males who had identified themselves as having active profiles and 4 females and 4 males who had identified themselves as having inactive profiles. Participants on this list were the base sample for study 3. The final sample included 5 individuals from this list and 3 further came from the reserve list. Of the 8 people spoken to, only one did not marry.

Pilot test and data generation

Narrative interviews were undertaken using a computer internet telephone. According to Holt (2010) there is an assumption that telephone interviewing is commonly associated with structured and semi-structured interviews and that

face to face interviews are the most appropriate method to conduct narrative data collection. Detractors point to the lack of non verbal information and that telephone interviews can be shorter than face to face (Irvine, 2011). However, Drabble, Trocki, Salcedo, Walker, and Korcha (2016) suggest there is enough evidence to reappraise this view. This includes its ability to access participants across a wide geographical area; reduced costs; safety considerations of both the researcher and the researched; the participants perceived anonymity and its corresponding safe space for discussion of sensitive topics; its underplay of researcher and researched ethnicity and socio-economic status unless identified; participants control over time of interview, location and their privacy when speaking; an extension of a common and comfortable form of communication for many (Drabble et al., 2016; Hanna, 2012; Holt, 2010) and it offers the opportunity to collect data using a more informal conversational manner (Kvale, 1996). It is suggested that because of these points it may be more favourable than the face-to-face method. It was noted as a usual form of narrative communication for counseling practices such as the Samaritans and its success universally acknowledged as relying on the ability of the researcher to establish a rapport.

An invitation to participate and consent form was sent to each participant, eight in all (Appendix 16) and an appointment to talk at an appropriate time was made. The respondents were called using Apple Facetime on iMac. Two numbers were unobtainable and one caller seemed confused and was not pressed further. All other calls were successful. The interviews were recorded using ECAMM Call Recorder for Facetime and lasted approximately 30 minutes each with the longest lasting 50 minutes. Hanna (2012) notes using internet telephone software to collect data is a good option to a standard telephone line as it is lower in cost, easily accessible, and offers the option of either recordable audio or video dependent on the software used. As this is a dynamic area of internet development the technology is not completely dependable but improves each

time it is revised. Interviewees were told at the beginning they were being recorded, that information would be anonymised and asked to give verbal informed consent to taking part. When they had given verbal consent, the interview commenced. Eight interviews were undertaken within three weeks of each other: two male 'actives' and two male 'inactives', two female 'actives' and two female 'inactives'.

The first interview was a pilot test. The prompts (Figure 23) had been developed from the first phase of Fraser's (2004) framework, where she poses a number of questions that act as 'checks and balances' for the researcher's draft prompts. In this case, it had meant reducing formulated questions to areas or topics that had been informed by the national survey. When applied in the pilot test, these prompts worked well as a structure for the conversation, were not rigid and could be applied, even if the participants narration was not chronological. It was important to remember which life stages had been covered, to bring up a missed topic when the narrator's stories had come to an end. It was also more successful to find a link between the recent narrative and the new topic. The pilot was useful as a rehearsal for the researcher to become aware of possible reflexive pitfalls, to be conscious of the conversation and to try different approaches to encourage trust to gain momentum in recollections. Interviewees were encouraged to tell their own story with their own priorities and chronology. The approach was conversational and non-threatening at first with the interviewer's input reducing as the interviewee became more comfortable and confident, with occasional prompts from the interviewer when thought necessary to continue the narrative.

Thank you for agreeing to take part. I really want to know about your experiences and thoughts about physical activity starting with when you were in secondary school, aged 11-16 and from then on till now.

LOOK FOR possible transitions that might affect relationship with PA:

Doing PE at school

Friends/leisure

Getting married

Having children/grandchildren

Work/career

Negative big events

Ask if attitudes to activity have changed over the years.

At end: If you think about your whole life, can you think of any themes that have been constant or appeared on and off throughout.

Figure 23. Narrative interview prompts

After reflection on the degrees of success or failure of the approaches taken to elicit narrative, the modifications to such reflexive elements in proceeding interviews were nuanced. The remaining seven interviews were then conducted. Success was based on the extent to which a participant felt comfortable to tell their narrative with only the occasional prompt.

Study 3 Findings

Analysing the narratives

Each MP4 interview was transcribed into galley copy in Microsoft Word and transferred into MaxQDA software. Analysis followed Fraser's (2004) framework phases 3 to 6. The majority of analysis was, as Fraser suggests, done manually and complemented by mechanical analysis via the MaxQDA software when appropriate. Floyd (2012) says that there is no right or wrong way to do narrative analysis, but that it must have an association with previous knowledge or concepts, which sits within Alwin's (2012) principle of timing. However, Floyd's views were thought too vague here so Fraser's (2004) framework was followed (with the exception of phase 5) as it offered a specific, progressive pathway of analytic protocols. A sample narrative can be found in Appendix 17.

The study looked at narratives told by individuals looking back over their lives: reconstructions of events that had been modified along the lifecourse because of internal value systems and external relational and organizational influences. Their present viewpoint is a summation of the meaning of experiences rather than a direct link to a previous reality (Riessman, 2001). It is not factual accuracy of life stories that has been sought but its relevance to the narrator (Floyd, 2012).

Eight middle-aged individuals (2 active females, 2 inactive females, 2 active males and 2 inactive males) from across England were asked to narrate their experiences and perceptions of physical activity throughout their lifecourse. The data are considered from vertical/discrete and horizontal/comparative modes to build a picture of evidence of drivers for behaviours that range from adolescence to middle age. This also incorporated participants' present perspectives of both

their own health and fitness and also contained their sense of the wider, national picture and efforts government makes to improve matters.

The analysis was done in phases using the framework outlined in Fraser (2004). Her guidelines have been followed to best answer the research question, which she encourages and acknowledges is an appropriate way to use the framework. The process undertaken with its results will be described here in the order Fraser suggests. Directionality of findings is shown in Figure 24. Initially, individual texts were interpreted and major lifecourse phases were identified that are common to all narratives (Fraser's phase 3). Then narratives were considered as parallel, vertical events (Fraser's phase 4). Next, thematic similarities and differences were viewed horizontally across all stories (Fraser's phase 5) and finally focused down on research question solutions by looking across all events (Fraser's phase 6).

The following abbreviations identify physical activity status.

A = active

I = inactive

M = male

F = female

1, 2 = numeric

i.e IF2 = inactive female 2

Each participant has been given a pseudonym.

<i>IM1</i>	<i>Roy</i>	<i>IF1</i>	<i>Sue</i>	<i>AM1</i>	<i>Tom</i>	<i>AF1</i>	<i>Pat</i>
<i>IM2</i>	<i>Fred</i>	<i>IF2</i>	<i>Jan</i>	<i>AM2</i>	<i>Guy</i>	<i>AF2</i>	<i>Tina</i>

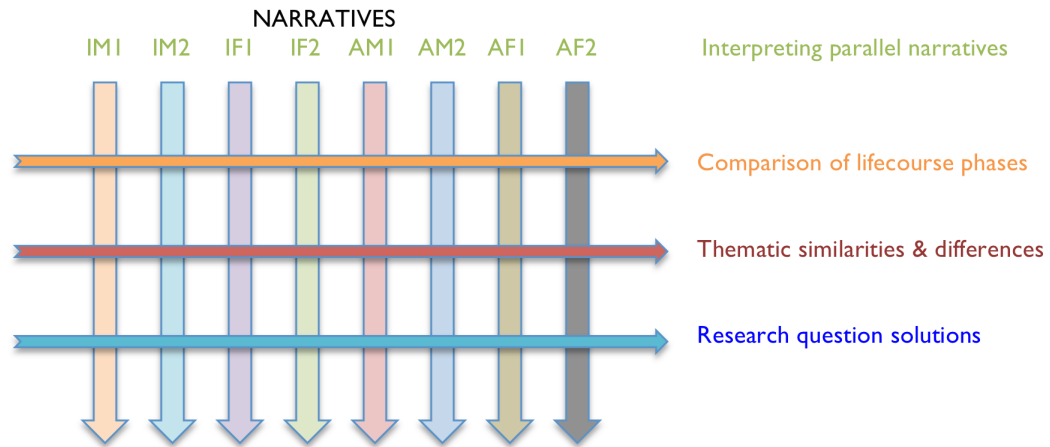


Figure 24. Diagram of directions of modes of analysis.

Interpreting individual narratives

This first stage, 'The Narratives' (Figure 25, p175) allows for consideration of what is said and how it is said. It is not meant as formal discourse analysis but an impression of themes and vocalisations (Fraser, 2004). Whilst analysing the set of life stories, the following general observations were made:

- 1) Narrators commonly refer back and forward through their lifecourse whilst relating a chronological tale. Recounting past events produces links that are triggered by memories from different points in the lifecourse. There are numerous smaller stories that sit within the larger that overlap thematically, however, the largest overriding story still has a forward time trajectory (Dowling and Garrett, 2015).
- 2) People did not seem to worry about admitting they were lazy in regard to physical activity and any possible negative inferences it brings when they would not in other aspects of life.
- 3) All narrators spoke about and broke their lifecourse down into the same phases that did not necessarily happen at the same chronological ages:
 - secondary school
 - events around first job (the immediate time after school did not appear)

- marriage and child rearing young children (rearing older children was only discussed by one narrator)
- early middle age that seemed to be when children had left home or other caring commitments were no longer their responsibility
- immediate past

4) Narrators frequently showed ownership of their story by using the first person, but this was not constant. The second or third person appeared at moments of pain or guilt, occasionally events became completely detached and externalised.

The narratives

IM1. ROY (MALE. AGE RANGE 60-65) I come from a background in which PA was not encouraged and I see myself as quite a nervous person. I hated PE at school and thought the PE teachers saw me as a 'dead loss'. That was normal and we were hit as a matter of course. At university, I took up squash for its socialising but this stopped through a knee injury. In my early work career, I took up sailing, but did not consider it to be exercise because of its sedentary nature. It was my new wife who stopped the sailing because she did not like it and I did no further formal exercise whilst we were rearing our children until I was 45 when I tried cycling. This time it was a chronic disease that halted the activity. I once again became sedentary. Recently, I tried again to do daily gentle walks. Through information I found in a visit to the library, I did a local authority health check with my wife, where we were referred on to the gym. My wife enjoys weekly classes but although I have a personal trainer, I am not enjoying the experience. I think exercise is formal activity to help me do my activities of daily living. Until this conversation, I was unaware of the cyclical nature of my starting and stopping exercise through my life. My general sense of my life is that I have been inactive, and that this started during school. Today, I think I am 'in the middle' (neither active nor inactive), because although I described myself as inactive in the survey, I am doing activity now.

IM2. FRED (MALE. AGE RANGE 45-49) My father was a keen footballer and my grandfather had played football for Yorkshire. I was brought up in a physically and mentally strong male culture. I was very skinny, unable to build muscle and never fitted in or looked like a sportsman. As a young child, I kicked a ball around regularly. Although I enjoyed football, I did not connect with school and constantly 'wagged' lessons (a colloquial descriptor for truanting). I preferred creative subjects such as English and Art but thought school was boring and tranted more and more as I got older. I took up smoking and riding a motor scooter with friends. It was an alternative lifestyle that suited me. These two activities have defined my life and

identity. They are who I am and what I do. It was smoking that stopped me playing amateur football but it was being part of the party life style that went with scooter rallies where my life was 'lived'. All my three wives came from the 'scooter' 'scene' and although I had children they haven't played such an important role in my life. My thin shape means I am healthy because am not obese. I suppose I am have shown my anti-authoritarian defiance by my continuous smoking, even though I understood its links to my present respiratory and skeletal conditions. I suppose my innate creativity and being physically weaker were at odds with my macho environment.

IF1. SUE (FEMALE. AGE RANGE 50-54) (Initially, she was quite monosyllabic and interviewing her felt intrusive and quite different from the other interviews. This improved as the interview progressed, but overall she was guarded and relatively aggressive although it was not made clear as to why she might be so wary. It was thought that perhaps the interview had been unsuccessful and not appropriate for inclusion in this study, however, when the transcript was read, a strong story appeared and it was deemed comprehensive enough to include). I 'absolutely hated' PE at school. I was no good at it and PE teachers made me do things that I couldn't do (she recounts this with vitriol in her voice). My family wasn't sporty and there was no encouragement to be active. I preferred reading, music and more academic subjects such as history. In my 20's I walked for pragmatic reasons and certainly not for leisure. I have no awareness of sport on a national or local scale and not wanting to know is very much a part of my identity. I did try yoga briefly to help me with depression and it did help for about a year. I am married with children and although I taxied them to swimming and karate, I never took part with them. My feeling is that it seems that you put a lot of effort into physical activity and there is no reward for it. My total lack of interest has been a lifecourse constant and started with those bad school experiences and no parental encouragement.

IF2. JAN (FEMALE. AGE RANGE 55-59) I have always been shy. When I was a child, my parents were elderly and they did not encourage me or watch sport themselves. I hated every minute of PE as I didn't have physical or mental confidence. I was the one that hid at the back. I thought the PE teachers were horribly sadistic and were always picking on me to come to the front and perform in front of my class. I was not alone in this, there were a few others treated the same. (When asked if she could identify the difference between her and the pupils that could do it, she refused to answer, as it was "getting too deep"). When I started my first job I joined a keep fit class with friends for the socialising rather than the fitness. I enjoyed the activity because unlike school it 'wasn't regimented'. When I was 28, I started a different job, where I walked a mile to work and back every day for the next 17 years. There was also a second daily trip home for my lunch. I married but never had children. I was unable to do exercise as I was my parents main carer. My life got easier once my parents passed away. My husband is very active and has his own daily fitness regime and has tried to encourage me to start. I am too lazy now to do anything and would only start if the doctor told me to. I think that if PE teachers had been nicer to me, I might have been more interested. In regard to the national picture, I think the majority of people are looking after themselves as I see so many people out jogging each day. I also think that people who love physical activity are taking it to extremes.

AM1. TOM (MALE. AGE RANGE 60-65) The high-point of my life was playing amateur rugby at club and county level. My life has been driven by and centred around playing it. My sporting career started at secondary school, where at the age of 14, I decided sport was for me. I loved PE because I was good at it and was strongly influenced by my teacher who had been an elite rugby player. This teacher was my idol and I remember him with respect and affection. He introduced me to club rugby by taking a small group of us boys to train after school, twice a week. This teacher hit other less able pupils with a slipper, but this was accepted as normal for the time. In my twenties, I became an elite sportsman. There are a lot of differences in participating in sport between then and now, such as finding out I was playing in the first team on the following Saturday by reading it in the line up in the local newspaper. I was also scouted vigorously to become professional but it was not financially viable back then. My social life also rotated around the club. When I was de-selection from the first team, it hit me hard. I think this is partly because sports people often have egos bigger than their ability in order to perform to their limit but I can only see that now. However, I moved across to the veteran team and my perspective gradually changed. I now played for enjoyment and the social life. As I got older and the physicality of the sport took its toll, I became part of the club committee and I also continue to spectate.

I married and had children but I know I didn't do enough with my children and didn't encourage them to be active. My wife also became a rugby widow because my sport took precedence. Eventually we divorced. Very recently, I came out as homosexual and live with my partner. (He did not elaborate on why he became 'wedded' to such a macho sport in light of his repressed sexuality). It would have been impossible to come out earlier in my life. It was not an option for me in the environments I had found myself in and it would have ended my sporting career.

AM2. GUY (MALE. AGE RANGE 45-49) I loved PE at school, was in every school team and captain of most of them. There were fellow pupils that couldn't do PE but 'nobody thought about the feelings of the fat lad'. We had a strong 'us or them' view. I liked my PE teachers but thought they were 'hard taskmasters'. They favoured children that were good at the subject and only tolerated the others who were given little supervision. I both enjoyed the subject and was good at it. I thought the teachers were partisan and motivated me by making me the captain of different teams. In young adulthood I became a semi professional football player for 5 years then played amateur football for the next fifteen years. In 2004, I suffered a cruciate ligament injury in a friendly 5-a-side game. The injury was so bad it halted my sporting activities completely and I found this crushing. Being an active football player was a strong part of my identity and when I stopped playing I had to reappraise everything. (His language when relating this story constantly moved into the third person). I took years to come to terms with it. As well as the physical impact of the injury it also had a social impact. I didn't see my friends so regularly and I was no longer sharing the same experiences. There had been a culture of hard drinking and partying associated with the club and this is where I found my girlfriend. The socialising gradually reduced.

I had difficulty adjusting to a new lifestyle and put on weight. I did not get involved in the committee or become a sports official, such as a referee, because all I wanted to do was play the game. My exercise now consists of long walks, which I do not

count as physical activity as it does not involve cardio-vascular work. However, I do think I am an exerciser because of the amount of walking I do. I believe a constant theme through my life is competitiveness, which started in PE at school and which also played a significant part in my work life. I disagree with the way schools no longer encourage competition as learning to win and lose is character building.

AF1. PAT (FEMALE. AGE RANGE 50-54) I lived in a rural village and like my friends, walked or cycled to school. I enjoyed PE and took part in all activities on offer including Scottish Country Dancing even in bad weather. I didn't do formal after school activities but cycling became a regular form of transport, socialising and 'hidden' exercise. I think people were generally more active in the 1970s. When I started my first job in London I began playing hockey for the firm's team. Again it was the social aspect of the activity that was important. Initially, I got the tube to work but later bought a bike and cycled to and from work. I married a man who was lazy and my activity became sporadic. Under his influence I became unfit and lethargic until he decided to take up running and complete a marathon. I did this with him but didn't like running. We split up in 2012 and are now divorced. We had no children. My present partner is active and encourages me to become healthier (She did not vocalise the pattern in her own behaviour of influences by significant others).

AF2. TINA (FEMALE. AGE RANGE 50-54) I started playing netball at school and have continued to play throughout my whole life and I still play today. My father was a football fan and I used to watch Match of the Day with him each week from the age of 5. I liked PE at school and was good at it. I was a member of all the school teams and got on well with the PE teacher. Whilst at college I was inactive because of the institutional ethos, which did not encourage physical activity, however, when I started my first job, I found a netball club, which I joined with old friends. I married and moved with my husband's job, but always managed to find a netball club to join. He was also a keen footballer so when the children were young, we each had a night off to go and partake in our individual sport whilst the other babysat. We spent time and energy into encouraging the children to be active and we spend a lot of time taking our older children to sporting activities and supporting them. We also hike together regularly as a family.

I still play competitive netball and although I have tried gyms and classes such as Zumba, I find them sterile and uninteresting. I believe if you find something you enjoy then you'll want to keep doing it. I wasn't competitive. I have strong views of the importance of my children being active compared with the views of other parents I see in my education job, who don't blame themselves for their obese children and who constantly write PE absenteeism notes.

Figure 25. Fraser's study 3 – interpreted narratives

Looking for commonalities and differences

The next analytic step makes thematic comparisons across all participants: These can range from patterns and plots to extrinsic or intrinsic factors (Fraser, 2004).

Themes here came from the research question and from the life phases that had previously been identified as emergent in the interpretive study. The themes are: parents, school PE, PE teachers, other pupils in class, post school, marriage, child rearing years, early middle age, recent past, self themes, personal perspective – close to (PA within the narrators personal sphere of influence), personal perspective – away from (PA outside the narrators sphere of influence such as media or government commentary). An overview of the themes by participants is given in Appendix 18.

PARENTS

Table 19. 'parents' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
No interest No encouragement	Dad keen footballer and granddad played for Yorkshire. Father keen for him to box but Mum stopped him.	No interest, No encouragement	Elderly. No encouragement	Kicked a ball round in street. Interest didn't come from parents	Thought all children were active after school hours	Mother never exercised but walked to work every day.	Father big football fan. Watched match of the day with him from age 5.

Social Learning Theory (Bandura, 1977) discusses how behaviour is learned at an early age by watching and modeling from significant others, so growing up in an environment where participation in physical activity as a norm might indicate an active adulthood and an inactive environment might be expected to produce inactive adults. In this small sample of self acknowledged active and inactive people it might therefore, be expected that narrators reflected their parents behaviours. Table 19 is not consistent with this theory. Of the four inactive narrators IM2 came from a sports environment but he lived what he thought was an inactive life, and likewise with the active group, two of the four, AM1 and AF1

did not grow up in sport orientated environments; and so although the parental home might have a bearing on a predisposition for physical activity, it was not strongly evidenced in this sample.

SCHOOL PE

Table 20. 'school PE' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Not very good at it. Decided not for him aged 12	Did not connect with school. Truanted. Played football in leisure time started smoking	Hated it and couldn't do it. Decided not for her aged 11	Hated it. No confidence. Played a little netball Lessons regimented	Loved it. Played in basketball and football team and a good runner and swimmer. Decided he was good aged 14	Loved it. In every school team. Was good at it.	Did all sports except netball. Walked or cycled to school. Cycling was main transport and main leisure exercise	Liked PE. Played all team sports. Particularly netball.

On the other hand, experiences of school PE - either good or bad – are related as a much stronger possible determinant of future lifecourse activity levels with all inactive narrators hating or not liking PE and all active narrators loving or liking PE (Table 20). This organisational influence was more pertinent than others in the lifecourse such as employment where time that might have been spent in leisure activities was taken.

PE TEACHERS

Table 21. 'PE teachers' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Teacher saw him as a 'dead loss'. Only interested in sporty pupils. Teacher hit them	Dismissive as teacher had been rugby player but was brain damaged in sports injury.	Teacher insisted on making her do things she couldn't.	Teacher was "Horrible, sadistic, picked on her"	Teacher was an elite rugby player. Was his idol. Invited him to try out for Colts. Hit pupils who misbehaved	Good but hard taskmasters. They favoured sporty pupils and only tolerated others		Got on well with teachers who were hard on pupils who struggled.

The relationship between the narrators as pupils and their PE teachers shows the strongest evidence for the establishment of future positive or negative attitudes to physical activity (Table 21). In this sample it is unequivocal. Cases of inactivity illuminated the impact of abusive relationships and cases of activity, the antithesis.

AF1 did not speak of any view she had of her teachers but it can be suggested she had a good working relationship with them as she participated in the full range of school physical activities and enjoyed them.

OTHER PUPILS IN CLASS

Table 22. 'other pupils in class' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
1/3 were good, 1/3 liked it but had no talent, 1/3 were like him and had no interest	Started smoking aged 14 peer pressure. Stopped him doing sport	Friends similar to her.	Hid behind the pupils that could do it.	Others brought notes or made excuses	Nobody thought about the feelings of the fat lad who was self conscious and dreaded being there.	All friends had bicycles.	Pupils suffered if they had no aptitude.

When asked about 'others' in their class, active people automatically described inactive, and inactive described active (Table 22). There was a sense of 'us and them' across all cases. Their attitude also appeared to be on a continuum, in that those at the extreme ends of liking or disliking the subject such as AM2 had more extreme views of their opposite number. Those less extreme (AF2) had less extreme views. Only IM1 proffered a considered breakdown of his class.

POST SCHOOL

Table 23. 'post school' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Joined squash club at uni for socialising. Took up sailing – didn't see it as exercise.	Started riding a scooter and joined gang. Went to watch matches with Dad.	Walking for function, not leisure. Tried yoga for depression.	1 st job had group of friends – went to keep fit class together. Socialising and fun. Walked to and from work for next 17 yrs	Highpoint of life playing elite amateur rugby at county level. Rugby club took up most of life, training and socialising. Scouted to turn pro but too low salary. Played squash 2-3 p.m.	Played semi professional football for local club for 15 years. Stopped by knee injury. He stopped all PA.	1 st job at 18 in London. Played hockey for firm – socialising. Initially got tube then bought another bike.	Ethos at college was no sport but whilst in 1 st job joined netball club.

None of the narratives mentioned the period immediately after school but jumped to first job or college. This period in all cases covers ages 19-29. All participants were doing physical activity at this point to some extent, but the emphasis changes. Table 23 shows inactive people were using activity as a vehicle mainly

for socialising and enjoying the activity through comradeship and used it as a fun adjunct to life (IM1, IF2 and IM2). Whereas, the active people placed emphasis on the activity itself and the socialising with others, who were like-minded was a welcome addition and meant the activity became all-encompassing (AM1 and AM2).

MARRIAGE

Table 24. 'marriage' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Wife didn't like sailing so he stopped it.	Met 1 st wife through scooter gang. Divorced. Met 2 nd wife through scooter gang. She was party animal. Split 8 mths ago.	Married	Married. Husband quite active and tried to encourage her to follow a fitness regime	Met his girlfriend at club. Married. Wife became rugby widow. In late middle age, divorced came out as homosexual, lives with partner	Met girlfriend at club	Married a man who was lazy. Exercise became sporadic. Became unfit and lethargic. Divorced	Moved with husbands job. Found new netball club. He was also PA

The social aspects of physical activity have been the route by which half of the cases found their spouses (Table 24). Women's activity levels were strongly influenced by the activity levels of their husbands during the marriage but this is not true of the men.

CHILD REARING YEARS

Table 25. 'child rearing years' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
No PA. His sons are very active because of good school PE experiences.	3 children whom he encouraged to play football. Wife took them swimming.	Thinks she encouraged them. Took them to karate and swimming. She didn't join in.	No children. Cared for parents. Occasional Pilates class but distance curtailed participation.	Didn't encourage his children to do PA. Didn't do enough.	Doesn't mention children at all	No children	2 children by caesarean. Stopped her playing for season. Had independent sporting activities whilst spouse babysat. Has fostered active home environment.

Child rearing years tended to be fallow for physical activity except for the two active males, that were very involved in their sport (Table 25, AM1 and AM2), who

both acknowledged they did not do enough in their children’s upbringing as their focus was on their sporting activities. So child rearing years do not seem to hold any particular meaning for male active cases in relation to the formation of a disposition towards exercise uptake. Encouraging their own children did not reflect their experience from their parents. Here, the inactive participants who had children, related encouraging them to do physical activity (IM2 and IF1) and noted how their children’s school experiences of PE were very different and better from their own (IM1). Of the active people who might be expected to be encouraging, the picture is mixed; AM1 did not encourage his children and AF2 did, which reflects their own upbringing (see parent).

EARLY MIDDLE AGE

Table 25. ‘early middle age’ theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
45 – took up cycling, stopped due to chronic illness	Watched Sky Sports a lot. Had bad diet.		After parents died did no PA.	De-selection from 1 st team was hard. Played in veteran team for 10 yrs for pleasure and social	Did not become sport official after accident but continued to watch.	When husband took up running so did she. Did not like it	Works in Primary school. Did Zumba when P/T but less when F/T

All narrators described this life study (Table 26) to be a period when responsibility for children and caring for others was lifted, and therefore there was a newly found freedom, therefore, it might be thought to be positive. However, none of the cases saw this as an opportunity to re-engage with physical activity. Overall, it seems to have been a rather unfulfilled reflective time. It seems to have been a period of adjustment; either not doing anything like IM2 or trying and failing like IM1 or being reflective like AM2; a time of ‘mid life crisis’ or ‘transition’ (Alwin 2012) in both males and females.

RECENT PAST

Table 27. 'recent past' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Daily strolls. Local Authority health check and joined gym with wife. Doesn't like it.	Started going on scooter rallies again. Not healthy – has osteoporosis and has smoked since school.		No exercise, Called herself lazy. Would only start if GP told her to.	Doesn't participate but sat on committee and watches every game.	Has put on weight and walks but this makes him still consider himself an exerciser.	Current partner is active and encouraged her to be once again. Walks every lunchtime and for leisure.	Husband only watches football now. Still plays netball and family walks in rural setting.

Table 27 shows a period that seems to show a new trajectory after the previous transitional study where reflection is now replaced by action; this might be considered the study in which the phenomenon of corporeal re-association, as originally observed, might be located. Some narrators after a fallow PA time were re-engaging gradually in formal exercise (IM1, AM2, AF1) and are the most telling in terms of societal influences of middle age on exercise uptake. The action here is making a decision to re-engage. Active people had moved to a study of becoming the officials of their respective sports (AM1) and although less active were still associated with their sports.

SELF/LIFE THEMES

Table 28. 'view of self/life themes' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Sees himself in middle, neither exerciser nor non-exerciser. Has pattern of thwarted attempts to PA	Confuses being thin phenotype with being healthy. Smoking and scootering are constants	Her hatred of school sport fostered a lack of interest has stopped her	If teachers had been nice would have changed her attitude. PA has been only functional	Links being active now with playing in park with friends as child and a positive experience at school, being introduced to rugby	Competitiveness. Learning to win and lose builds character. Initial love and encouragement of sport underpinned football career	Liked being active and functional cycling became PA	Loved playing netball at school and still playing today

Narrators' perspectives of their lifecourse of physical activity (Table 28) looking back from their present age are varied and personal to the life lived, yet each had an individual, consistent physical activity theme; these were themes that have

been present from school years to today and are the meaning of exercise in/activity in the life.

AM1, AM2 and AF2 had extremely positive experiences with their PE teachers singling them out for special treatment or introducing them to elite sport, which they had all continued throughout adulthood. AF1 had also enjoyed PE and a leisure adjunct (cycling) became a constant and regular activity throughout the lifecourse. On the otherhand, it was less healthy leisure pursuits that attracted IM2 even though he had relatively engaged in PE at school, but the draw of scootering with peers and thier culturally driven occupation of smoking that became a lifetime theme. It was only IM1 who showed a pattern of 'new beginnings' in exercise followed by failure

In all these cases, the meaning of exercise uptake is propogated in the experience of adolescence and continues through in behaviours to middle age.

PERSONAL PERSPECTIVE – CLOSE TO

Table 29. 'personal perspective-close to' theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Exercise is formal activity, not ACL's	People don't do exercise because they are lazy.	"You put in a lot of effort into PA and there is no reward for it".	People who like PA are taking it to extremes		Exercise has to be cardio. A non-exerciser has to be totally inactive.	Reach point in mid age when action needs to be taken. Sees other children learning bad habits from parents.	'Find something you'll enjoy, then you'll want to do it'. Winning and losing isn't important, enjoyment is.

A number of narrators differentiated exercise as formal activity from functional movement for activities of daily living (Table 29). All participants had a similar view of sedentary individuals as 'couch potatoes' and that's not who they were. The inactive females IF1 and IF2 had reactive, negative views of physical activity whereas inactive males IM1 qualified lack of formal activity by the amount of

functional activity they did. The active narrators had clear views on physical activity, that it needed to be enjoyable (AF2) and cardio vascular (AM2). AF1 talked about her experience of young pupils in her school who already had bad PA habits that were reinforced by their parents. She contrasted this to her own children’s upbringing and attitudes.

PERSONAL PERSPECTIVE – FAR FROM

Table 30. ‘personal perspective-far from’ theme across all narratives

IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
	Didn’t watch Olympics. Too much junk food and not enough education about lifestyle.	Should concentrate on diets not exercise. People need to make up their own mind to participate.	Thinks there are already a lot of people doing exercise because she sees them running each day.		Disagrees with way school no longer encourage competition	Life has got physically much easier and people have got lazier.	80 yr. mother has improved health by taking up walking. Obese children/families at school don’t blame their lifestyle

‘Far from’ perspectives (Table 30) involved views on the wider government responses to physical activity. When asked about a national picture, there was again a wide range of views. Everyone was aware of the looming obesity crisis but thought there were differing reasons for it. There was also a wide range of knowledge and understanding on the issue. IF1 and AM2 believed that diet and food was an individual’s responsibility and should not be dictated by government. This contradicted others views that people would not take responsibility for their health (AF2). Several narrators made comparisons between children growing up now and their own childhood. They all thought their own upbringing and value systems were better than the present generations.

The analysis describes a range of trajectories that do not show a commonality of the body being used as a pedagogical device (Evans et al., 2009) for exercise in middle age.

Pulling together threads

Narrative research is interpretive and produces '*multiple possibilities for representing stories*' (Fraser, 2004, p. 195), therefore, a focus for the inquiry at this stage is required. To this end, key meanings from the narrative analysis are considered in relation to the research question:

Can lifecourse links be found between adolescent experience and middle age activity behaviours?

Corporeal dissociation was embedded in clients' stories of bad secondary school experiences between 1955-1975. The literature evidenced (see Chapter 2) an environment of teaching practice that could have cultivated sharply polar attitudes to physical activity (Arnold, 1968; Gurney, 1989; Scraton, 1986), where PE was a non-examination subject with few subject-trained teachers. The literature produced contemporaneous reports of abusive, aggressive and divisive PE teaching environments dominated by partisan teachers (Arnold, 1968; Central Advisory Council for Education, 1963). It was discussed that such an atmosphere might lead to 'learned helplessness' (Maier and Seligman, 1976) which in turn might lead to a cessation of the activity and a corporeal dissociation. The narratives in this study reflect this picture at an individually experienced level.

At its worst, physical punishment was part of the landscape and accepted as such.

'if you did anything wrong you got whacked and it didn't half hurt, if caught playing up with your PE shorts on and that was all, the slipper yes, I certainly remember that' (AM1) TOM

If corporal punishment was not evident then a harsh regime often was, with humiliation, commonly meted out to pupils with low or no talent.

'oh I thought they were horrible. Because they always wanted the quiet one at the back to come forward and do something so that was always me and that meant I had to come in front of everybody which was my worst nightmare and do something' (IF2) JAN

'if you weren't particularly good at it, they weren't sort of encouraging should we say, you know you were probably made to feel not the best if you came in last or didn't want to do it' (AF2) TINA

Memories of their PE teachers were varied; from idolising,

'he was my idol he was a good runner and athletic wise and that yes, and I think I was a bit of a favourite' (AM1) TOM

To cruel,

'funnily enough he were disabled because he'd had an accident playing rugby, and he got brain damage. He walked funny' (IM2) FRED

To scathing,

'you know that PE teachers are doing it because they probably loved the sport or maybe that was the only thing they were good at' (AF2) TINA

A lack of encouragement was a common complaint amongst inactive participants,

'I think most of the PE teachers just took the view that I was a dead loss and that you just had to turn up and do it really ... I think you are left to get on with it by yourself as best you can, it didn't really feel that I was getting any real encouragement, (IM1) ROY

Whereas active participants told of positive discrimination,

'I think they would have gone out of their way to make sure I was in the school team definitely, in terms of motivating me as I said I was made captain of several teams and you know if that's the motivation it certainly worked' (AM2) GUY

'I just think they were definitely interested in those who were more sporty' (IM1) ROY

It was having showers after classes that exercised both active and inactive narrators,

'We used to spray lots of deodorant, or spray yourself in perfume because well they'd think you'd been in and washed yourself or whatever yeah, no I didn't enjoy those memories of showering' (AF2) TINA

'one (teacher) was pretty rough he used hit you if you didn't change quickly enough' (IM1) ROY

In regards to views of the subject itself, attitudes were again found at extreme ends of the spectrum:

Active participants:

AM1 TOM *'I used to love PE I was in the basketball team and the rugby team at school'*

AM2 GUY *'loved it. I was actually in every school team, captain of many, very sporty very active, always up for it, you name it I did it'*

AF1 PAT *'it was something that I did and enjoyed doing'*

AF2 TINA *'I enjoyed PE at school'*

Active participants reported taking part in all available sporting activity during school and in extra curricula activities. They all represented their school in various teams.

Inactive participants:

IM1 ROY (*let's talk about PE classes*) *'let's not. I used to hate them, to put it quite simply.'*

IM2 FRED *'It were boring for me'*

IF1 SUE *'At school I absolutely loathed PE'*

IF2 JAN *'I hated every minute of it'*

Inactive participants reported reasons such as it being boring, they were too shy or nervous or they just could not do it and got little or no help. When asked what they did like or were good at; English, Art, reading, Music and History were mentioned. In line with findings from the literature, Maths was also disliked and also induced anxious memories in two of the inactive narrators.

An 'us and them' environment in PE was described with those that 'could' being hostile to those that 'couldn't'.

'in my day you had two captains at the front who had to pick the teams ... the fat lad at the end was always the last one chosen for your side. So at the end of the day nobody batted an eyelid for the feelings of the fat lad'
(AM2) GUY

'I think they looked for excuses because some of them wanted to go off and have a smoke somewhere and things like that that I don't think they were interested in trying' (AM1) TOM

So not only were low or no ability pupils harangued by their teachers, they also felt scorned by some of their classmates. When the low achievers were asked why they were unsuccessful they blamed themselves rather than the environment. It was because they felt nervous, shy, skinny, unconfident or plain could not do it.

The active high achievers all identified reasons for their success:

'PE was a subject I liked to do and I found I was either good at it or could get better at it' (AF2) TINA

They were both good at it and enjoyed doing it. There are two elements that seem to be the determinants for ongoing participation. What is more, this tendency seems to then track through the lifecourse (as shown above) with levels being dictated by life trajectories such as job/career and child/caring constraints. The antithesis also holds true in that narrators who did not experience these two key determinants during school had much lower physical activity levels across the lifecourse. Having just one of these determinants such as liking it alone but with no talent was not enough.

As to tracking these behaviours across the lifecourse in order to bridge the timespan between adolescence and middle age, participants grounded their lifecourse physical activity in this secondary school experience,

'At school I absolutely loathed PE and I've tended to avoid exercise ever since' (IF1) SUE

'from school where if you weren't very good at sport then you didn't get any encouragement really, so I would say probably from that point, yes but as I kind of got older I thought to myself I sort of missed out on that' (IM1) ROY

'I've always played netball and I enjoy doing it, it is fun for me and it's something I enjoy to do and I know it's good for me' (AF2) TINA

'I think it's set in you when are a kid I do honestly' (AM1) TOM

'at school and all the way through, the competitiveness of sport I loved, and today even though I don't play sport, still a very competitive person and that's in every aspect of life' (AM2) GUY

As was shown in the self/life themes matrix (Table 21) and in the 'interpreting individual narratives', participants' activity levels in middle-aged adults were largely in line with their PE experiences. Those that had enjoyed PE and were good at it had continued to be very physically active into middle age whereas those that had not enjoyed PE at school had non-to low levels of physical activity into middle age and although it might not be possible to say school experience was wholly responsible, it has been shown to be significant.

Early middle age brought a period of relief from care responsibilities for all participants and instead of jumping into activity now that time was available; there was a period of inactive, reflective introspection. Perhaps a mid life crisis. However, this phase passed and was replaced by decisive action in both active and inactive participants. Formal exercise is differentiated from activities of daily living but the boundaries between the two become blurred. Even very active participants have by now reduced their intensity of exercise to taking on roles of sporting officials.

Whilst talking about their present views and levels of physical activity, the narrators were encouraged to discuss their attitudes to physical activity from two perspectives; firstly from 'close to' (Table 22), that is their activity levels now and their beliefs based on their empirical experience of physical activity in their immediate environments, and that of 'far from' (Table 23) being attitudes and information gleaned from media news stories, governmental health messaging etc.

PERSONAL PERSPECTIVE - CLOSE TO

When asked what formal physical activities they took part in now, walking was by far the most popular. They had arrived at this activity through different circumstances because of their local environment,

'we're quite lucky where we live here it's very green and lots of walking areas with footpaths and stuff like that so that's what I would look at as physical' (AF2) TINA

Because of medical health,

'post events, physical exercise now is a good generous walk which is also to do with movement and obviously cardio etcetera, the difference is obviously since the knee injury and obviously I'm getting older dare I say that' (AM2) GUY

Being an acceptable activity to do with their spouse,

'I do enjoy walking, I would like to be fitter but I think I am reasonably fit now in fact my current partner is incredibly fit and he complains if he thinks I'm not fit and so we joined a walking group a little while ago' (AF1) PAT

As a continuing activity,

'not as much, but I still do it now' (IF2) JAN

The health gains of walking in terms of improving fitness levels and controlling weight were understood and acknowledged and a story about walking as a remedy for poor health was related about a participant's mother. Walking was also discussed as a means of improving levels of movement such as walking between business meetings or a state of being because they could not sit still for long. Other forms of exercise mentioned were Pilates and Yoga classes, netball and going to the gym. The latter was done as an acceptable and generic form of exercise; however, it was universally disliked for different reasons;

'I find going to the gym really dull and boring' (AF2) TINA

'the music so loud that the person doing the class has to bellow to be heard above the music, I just can't stand it. I think we're trying to get people fit and we are making them deaf you know' (AF1) PAT

'when you go to the gym you realise how out of form you are really particularly as a lot of the sort of people there are a similar sort of age or actually older and seemed to have a darn sight more stamina' (IM1) ROY

Only AF2 was still doing regular high intensity training through playing netball weekly. Others who had been very active in sport, were now spectating regularly, either live or on Sky Sports TV channels.

Narrators' definitions of what exercise is, is varied and was particular to their own activity history, for example a narrator who had participated in a predominantly cardio-vascular activity said,

'for me doing physical exercise was anything that involved doing cardio workout associated with it' (AM2) GUY

Whereas an inactive narrator defined PA as,

'An active person is somebody who went in for the marathon on Sunday well I think they are actually setting aside time to do some kind of sporting or exercise activity as opposed to somebody like me who might if you like, without even thinking about it, fortuitously do some exercise. But not really going out of my way to actually do it. Just doing something that might be exercise as part of my normal lifestyle' (IM1) ROY

There were three deeply personal determinants of PA that added a strong dimension to being active or inactive.

The meaning of exercise is how to lose well,

I think competition is key to learning, even if you lose, I think people learning how to lose well, is a fantastic personality trait. (AM2) GUY

The meaning of exercise is that it is meaningless,

I'm not interested enough to persevere with it I don't know. It seems to me you put a lot of effort into physical activity and there is no reward for it. (what kind of reward would you like) well it should make you feel better I suppose. (IF1) SUE

The meaning of exercise is that it is a form of extreme behaviour,

'I just think some people take it to extremes and its good to take some exercise yes, but to take it to extremes no' (IF2) JAN

PERSONAL PERSPECTIVE - FAR FROM

Participants understanding of the national picture of health and fitness was patchy and contradictory. There was an understanding that lifestyles led to sedentary behaviours,

'what are kids going to do now who go to work in the car and sit in front of the TV, what will they do when they reach middle age?... I think people have got lazy, I think you know you don't even burn calories turning the TV over any more do you, you know you look at all the places you used to burn calories, you know women of my age have always just shoved washing into a machine and turned it on, household chores have become easier (AF1) PAT

Participants understood that the nation needed to do more exercise. However, narrators' perspectives were dictated by what they saw in their immediate environment, such as the participant who thought the nation was doing enough exercise because they saw lots of people jogging and cycling in their locale. On the other hand there was a sense that there was an obesity epidemic gleaned from the media. One narrator saw no link between diet and exercise and others were unclear of the connection talking about diet and PA as discrete sectors of life. There was no specific reference to knowledge of health education or messaging and two people believed that both diet and activity levels were matters for the individual and government should not intervene.

'It could be an insult to some people, it's presuming that some people are unfit and unhealthy in my opinion...I can see what they're saying but like I said it can be seen as an insult to these people in particular. I don't think people pay too much attention to it' (IM2) FRED

(what is your response to government messaging) 'well I shall ignore it' (IF1) SUE

The perspectives of participants to physical activity offered from both an accessible, well meaning, community stance and from the more remote health messaging from government, on the whole, are not as positive as they should be. Although all respondents understood the importance of exercise as part of a healthy living regime, their definitions of exercise varied, as did their mode of participation. Overall, facilities and opportunities on offer were not necessarily as successful a determinant as personal motivation and willpower. This immediate environment also coloured their view of a national picture with governmental intervention seen as invasive.

Adolescent experiences of physical activity are shown to be a strong determinant of later life exercise uptake as evidenced here through participants life themes. The accumulation model (Heikkinen, 2011) shows how trajectories might modify themes but not override them. The evidence that participants recognise and use their body as a pedagogic device (Evans et al., 2009) is more obtuse. There is no commonality shown, with actions linked to events and physical awareness that can be seen to have negative outcomes as well as positive.

Study 3 Summary

- **To what extent can ‘corporeal dissociation’ be identified in middle-aged men and women in a health and fitness context and in which forms?**
- **What are middle aged people’s perceptions of their adolescence and themselves as exercisers?**
- **Can lifecourse links be found between adolescent experience and middle age activity behaviours**
- **Can an understanding of in/activity typologies be useful for practitioners to encourage exercise adherence in middle age?**

The analysis from this inquiry has evidenced a lifecourse link between school experience of PE and exercise behaviours in middle age. Literature from Chapter 2, (Arnold, 1968; Central Advisory Council for Education, 1963; Schools Council PE Committee, 1971), established that due to historical and social change, physical education in English schools between 1955-1975 fostered a divisive

environment that could affect individuals views of physicality and influence future physical activity levels though the lifecourse. This study investigated this process to find the development of corporeal dissociation from school to middle age. It found that PE schooling was meaningful to physical activity through the lifecourse and more specifically individual's relationships with their PE teacher/s. Less able pupils described the teaching/learning environment as abusive and aggressive, dominated by partisan teachers. For them, humiliation or physical punishment was normal whereas, more able students received positive discrimination. Not only did the less able pupils have to run the gauntlet of an abusive or violent teacher, they also related that they had to cope with invective from their classmates who were scornful of peers who could not perform.

The lifecourse was found to impinge on this initial influence and key transitions offered opportunities to affect or modify attitudes to physical activity.

During early adulthood, socialising was a driver for inactive people. It helped them reconnect to physical activity via fitness classes, whereas active people continued to have strong involvement with their respective sports and the socialising was a happy add-on. After an adulthood of building careers and caring for family, there is a period of inactive introspection followed by decisive action regarding their next phase of activity participation. All narrators recognised their own physical in/activity themes tracked back through their lifecourse and acknowledged school PE experience as being the prime mover in this. Regarding the research question, 'Can lifecourse links be found between adolescent experience and middle age activity behaviours', the participants narratives show that middle aged physical activity behaviours are grounded in adolescent experiences.

• Chapter 7 •

Discussion

Defining corporeal dissociation

- **To what extent can ‘corporeal dissociation’ be identified in middle-aged men and women in a health and fitness context and in which forms?**
- **What are middle aged people’s perceptions of their adolescence and themselves as exercisers?**
- **Can lifecourse links be found between adolescent experience and middle age activity behaviours**
- **Can an understanding of in/activity typologies be useful for practitioners to encourage exercise adherence in middle age?**

This chapter discusses how the findings from all three studies can together address the research questions and illuminate the phenomenon of corporeal dissociation. It begins with the limitations of the research that have provided a context for how findings were interpreted. It then sets out the evidence for the existence of corporeal dissociation and contextualises it within existing research. It examines its development, how it affects people’s lives and the evidence for its opposite process of re-association, finishing with a definition of corporeal dissociation and its characteristics. The evidence, that was gathered by a bricolage of different methods, is paralleled to offer a strong argument for the theory. Rather than forcing results to marry, different types of results are shown to reflect across studies but they are not reliant on each other.

Limitations

This research has been pragmatic in nature, based on observations made in a single fitness practice and has extrapolated out to find evidence for the observation on a national scale, using a creative bricolage in order to do this. As systematically as the research has been conducted, this research has been found to have limitations that might be addressed in future developments. The research has looked at a group of people 45-65 years old because historically it has been documented that this selected group experienced an extremely negative educational environment. It is not known if the findings are transferable to other age groups, who might have different educational experiences due to the development and reforms of pedagogic practice in PE. The 10 personal trainers interviewed in Study 1 are recognised as a small sample and could in no way be representative of the approximate 6800 fitness trainers who practice within greater London (request for information REPS May 2016). They are a cross section of but not exhaustive of all practices. The nature of qualitative research means that interviews cannot be replicated because of differences in interviewees' experiences. Individual interviewer reflexivity is mitigated and declared in Chapter 3.

The questionnaire developed for Study 2 covered a wide range of adolescent experience but was not exhaustive. Questions were picked from a range of existing validated tests for their appropriateness to the research questions and adapted where needed. All changes were reported. The respondents were a convenience sample, sourced from a national panel that was accessed through a private marketing research company. Overall total distribution of the sample's social grades, A, B, C1's, in the latest census (Office for National Statistics, 2013) showed variability. In the North East region of England 49.6% and in the South East 60%. However, all economic groups were found in all counties and

boroughs across the country. It cannot be guaranteed that the panel fits the criteria requested and therefore, it cannot be known how representative they are of geographical distribution within England. Post-doctoral developmental work might add a categorical question to the survey to ask which region respondents come from to help ameliorate this problem. Using a market research company panel has such limitations, however, has been used and evaluated as a research tool by both Furnham (2009), who used it as a tool to illicit public knowledge and views on mental health issues nationally and Mook et al. (2016) who used it in a Public Health England study evaluating infectious disease challenges in the UK. They found the method to be efficient for data collection. Other options such as access to existing large scale research databases are problematic for individual research projects that might not align to those being done presently. Other options such as creating an online survey and uploading it to social websites are also ill-suited as numbers of respondents and their suitability cannot be controlled. The time of year it was published may also have an effect on answers given. It was distributed in the week between Christmas and New Year; a time when new year resolutions such as diets and joining a gym might be considered. Therefore the survey about bodily concerns might produce a different response than if it was taken in July, when influences are different.

Accessing large scale samples for academic work has its challenges and using a market research company was a pragmatic solution to finding respondents. However, the process means that participants are self-selecting. Stellmack (2013) states that finding causation becomes problematic and threatens internal validity when using a self-selected sample as opposed to random sampling however, this can be assuaged by a large sample size and applying the central limit theorem (Field, 2013). The sample is used 'strategically' in relation to the research question (Bryman, 2008). The survey asked questions regarding experiences between the ages of 11-16 which means memories of 29-49 years ago for

participants. It was considered that after such a long period of time, detail might be lost and that judgments might be made on an overarching sense of that period of their lives. However, greater differentiation within the data set might have been elicited if the survey had included three discrete time phases; that of 11-12 years old, 13-14 years old and 15-16 years old. The respondents filled in a 7-point Likert scale, which is academically acknowledged a valid method of statistical data collection. It may be argued that concepts such as agree/disagree cannot be measured and may have different meaning to different respondents. Therefore, replicability may be reduced. However, the method is an accepted and established collection method in the health and psychology fields and thought robust enough to use the evidence it provided. Future development of this survey might explore the use of a 0-100 scale for each question.

Narrative Inquiry included the complicit nature of the interviewer in the co-construction of this data. Narratives are by their nature individual and not replicable. The sample used is small and emergent themes might be developed with a bigger sample. The sample size of 8 was deemed suitable as it constituted just under 20% of the larger population who met the criteria to be included in this study. The quality of the data was bound to the level of trust built with the researcher and as explicit as reflexivity was, consistency across all interviews is not measurable. Fraser's (2004 p145) '*multiple possibilities for reporting stories*', accepts an inevitable researcher interpretation of narratives and selection of ideas. This was alleviated as much as possible by implementing an analytic framework and all of these limitations should be taken into consideration.

Does corporeal dissociation exist?

Clients within a single personal training practice anecdotally reported histories of bad PE experience at school, which had made them exercise averse until middle age, when they had sought specialist help. In the intervening years, they had become divorced from the physicality of their bodies (named corporeal dissociation) so re-engagement, when it was attempted, was difficult and painful. These clients followed similar lifecourse pathways; doing desk bound jobs and having sedentary leisure pursuits. This had not been the case with clients who had enjoyed PE at school, who continued to be active through their life dependent on career and family commitments. This research has proffered a conceptual development of corporeal dissociation in the data and findings of three studies, achieved by taking a life course perspective and multi-method bricolage.

Re-association, as a solution to dissociation can be located within normal methods of practice employed by personal trainers using the body as a pedagogical device (Evans et al., 2009) and explained as the client 'getting to know' their body together with the physiological adaption of muscles through exercise. If corporeal dissociation is identified by the trainer at the outset, then specific programmes or approaches of re-association could be developed to aid exercise adherence in the initial stages of health behaviour change, help overcome perceived pain and problems encountered by such people and help reinforce positive lifestyle decisions made regarding exercise; all of which are sticking points in client retention (McClaran, 2003).

Corporeal dissociation was found in other practices within the same geographical and demographic area and it was shown to be prevalent. Trainers reported having seen the same pattern in their own clients with two reporting the observation in exactly the same terms as the original practice. Personal trainers on the whole were weak at identifying such behavioural patterns and did not place a lot of emphasis on a client's own history of physical activity as a first line of investigation. Study one illustrated that personal trainers had more empathy and respect for clients that had been physically active throughout their lives. There was a mutual understanding of commitment and intrinsic drivers needed to enjoy exercise and a synergy of goals and understanding of what future success could be. This reflected and counter-balanced Phillips and Drummond (2001), who found that a lack of such empathy on the trainers part was a strong indicator for client withdrawal. Again, Study 1 found there was little reflective consideration by the trainers of their own history and its relevance to practice. There was a disconnect in praxis. This is in agreement with Coburn (2002), that it was level of qualification rather than work experience alone that indicated good practice and suggests that the present minimum and most commonly held qualification might not be enough. For clients who had had negative experiences with PE teachers, the attempted engagement with exercise through personal trainers might be reinforcing their negative stereotype of a fitness professional. Within the gym environment, having a trainer who expects a better performance than they are capable of plus commonly reported feelings of ineptitude on the gym floor in front of their peers is redolent of their previous PE experiences. In Study 3, an inactive male narrator told how he was trying to engage with physical activity and had employed a personal trainer but was not enjoying the experience.

The prevalence of corporeal dissociation in the national population might be hinted at through governmental reports (Bernstein et al., 2010; Niblett, 2015; Public Health England, 2014; Richardson, Cavill, Roberts, and Ells, 2011; Roberts

et al., 2013; Roberts and Marvin, 2011; Varney, Brennan, and Aaltonen, 2014) and might go some way to explain the high levels of inactivity and sedentary behaviour reported. Also to be a contributing factor to the associated chronic diseases.

Study 2 found that 10.89% of all respondents self reported as being extremely inactive. However, practitioners reported the majority of their clients had been inactive before coming to them. Study 2 pinpointed traits and experiences that together offered a biographical disposition of components for corporeal dissociation in adolescence. Only the strongest traits and experiences were included and they centre around PE experiences in school and sporting leisure pursuits. These components were reflected in clients' anecdotes, contemporaneous literature, personal trainer's clients reports from Study 1 and individuals' experiences narrated in Study 3. Personal trainers themselves give descriptions of themselves and their own physical histories that conform to the active disposition and broadly agree with both Phillips and Drummond's (2001) descriptions of male trainers' drivers and Chui et al.'s (2010) description of the importance of physical appearance to trainers.

The development of corporeal dissociation through the lifecourse

Aldrich (2002); Armstrong and Sparkes (1991); Arnold (1968); Central Advisory Council for Education (1963); Gurney (1989); Halsey (1968); Scraton (1986) and the Schools Council PE Committee (1971) chronicled a secondary school environment of poor achievement rife with systemic problems. Further more, Antaki and Brewin (1982); Covington and Beery (1976); Robinson (1990) and

Weisz and Cameron (1985) described pedagogical practice and classroom environments of harassment, bullying and discrimination. Seligman's (1975) learned helplessness offered an applicable model to describe a process of how corporeal dissociation might be established in such a situation. This literature provided enough evidence to consider clients' anecdotal memories of bad PE experiences reliable, and reasonable reflections of actual events. This was further corroborated in Study 1, where personal trainers reported their own clients relating narratives of bad experiences, such as humiliation and abuse, in PE. Further clarification, including regular corporal punishment, emerged in Study 3 that showed, more than the experience of PE, it was the relationship with the PE teacher that was the main influence on future attitudes to physical activity. This parallels Chinn (2007); Hart (1983) and Trujillo and Hadfield's (2009) findings, who found in maths and to a small extent also in English, it was the teachers' responses to pupils and subject that was having a profoundly adverse effect. However, Study 3 developed this further by illustrating that it was not just the response of the person teaching PE, who commonly discriminated in favour of able pupils, but that less able pupils also had to endure the weekly scorn and invective of their able peers. This was not found in the research literature. This ongoing ill-treatment, week in and week out with no hope of escape, is consistent with the conditions that would allow learned helplessness to develop (Maier and Seligman, 1976), which posits mental withdrawal and depression resulting from continued painful circumstances. Study 2 showed the power of specific subjects, in this case recalling school for colouring our experiences through a component that clustered a group of negative traits and experiences that describe a child that has just given up: they hated school, hated academic work, had little self confidence and did not thrive on competition. The four inactive narrators in Study 3 qualified this component with individual negative experiences of education and how they had friendships with others who were going through similar experiences.

Study 2 showed active children felt they were more loved than inactive children, they were better academically and overall were happier than their inactive counterparts. It demonstrated a group of dispositions that embrace an able, sporty and competitive individual. Pupils who were able, were evidenced in Studies 1 and 3 to be encouraged and given special opportunities that other pupils were not, such as access to elite sports clubs. Personal trainers reported that their clients who liked PE were continually physically active for the rest of their lives. School was a pivotal reference point in physical activity lifecourse for both the trainers and their clients. The findings regarding 'school' are in broad agreement with the lifecourse work of Hirvensalo and Lintunen (2011), Kirk (2005) and Lunn (2010) who found school experiences to be a predictor of future activity participation.

Here, PE experience is evidenced across all 3 studies as the key influence in future activity behaviours and these findings extend the existing body of lifecourse literature that considers different facets of influence for physical activity through the life, including low SES (Mamot and Bell 2012), access to green space (Astell-Burt et al., 2014), Divorced parents (Hypponen et al., 2005), early adversity (Ben-Shlomo and Kuh 2002). Corporeal dissociation can now be considered a trajectory through the life course that has its origins in schooling PE.

Burkitt's (2012) view that 'the body' is a construct of constant dynamic responses to various power structures and cannot be reduced to single facets is in keeping with the lifecourse theoretical perspective taken here. His view is extended by acknowledging the accumulation theory of health outcomes (Heikkinen, 2011), which seems to be a sensible view to take on an individual's cumulated experiences over time. Studies 1 and 3 illuminated the cumulative effects of corporeal dissociation on individuals. Together they showed how clients lived predominantly sedentary lives, with sedentary careers, jobs and leisure pursuits.

By middle age they were suffering from a number of chronic health conditions which had been the trigger to seek help. Adolescent experiences of physical activity established patterns and behaviours that were still in place in middle age. This was established in both active and inactive people and in both genders. Study 3 detailed narratives of individuals travelling through time and social states, school, work, marriage, family, retirement and demonstrating Alwin's (2012) Five principles of lifecourse: human agency, linked lives, time and place, lifespan development and timing along the way. In early adulthood both active and inactive were participating in physical activity. The active were participating because they enjoyed the experience and the socialising attached to the sport was an added extra, whereas the inactive were participating in less focused activities such as fitness classes because of the socialising and the activity was the cohesive element. However in the inactive group, participation had petered out by child rearing years.

An unexpected finding in Study 3 was that during early middle-age, when care and responsibility for children or parents had subsided and careers were not so demanding, narrators found they had time on their hands where they then might have been expected to take up physical activity, especially as time is commonly reported barrier to participation (Withall, Jago, and Fox, 2011). However, individuals went through a period of introspective reflection. This finding adds to the understanding of lifecourse knowledge and is an avenue for further research. After this reflective phase, individuals might be likely to employ a personal trainer, as an introduction to activity. This concurs with Study 1 and original practice observations as the point when many inactive clients first appear. Inactive narrators in Study 3, who had not started formal exercise, qualified their lack of activity with justifications of normal daily activity constituting formal exercise. Both active and inactive narrators named themes that had been constant through their lives having been established in school. Examples that have been evidenced

here include; playing amateur netball through the lifecourse or smoking and being in a scooter gang or avoiding all formal activity after being humiliated by the PE teacher to being an elite athlete and sport official in middle age after being encouraged at school. These early PE experiences are evidenced as having a profound effect on individuals, who can relate specific events (good or bad) with clarity and emotion who otherwise are quite woolly on their recollections of other school subjects. This finding of individual themes of physical in/activity being tracked from adolescence to middle age extends existing lifecourse knowledge on uptake of physical activity in middle age.

Re-association and the tool

Inactive people may employ a personal trainer to aid re-association. After many years of sedentary lifestyle and ignoring appropriate behaviours for physical health such as exercise, they report low level multiple chronic conditions (Studies 1 and 3). Adherence at this stage can be tentative. They present at gyms or to personal trainers with little kinaesthetic awareness and if handled incorrectly will actualise a self fulfilling prophesy: Exercise was not for them before and it still is not. Study 1 explained re-association as being a result of successful standard personal training programming and described as overturning negative effects. This, trainers saw as central to their practice but not contextualised by them as being a set of skills that could be manipulated as a response to a specific need (Annesi, 1999). The success of existing practice is patchy. It was reported in Studies 1 and 3 that the gym environment and approach was alien, boring and uninviting.

The personal training practice is for practical purposes a dualistic environment: people are either, sitting or doing, fit or unfit, able or unable and is perceived as

such by both the trainer and client (Studies 1 and 3). A Cartesian view of head and body is a workable and useful model for the practitioner and client, in that it streamlines and focuses the issue and its solutions: the body is unfit, here is a training programme that will make it fit. However, a lifecourse perspective informs that a middle aged person will have a dynamic, internally and externally constructed view of the physical self. In order to be successful, the practitioner needs to be less dualistic and more responsive to the multiple facets of an individual and their history. The further development of the scalable tool from Study 2 will aid trainers to identify whether corporeal dissociation is present in new clients and from this understanding, design programmes that help adherence and enjoyment of sessions in the initial health behaviour change study.

The scalable tool was developed by testing and reducing 63 variables that covered a number of adolescent life experiences: home, me, school, leisure, friends to the 16 strongest. The client is asked to rate each of the 16 variables on a 7 point scale. From their answers the trainer then calculates a final score and places it on a corporeal dissociation scale. The final scale ranges from 9.2 (corporeal dissociation) to 64.4 (highly active). When tested for internal consistency across the entire original data set of 800 respondents a strong inverse correlation was demonstrated. This tool can be evaluated in comparison to the validated MARS-A tool (maths anxiety rating scale) (Suinn and Edwards, 1982) which has now been developed over a number of iterations and is a standard test for maths anxiety in adolescents. Participants are asked to rate 98 life situations that use numbers on their level of anxiety using a 5 point scale. The final scale ranges from 98 (low anxiety) to 490 (high anxiety). Since its original development, the scale has been adapted into shortened forms, for adult distance learners, for pre-testing and refined versions for adolescents. Future developments of the corporeal dissociation scale will incorporate some of the solutions found in the MARS; including a wider range of life experiences and sub-

scales as well as ease of use for practitioners as there is an imperative that the test setting must be taken into account. The aim is to encourage exercise adherence rather than produce obstacles by asking potential clients to fill in intrusive and elongated questionnaires. An action research approach will be taken to include the real world aspects.

Finally, Study 3 uncovered an unambiguous finding to being active; that it was necessary to be both good at PE at school and enjoy it. One of these things alone, was not enough. This mirrors findings from Study 2 in which the variables of strongest difference by effect size were 'I loved PE at school', 'I was good at PE' and 'I enjoyed myself and had fun in PE'. Such specific findings were not found in existing lifecourse research and both extend understanding and are an area for further research exploration.

Definition and characteristics of corporeal dissociation and re-association

Corporeal dissociation is an aversion or reticence to physical activity, exercise or sport, which presents in practice as a significant reduction in awareness of physicality, confidence and competence for exercise in adulthood.

Characteristics that present in practice.

New clients of either gender demonstrate these characteristics:

- narrate negative experiences of PE at secondary school
- hold a perception of being 'different' from active individuals
- have a reticence to undertake exercise and do not look forward to it
- find new movements can induce sensations of pain
- narrate patterns of sedentary lifestyle choices through the lifecourse

- might have tried to re-engage with activity on one or more occasions through the lifecourse but been unsuccessful
- report it is not a sudden event but a gradual subconscious state although a prime event or mover may be known and acknowledged

The process of re-association in middle age combines normal exercise physiology of muscle innervation and adaption to exercise movements together with a reversal of negative attitudes to exercise participation and its outcomes established in adolescence.

Summary

- **To what extent can ‘corporeal dissociation’ be identified in middle-aged men and women in a health and fitness context and in which forms?**
- **What are middle aged people’s perceptions of their adolescence and themselves as exercisers?**
- **Can lifecourse links be found between adolescent experience and middle age activity behaviours**
- **Can an understanding of in/activity typologies be useful for practitioners to encourage exercise adherence in middle age?**

The bringing together of findings, clarification and definition of corporeal dissociation, has developed understandings of inactivity trajectories which may be useful for practitioners to encourage exercise adherence in middle-age.

• Chapter 8 •

Conclusion

The contribution of these findings to exercise knowledge and future developments

This research has identified and defined a disposition and named it 'corporeal dissociation'. It adds an important understanding to the knowledge of how to reverse the complex and increasing problem of sedentary behaviour with its concomitant non-communicable diseases. Attitudes to physical activity and subsequent action are shown here to be established in secondary education and continue through the lifecourse to middle age. From this understanding, a practitioner tool has been developed to identify those clients that show a disposition of corporeal dissociation and thereby suggest appropriate exercise programme prescriptions that might aid adherence and motivation at the early stages of clients' health behaviour change.

The research journey has allowed me to build on mastery gained at Masters level. I have learned and developed a range of skills and perceptions along the way. At first it seemed I was taking a mixed methods approach to the research, however as the work progressed a more nuanced understanding that bricolage was more suitable emerged with reading. This was aided by a conversation with Professor Paul Gibbs, at a University student research conference, who quizzed me about my stated methodology on a poster submission. This short discourse brought forward a clarity of understanding - an 'aha' moment (Hannabuss, 2000). The requirements of undertaking such a methodology brought with it a deep awareness of the very different tools I had chosen and their strengths and

weaknesses. Moses and Knutsen's (2007) 'toolbox' of methods took on a 'real world' pragmatic meaning; the research questions drove the decision when considering the different contributions each method makes to what we can come to know. I found the qualitative methods more akin to practice with its daily requirement to communicate with clients, whereas the quantitative method on the other hand, had to be learned and although not a natural skill, developed a systematic thinking approach and skill that aided enquiry. Another understanding I gained was that of moving from subjectivity to objectivity and back and developing a personal stance on how to employ these epistemologies. The traditional processes of somehow melding the approaches did not find an easy fit so I developed a personal approach of allowing them to sit parallel to each other that was more in keeping with the study. However, this created its own problems, and rather than relying on existing formulae, I had to create a suit of 'checks and balances' to give the work robustness. Finally, I have gained much experience and knowledge of praxis; how observation of practice can be used in research and how that research in turn can feed back into practice. The research started in practice and has developed further lines of inquiry relevant to practice.

The original practice client base, made up predominantly of middle aged men and women, appeared to fall into one of two camps: Some clients reported having, on the whole, enjoyed PE at school and throughout their life, with only extrinsic lifecourse determinants such as a young family or job promotion curtailing exercise for short periods. Otherwise, they actively participated in age appropriate sports. They showed a greater awareness of their body than inactive clients and believed in its capacity to function effectively because at some time in the past it did. On the other hand, other clients, who made up the larger proportion of the client base, also saw school education as a significant point in their physical activity history. They reported bad experiences of PE classes in secondary school. Their consequent decision was that, 'PE wasn't for them'. From

this point, their body became a vehicle to move their head around with the former largely neglected through consequent lifestyle choices. They tended to have desk-based jobs and sedentary pastimes. Significantly, in middle age, they now wanted or needed to participate in physical activity for health reasons and had employed a specialist to help them. The process of reawakening an awareness of their physicality and what is more, being able to enjoy the opportunity to use their bodies in exercise, was extremely difficult for them both physiologically and psychologically. This process has been identified, defined and named in this research as corporeal dissociation. The opposing process of a reawakening of awareness of physicality was named corporeal re-association. Although, not a focus of this research, re-association was identified in part as the normal exercise programming practices of practitioners and found to be an un-contextualised and haphazard occurrence due to the specialisms, knowledge and practices of practitioners. Further work might more clearly define re-association and its constituent parts to better inform practitioners.

The inactive clients seen in practice are the tip of an iceberg in a national context of huge rises in non-communicable diseases, such as obesity, hypertension and diabetes type 2 brought about by sedentary lifestyles (Eastwood, 2013a, 2013b). Indeed, the practice clients are in the minority, proactively trying to change their fitness outcomes and improve their health by joining gyms and employing personal trainers who are perceived by both the government and public as appropriate professionals in this field (UK Active, 2014). However, the lack of physicality and motivation to exercise in this group means retention and adherence to exercise in the early stages is low and if not appropriately handled by the professional or organisation, will end in failure. An understanding of this group's perspectives and approaches to physical activity could have implications for the wider inactive national population. Thus, the urgent need to find

understanding and solutions to this growing problem of a lack of exercise uptake is the basis and rationale for this thesis.

Practice is a dualistic environment; people are either fit or unfit, active or inactive, motivated or unmotivated, able or unable and indeed this is seen as a measure of success by clients, 'I couldn't do X and now I can'. It is also the most practicable working model for trainers to make decisions that move the process forward. Indeed, when this research first began, the observations were named 'head people' (inactive) and 'body people' (active). However, it soon became evident that such a Cartesian view was too restrictive and that such an issue was much more complex and nuanced. It was necessary to consider the view of body from both sociological and phenomenological perspectives and both have been incorporated into this research using a lifecourse perspective and bricolage multi-methods.

The existing research literature was interrogated for contemporaneous evidence that would give credence to clients reports of school PE experience during 1950's to 1970s and evidence given during narrative interviews. A picture emerged from the literature of haranguing and embarrassment for pupils who were unable to perform, inflicted on them by their teachers. There was wide pedagogic and governmental literature that corroborated this. However, what was remarkable and not found in the literature was that not only were pupils subjected to such draconian teaching regimes on a weekly basis with no avenue for escape, but that they also had to suffer invective from their able classmates. Therefore, vilification was coming from all angles of the experience. It is suggested that this is not in the literature because in the controlled, class ridden, prescriptive environment of the time they just were not looking for it. The views of the children were incidental. Retrospectively, it is Seligman's (1975) learned helplessness

model that has had the best fit to the experiences and repercussions reported by middle aged participants.

Future avenues of research for sport science might extend this finding, where consideration of the pupil – pupil relationship rather than teacher - pupil relationship should be scrutinised. It might also incorporate other peer groups pressures on pupils perception of their body (especially girls) and their ability to perform in the PE arena. Self esteem in this context is a complex concoction of elements including cultural and familial influences. Peer bullying can now be added to this list.

The literature did uncover a similar phenomenon in mathematics. Pupils were failing so profoundly that a great deal of research was done and a state called maths anxiety was identified. An in-depth scalable test (MARS-A) was devised to note the level of anxiety in pupils so that pedagogy could be moderated and adapted. This informed a consideration of teaching practices in the 1980's as part of a new comprehensive approach to education. PE was not so privileged; most likely because it was not an academic or qualification subject at the time and not given such importance in future lives. This was a mistake. As this study has shown, the effects of PE experience resonate profoundly through the lifecourse and directly affect health outcomes in middle age and on into old age. It is also interesting to note that the answer to maths success still has not been found after 30 years of pedagogic experimentation. A national awareness of effective PE teaching is a recent thing and only linked to the rapid rise in childhood obesity.

These findings regarding unable pupils were sharply brought into focus when compared to pupils with good ability in PE. Teachers positively discriminated in their favour, encouraged participation to such extremes as taking pupils out of

school hours to sports clubs and integrating them into their own sporting communities. Their experience of school PE was positive, enjoyable and continued throughout their lives. When individuals became too old to compete in their sport it was common for them to become officials. A pattern was found in which all participants both active and inactive noted and recognised their own life theme of physical activity that resolutely began in secondary school experience of PE and tracked through to middle age. This focus on examining individual's phenomenological relationship to physical activity through life varies from other lifecourse work where extrinsic determinants have been sought and found generic outcomes such as SES or education level (Kirk, 2005; Mann et al., 2013).

In order to identify corporeal dissociation, a range of adolescent experiences, as well as school, included parents, me and friends and leisure were tested, as it was suspected that other aspects such as parents and the home environment would be a large indicator of future behaviours. Surprisingly, this was found not to be the case. The majority of the 16 variables that describe corporeal dissociation by showing the strongest difference between active and inactive pupils centred around School PE and leisure sport outside school. This was reinforced by findings in the narrative inquiry which showed that school was a bigger predictor of life long participation and more particularly, the relationship with the PE teacher rather than parents. The finding that the active participants were happier and more academically successful than their inactive counterparts gives reason to encourage children to be active. It should also be borne in mind that although schooling systems and pedagogy have changed in the 30-40 years since the participants were at school, it does not mean that corporeal dissociation no longer exists. In fact, now that corporeal dissociation has been defined, an important future avenue of research would be to be to map its trajectory in subsequent generations.

The lifecourse perspective taken in this research also uncovered a number of findings that were not evidenced elsewhere. Phases of experience were found that were not necessarily age dependent but appeared at specific key points. For example, inactive participants tried physical activity for the first time post school in young adulthood. It was the socialising that was the key factor. For the inactive, the socialising at a fitness class or club was the main driver and the group exercise a 'fortunate' add-on, whereas for active individuals it was the activity itself that was the main driver with the socialising afterwards the 'welcome' add-on. However, the inactive had ceased participation again by child rearing years. The active continued, some, mostly males, to the detriment of their relationship with their children.

A common reason for non-participation in the inactive was 'lack of time' and indeed this is cited as a major driver in governmental policy making in the area. (Withall et al., 2011) However, another remarkable finding was that in middle-age, both men and women (more so women) found they reached a point in their lives when they were no longer responsible carers. Children had grown up, ailing parents had died. The participants found themselves in a period of relatively affluent calm when they might be expected to finally begin exercise. But they do not. They go through a period of reflection and withdrawal. Even the active take a reflective step back and consider their relationship with their sport. The length of this stage is indeterminate but seems to last years rather than months or weeks. By middle to late middle-age they have transitioned again, actively putting into practice decisions they have made in the previous reflective stage about their relationship to physical activity as an aspect of health whilst moving to old age. It might be an awareness of old age actually looming that encourages this move to action. As inactive middle aged clients are most likely to present at this point or join a gym or fitness class and it becomes a pivotal point in their exercise adherence; the 'action' study of the trans-theoretical model for health behaviour

change (Prochaska and Di Clemente, 1983), and the point where practitioners need to be most effective. This finding of a reflective stage is an important contribution to the understanding of lifecourse as it was not described in the literature and may have a strong bearing on future understanding of healthy ageing from a number of perspective for sport science, for example, if gender has a significant role in this experience. Women, in most cases are the direct carers but their husbands will also be affected through their own responsibilities and relationship to their wives. It may also have great relevance to understanding other aspects of the aging processes outside of the field of sport science. It presents opportunities for future research from a wide range of enquiry.

The research also uncovered lifecourse findings that might inform research looking at health policy and promotion. A distinction was made about participants' understanding of physical activity and their community (attitudes and facilities) and that of a more distant governmental influence. Inactive participants included in their own exercise participation, activities that might otherwise be described as ADL's with walking being the most popular. This reflected a shift in perception of activity; in young adulthood exercise had been understood to be formal activity being undertaken under instruction in organisations such as gyms or classes, whereas by late middle age it now encompassed most general day-to-day movement, 'I'm always on my feet'. Gyms were roundly reviled by the inactive as being too loud, too boring, too hard but community classes fared better. The national picture was patchy and contradictory. Although participants understood the effects of sedentary lifestyles and knew of the enormous health problem in the country, their perspective was dictated by their immediate environment. So if they saw people being active in their community or street, 'everyone's on bikes', then the nation was doing enough exercise. There was also a sense that government should not intervene in this individual choice to be active or not. There was scant knowledge of health promotion campaigns. This wider physical activity

perspective should not be overlooked as it evidences Dannefer's (2012) view that the lifecourse is moderated by social institutions, policies and social rules and contextualises the participants perspectives.

Many of these findings were reflected by other practitioners when reporting on their own client experiences. Corporeal dissociation itself was located in other practices. The field of personal training practice is not widely researched and in the process of interviewing the personal trainers, four themes emerged that are each unexpected aspects of practice: Trainers, perceived their clients through their own value system; all trainers had a self belief they were strong communicators; they all found difficulty distinguishing where the boundaries of the relationship lay and they assumed the entire population was just as aware of soft health promotion as they were. Each of these findings might be a separate topic for further investigation and together they might uncover further understanding of practitioner efficacy and client experience.

The final outcome of this thesis was the development of the Corporeal Dissociation scale. It is a practitioner tool to identify where clients sit on a scale between very active and corporeal dissociation. This knowledge will allow them to prescribe appropriate, bespoke exercise programming and employ suitable motivational techniques to aid exercise adherence. Future development of this tool might extend the range of adolescent experiences already examined, it could employ sub-scales to focus on particular areas of experience and an action research methodology might be taken to apply the tool directly into practice. Practice might also dictate the form and size such a scale can be without it being perceived as intrusive to the user. The form it could take could also be considered and utilised. App technology could be one avenue to investigate. Digital technology might help and encourage clients to successfully complete the tool. Further development might also look at developing effective programme

outlines depending on where a client falls on the scale. It might consider deficits in practitioner knowledge and recommend appropriate educational courses as it was shown in the findings that many practitioners knowledge was not comprehensive enough to work successfully with corporeally dissociated clients. At present, practitioners have little to help them understand their clients needs and therefore such a tool would be a substantial addition to their portfolio of skills.

The contribution of research strategy

In order to arrive at these far reaching findings it was necessary to be innovative in the research approach as there was no existing critical analysis found when trying to locate this work. There were no studies that dealt with this particular topic and those found in associated areas were scrutinised for clues to help the efficacy of this study. The thesis has offered up a new facet of human experience that will touch on and cross over the work of others, but at the moment it cannot extend other work in the area of corporeal dissociation and its impact through the lifecourse as none has yet been done. Other work that looked at associated subjects such as health and SES, school, traumatic experiences amongst others had in the main used traditional positivist or mixed method approaches to find extrinsic determinants as solutions. However, none of the methods found in the reading was suitable to tackle this research. This created a challenge. Rather than squeeze the research into 'off the shelf' methodologies and methods, it was better to build a new and completely appropriate one. A pragmatic paradigm was a perfect fit for both this requirement and the approach to problem solving of the practitioner and bricolage was found to be a suitable methodology. On one hand, the researcher now had freedom to find and use the correct tool (Moses and Knutsen, 2007) but on the other hand, this created as many problems as it solved. A structure had to be developed to give the research validity and robustness both

within each separate method and then when considered together. Validity was required for each method and for the whole study. As the research was investigating events that happen over a lifetime, the theoretical perspective naturally fitted into lifecourse theory.

Bricolage was chosen as a the best framework to populate with methods that met the needs of the research questions: Semi structure interviews with content and emergent analysis found that corporeal dissociation was to be found in other practices, a national survey with statistical analysis uncovered the disposition of corporeal dissociation and developed the tool and narrative inquiry linked school experience to middle age through themes of physical in/activity. The findings from each study were interpreted by looking across each method to find reflections in others, acknowledging that each method was looking at corporeal dissociation from a different perspective and theoretical stance. Practitioners find solutions wherever they may be and amalgamate them in praxis, but whereas a practitioner might manipulate this knowledge tacitly, here an explicit, systematic and demonstrable process was adopted. This use of disparate methods in this way was named 'multi-methods' to distinguish it from 'mixed methods'. Mixed methods would have created a number of dissonant philosophical issues around bringing findings together. Here, qualitative remains qualitative and quantitative remains quantitative and their innate strengths as different types of tools are fully exploited.

This coming together of lifecourse, pragmatism and bricolage has been effective and future research might take this further as a suitable approach to looking at aspects of lived lives through the lifecourse.

Endnote

This thesis began as an observation in practice and concludes in practice with a practitioner tool and a working definition of corporeal dissociation. The development of a research strategy using bricolage has added new perspectives and understanding of exercise uptake in middle age. The findings have far reaching implications outside practice and add to the wider knowledge of exercise, influences on activity and inactivity and the development of such constructs through the lifecourse

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Appendices

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1. Market Research Company e-brochure



Shape the Future

Shape the Future Limited
Company information
July 2014

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Shape the Future

Shape the Future was set up in 2005 by its directors, Peter Martin and Dan Creasy.

The company offers a full range of online and more conventional research services and works with clients to develop the most appropriate methodology for each project.

Shape the Future has conducted on- and offline surveys for a wide variety of organisations including business start ups, local government, quangos and market leading organisations in fields as diverse as banking, broadband, food, facilities management, IT training, engineering, retail, apparel and fast moving consumer goods. A gratifying number of these have become regular clients.

Shape the Future's systems have been set up to enable very fast turnaround for surveys when required. Interim results are usually made available online immediately our online surveys start and our record for delivering survey results so far is just under 18 hours from launch. One client commissioned us to provide a survey on a Friday afternoon and we delivered completed results from a statistically valid sample before 9:00 a.m. the following Monday. We then provided copy for a brochure and a press release based on the results that afternoon. Recently we conducted a survey of employers in five languages, delivering results within 6 working days from receipt of brief.

Dan and Peter are also directors of Survey Mechanics Ltd, which is breaking new ground with a market leading online survey system for those wishing to set up, run and analyse their own surveys. Shape the Future uses Survey Mechanics software for its online surveys, ensuring that surveys are conducted quickly and reliably, with results and analysis available virtually instantaneously.

In addition to online surveys, Shape the Future is able to deploy the most appropriate, pragmatic and representative methodologies for its surveys (both quantitative and qualitative), including focus groups, telephone surveys and face to face interviews.

The company's mission is to deliver high quality research supported by practical advice, as quickly as possible and at competitive prices.

Services

Shape the Future provides the following services¹:

Quantitative surveys:

- online
- phone (inbound and outbound)
- postal
- face to face
- hall tests

Qualitative research:

- Depth interviews, Focus groups

Desk research

In addition, we can provide leading edge advice and consult on:

- Routes to market and channel strategy
- Services marketing
- Marketing and communications strategy
- Web optimisation
- Website design and web marketing

¹ All surveys are conducted according to the code of conduct of the Market Research Society
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Organisations for which Shape the Future has conducted surveys include the following:
Business to Business

4D Delivery
 Accord Westminster
 Adaptive Automation
 Angels Den
 Armstrong Floors (Netherlands)
 Aruba Networks
 BNI
 BPIF Cartons
 Business Referral Exchange
 Casio
 Cirrus Research
 Connaught
 Criterion Partnership
 De Poel Consulting
 EOJR Management Consulting
 Energetics
 Glengarrie Consulting
 GSF Car Parts
 Interserve FM
 ITW Nexus
 Learning Technologies
 Leaseplan
 Maddison Group
 Mex (Germany)
 Microsoft
 Moving Edge
 Need More Sales
 OCS
 Ocean Intelligence
 QA Ltd
 Rainbow International
 Reed Employment
 Royal Bank of Scotland Group
 Savills (Commercial)
 Simply Contracting
 Sitecore
 Spectrum Housing
 SSL
 STL Technologies
 Stratford BID
 Talent Innovations
 Thomsons
 Worcester BID
 World Textile Publications
Media and communications
 Athletics Weekly
 Azzurri
 Crimson Tide
 Current TV
 EasyPress
 National Geographic (UK, USA)
 Satlynx (Germany)
 Screen East
 Zen Internet
Health
 Nature's Best
 ResMed
 RD Health

PR and Marketing

BGB Group
 Boost Marketing
 BottlePR
 Centreground Political Communications
 Clock Creative
 David Andrew Design
 Disgusted of Tunbridge Wells
 Global Beach
 GTA Advertising
 Hemming Information Services
 Ledger Bennett
 Lewis PR
 Pegasus PR
 Severn Communications
 The Event Workshop
 VisionOne Research
 Waggener Edstrom
 Weber Shandwick
 Yellow Door
Foods
 3663
 Amcor Packaging
 Asda
 Brambles Foods
 Caterlyst
 Cheetah Country Beef
 Clipper Teas
 Cuisine de France
 Keith Spicer
 MeadWestVaco (UK, US)
 Oui3
 Princes
 Real World Marketing
 Weight Watchers (Petty Wood)
 Winfresh
Charities
 Army Benevolent Fund
 British Red Cross
 Cats Protection
 Eyecare Trust
 Know How Non Profit
 (Cass Business School)
 Network for Social Change
 Shaw Trust
Leisure and travel
 Accor Hotel Group
 Biggin Hill Airport
 Blenheim Palace
 Blue Republic
 Cadogan Holidays
 Camra
 Crown River Cruises
 Louis Hotels (Greece)
 Pacific Direct
 Travel Offers

Consumer

BMB Clothing (Suits You)
 CSSC
 Education
 Energy Helpline
 Ford
 Garware
 Get Outer Space
 Go-Ahead Group
 Gossard
 Hop Farm Family Park
 Kelkoo
 KidStart
 Logikor
 NFU Countryside
 PayOffline
 Retail Revolution
 Royal Southern Yacht Club
 Sammon Builders
 Scrivens Opticians
 Seiko UK
 SMART Insurance
 SodaStream
 Spearmark
 Sterling Insurance
 Streamline Foods
 Study Group
 Tetrosyl
 Titus Group
 Topps Tiles
 Unilever
 Weight Watchers
 ZangBeZang
 Zoombak
Public sector
 Havering Council
 Highways Agency
 Kent County Council
 London Borough of Lambeth
 London Borough of Bromley
 Mansfield District Council
 Northamptonshire County Council
 Sussex Improvement Partnership
 West Midlands Police Authority
 Westway Development Trust
Education
 Leeds Metropolitan University
 Loughborough University
 University of Exeter
 University of Glamorgan
 University of Kent
 University of Surrey
 University of Teesside
 Walsall Extended Schools Cluster
Professional bodies
 Chartered Institute of Arbitrators
 Chartered Institute of Insurers
 Institute of Manufacturing
 Chartered Institute of Marketing

Products and services researched to date by Shape the Future include the following:

Airport/airshow	Foreign Exchange	Presentation skills
Alumni Association	Frozen dessert	Preserves
Alternative health products	Funeral services	Price comparison site
Back up services	Garage services	Product safety
Bakery products	Genetic testing	Publishing
Beauty services	Hair care	Recruitment
Beef	Healthy eating	Remote care systems
Buildings	Heating systems	Respiratory equipment
Building services	Hobby supplies	Retail branding
Bus services	Home automation	Retail outlets
Bus passes	Honey	Risk (attitudes to)
Business networking	Hospital catering	River boat services
Cars	Hotels	Robot welders
Car parts	Industrial buildings	Roofing products
Car washes and polishes	Information systems	Sandwiches
Catering supplies	Insurance services	Satellite communications
Charities	International pricing	Satellite tracking systems
Child care services	Internet service provision	Schools and colleges
Children's lunch boxes	IT training	Sexual abuse
City visitors	Janitorial supplies	Shoe retailing
Cleaning Services	Laboratory equipment	Shopping areas
Clothing	Land regeneration	Shopping habits
Clothing retail	Language tuition	Smoke detection
Competition testing	Leak detection	Social media in business
Construction work	Lingerie	Software
Contracting	Local manufacturing	Solicitor service levels
Convenience foods	Lottery machines	Stately home
Council services	Maintenance services	Supermarkets
Dog training	Magazines	Tea
Drinks preparation	Marketing associations	Telephony
Economic outlook	Medical apparatus	Temp services
Eczema treatments	Membership	Theme park
Education	Mobile communications	Tiling
Educational software	Motoring club	Tinned foods
Emergency information	Nail care	TV production
Employment services	Nutritional supplements	TV programming
Energy pricing	Office services	Utilities
Environmental concerns	Office furniture	Venture capital
European employment trends	Oil bunkering	Warehouse equipment
Events	Olympic Village (London 2012)	Watches
Facilities Management	Online retail	Web design
Fast food	Opticians	Web development tools
Film production services	Packaging	Web purchasing services
Financial services	Patient ventilation	Website concepts
Flooring	Photographic services	Window tinting
Food packaging	Police authorities	Yacht racing

Surveys have been conducted around the World in English, French, Dutch, German, Arabic, Swedish, Portuguese, Polish, Spanish, Italian and Chinese. Other languages can be accommodated.

Topics researched include new products and services, employment policy, pricing sensitivity, routes to market, brand awareness and perceptions, marketing effectiveness, customer satisfaction, lost customers, customer loyalty and failed bids.

Peter Martin BA MBA DipMRS MMRS, Managing Director

Peter is an experienced marketing strategist with over 30 years experience at senior level in industries including telecoms, consumer electronics and B2B products and services. His research career began with his first permanent role, where he was involved in major decisions regarding new technology for the UK's largest consumer electronics company. He has worked in senior marketing and research roles for companies including Thorn EMI, Thomson, Bose, BT, Mercury and Rediffusion Music.

For the last 15 years he has worked as a consultant and advisor to numerous businesses around the world. These include ARM, Audi, Brit Insurance, Celoxica, Centrica, Cable & Wireless, Crimson Tide, Reed Business Information, BAE Systems, EDS, Ericsson, MessageLabs, QA Group, Royal Mail, Sony, Sun Microsystems, Toyota, WPP Group and BT Wholesale, for whom he researched internet service providers and subsequently developed the marketing strategy for broadband.

He is an expert in routes to market and the marketing of services and is also a director of RationalChoice, which specialises in these areas.

Peter is also working on pioneering new research techniques in the music industry, and is a co-founder of specialist music research company Sound Findings. In addition, he is a director of Survey Mechanics, a company launching a ground-breaking new online research system.

He is a full member of ESOMAR and the Market Research Society whose diploma he holds. He also has an honours degree in Business Studies and an MBA from Hull University, which he gained with distinction.



Shape the Future

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www.shape-the-future.com

Skype: shape-the-future

Client testimonials:

Professor Steve Robertson, Centre for Men's Health It's been a pleasure using Shape the Future, you've been flexible, thorough and able to meet our deadline whilst delivering the required quality of product. It may be that we have more similar work to do in the coming year/years and would be happy to utilise your services again

Paul Bryan, Managing Director, Spectrum Property Care We gave Shape the Future a challenging brief to research the facilities management market in the South of England and draw-up new business targets. The research output helped us to define our company growth plan and concentrate scarce resources on productive areas. During the process we found Peter Martin to be both enthusiastic and amiable whilst also quick to provide advice and add-value through his marketing experience. I would recommend Shape the Future for any similar project

Professor Ian Bruce, President for Charity Effectiveness, Cass Business School: what I liked about working with Shape the Future was: The brilliant live Pop-Up onscreen questionnaires which meant we suddenly found out so much about our visitors who were not registering; The helpfulness – nothing was too much trouble, it made the work FUN! No “yes buts” only “how soon do you want it?”; The reassurance that we were working with a knowledgeable, qualified researcher – it helped us guarantee meaningful data, i.e no “rubbish in – rubbish out” syndrome. It gave us such a hugely improved understanding of who are visitors are and what they like about our offering and where we need to improve – brilliantly helpful

BPIF Cartons: “thank you so much for coming to deliver the results of the study you undertook for us. The presentation was very interesting and certainly I know the audience found it a very good and interesting piece of work that will help our industry to better focus arguments now we have a clearer understanding of what people actually think.”

Ettles UK Ltd: It was a pleasure working with Peter Martin of Shape the Future. We were delighted with the value, high quality and speed of service received. Peter's customer focus was exemplary. Thanks again, Peter, and we would not hesitate in recommending you to others.

Northamptonshire County Council: Shape-the-Future were helpful throughout the process and their communication and response was second to none ... overall a great value for money service.

Keith Spicer Limited: Peter Martin of Shape the Future is a wise, considered character with considerable experience in his sector. Our online quant research was delivered swiftly & simply without a single intake of breath! Wouldn't hesitate to recommend his services again in the future – good old fashioned service with a smile, can't be beaten as far as I'm concerned.

Chartered Institute of Arbitrators: We needed to survey our 12,000 members in a short time frame. Shape-the-Future were wonderful, and took all the pain out of the task, from helping us with the question design to producing professional results charts that we presented to our Boards. Shape-the-Future actually made the whole process seem “too easy”! I would recommend them to anyone who wants a professional job done in a calm, hassle-free way.

Txtsav: Having scoured the market for a suitable and cost-effective market research agency we were very pleasantly surprised with finding Shape the Future. They instantly understood what our requirements were and got working on the brief immediately after our initial call. We were particularly impressed with how cost-effective they were especially given the fast turnaround and high quality of their results

Melfar Meats: This was the first piece of market research I have ever done, Peter Martin at Shape the Future made the whole process very easy and stress free. He gave me help understanding the findings and some advice going forward. I would definitely use them again in the future.

Iqui Research: Shape the Future provided a first class service. From initial questionnaire design through to ensuring we had the right analysis to meet our needs, nothing was too much trouble. In short, we're more than happy to recommend what is an excellent, cost-effective solution for online surveys

London Borough of Lambeth: We have worked with Shape the Future twice now to survey our internal customers (approximately 5000 people). On both occasions they were flexible, helpful and responsive throughout, including accommodating change requests at short notice. I would have no hesitation in using Shape the Future again.

London Borough of Havering: Our project board asked to feed back the following to you: They were really impressed with the short timescales that you met. Extremely pleased with the price you have quoted for all the work and very impressed with the content of the interim reports

National Geographic: Undertaking our research with Shape-the-Future was quick, easy and very cost-effective. They grasped our issues and the oddities of our business immediately, which was very reassuring and kept the time that we needed to input to a minimum... the final summary was an excellent, easy-to-read document that we readily shared with colleagues in overseas offices. We would have no hesitation in working with Shape the Future again, or recommending them to others

KidStart: I found Shape-the-Future very responsive and flexible and helpful. They rapidly understood our requirements, adjusted the proposal, research and analysis to our specific needs and were very quick in getting results back to us. We would definitely use them again on similar projects

PayOffline: ... they understood the idea and most importantly what our objectives were for the consumer research study and why we needed it. They are prepared to give 100% to the project and they add value to the decision making process. Shape-the-Future scored 10 out of 10 in all of these areas, but I think what was most impressive was the highly professional and timely manner in which the research study was put together and executed, the whole process from start to finish was completed in less than 4 weeks. I am sure that they will continue to grow and prosper and I would not hesitate to recommend them

Accord Westminster: We used Shape-the-Future to survey educational establishments in the South East to determine their current levels of maintenance and repairs. In the planning phase of the survey their team gave us great advice and guidance ... The support during this stage and how the team worked with our desired objectives from the project were invaluable. At all times the team consulted with us and made any changes we requested as well as recommending a few others which proved to be very helpful. They were also keen to discuss the results and re-work the analysis so that it matched perfectly with our requirements.

LastMinuteHairandBeauty.com: Shape-the-Future gave us some very useful advice on how we could use a survey to help our business. We asked them to set up a survey for us at very short notice and based on a very short phone conversation produced a survey that did almost exactly what we wanted. We were looking at our first results within six hours of commissioning the survey and it was completed over a weekend. In just over one working day we received a report we can use in our marketing and PR. Very fast, very professional, very helpful and great value.

Cebrium: We did a market research survey with Shape the Future, combined with a mental agility test and product sampling of a food supplement. This was a project that was quite complicated due to the nature of our product, and the approach we were looking for was an unusual direction. Shape the Future proved that they were able to "think outside of the box" and provide a solution that helped us reach our goals. They were always very flexible, friendly and delivered high quality. I truly recommend working with them and look forward to our next project

QA-IQ: I'd recommend Shape-the-Future most highly. They achieved a very good response rate on our client survey, very quickly and at a competitive price. The survey design worked perfectly and the presentation of the results was a model of clarity, helping us to achieve our objectives almost immediately

BottlePR: We contacted Shape-the-Future when we needed to measure awareness and needs for our client, SEEDA, prior to a campaign. They immediately understood what we needed and rapidly set up the survey. They achieved a very high response rate and delivered the results extremely quickly, updating us throughout. An excellent service and wonderful value

Qwabby: "I shall have no hesitation in using your service again or to recommend your company to my friends. It has been a pleasure to do business with you and I look forward to working with you again in the future"

Cheetah Country Beef: Shape-the-Future's attention to detail is amazing. The dedication and thorough job they performed far exceeded my expectations. I will most definitely use Shape-the-Future again for my market research needs.

Iswap: Shape-the-Future put together our questionnaire extremely rapidly and we were very pleasantly surprised at our response rates. The speed at which we received the presentation of the results was also impressive.

Flights4all: ... we were immediately impressed by the speed with which they understood our requirements and in short turn created a satisfaction survey that captured our key performance indicators. The feedback survey is very easy to use as witnessed by the excellent response rate it has elicited. The speed at which results were delivered (overnight) was most impressive.

The Wellness Solution: I needed to understand my client's customers' views quickly for a major strategic review. Shape-the-Future immediately provided me with a proposed questionnaire and survey structure which met our needs almost entirely. ...changes were turned round in hours and the survey was live straightaway. I am sure that Shape-the-Future's intuitive and friendly survey design contributed greatly to the phenomenal response rate of over 40%. In addition they offered some valuable interpretation of the results. Tremendous value

Text2Rate: We were very pleased by your professional and urgent response to our market survey needs. The attention to detail and the friendly way our business was dealt with was brilliant. We will definitely recommended Shape-the-Future to colleagues and friends.

Moments2Canvas: I have found Shape the Future's services of great value. Shape the Future provided an expert service even when I asked them to completely change the research to fit a new market half way through the initial scoping period. They have enabled me to build a good foundation to further develop a business idea and as a result, have not just delivered the research that I required, but have become a well-respected partner to enable my business to grow

Appendix 2. Ethical approval letter



**School of Health and
Education**
The Burroughs
London NW4 4BT

To: Anne Elliott

www.mdx.ac.uk
Main switchboard:
020 8411 5000

Date: 12 August 2013

Dear Anne

Re Application 1011 "Head people or body people: An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective" Supervisor: Margaret Volante Category: A2

Thank you for the response which adequately answers the ethics committee's queries. On behalf of the Health Studies Ethics sub-Committee, I am pleased to give your project its final approval.

Please note that the committee must be informed if any changes in the protocol need to be made any stage.

I wish you all the very best with your project.

Yours sincerely

A handwritten signature in black ink that reads "Gordon Weller".

Prof. Gordon Weller
Chair of Ethics Sub-committee (Health Studies)

Appendix 3. Participant information sheets and consent forms for all three studies



PARTICIPANT INFORMATION SHEET (PIS) AND CONSENT FORM

STUDY 1. Health and fitness professionals interviews

1. Study title

Head people or body people: An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective

2. Invitation paragraph

You are being invited to take part in a research study about whether experiences in youth and adolescence can affect exercise uptake in middle age. Please take time to read the following information carefully and discuss it with others should you wish. When you have finished reading, if there is anything that is not clear or you would like more information please ask us. Details of how to do this are given at the end of this information sheet. This information sheet is yours to keep whether you decide to participate in the study or not. It is important that you take time to decide whether or not you wish to participate.

Thank you for reading this.

3. What is the purpose of the study?

The study aims to investigate whether early experiences in adolescence can have an effect on physical activity levels in middle-aged men and women.

4. Why have I been chosen?

You are invited to be a participant in this study as you fit the criteria of the study. You are a health and fitness professional and have experience of working with this age group.

5. Do I have to take part?

Taking part in the research is entirely voluntary. It is up to you to decide whether or not to take part. You will have been sent this information sheet by email. If you do decide to take part you will be asked to give your participation consent by either completing and emailing back the attached consent form or by giving verbal consent at the beginning of the telephone interview. You have the right to refuse to answer any questions asked. If you decide to take part you are still free to withdraw at any time and without giving a reason. We are looking to interview 15 health and fitness professionals.

6. What will happen to me if I take part?

The study in its entirety will last for 2 years. You will take part in a telephone interview that will last approximately 5-10 minutes. The interview will be recorded digitally and consist of just you and the researcher.

7. What do I have to do?

You will be asked questions relating to your Personal Training experiences of working with middle-aged men and women. You will be asked to verbally consent to being a participant before the interview starts.

8. What are the possible disadvantages and risks of taking part?

There are no intended disadvantages or risks in taking part in this study, though time for participating may be seen as a disadvantage.

9. What are the possible benefits of taking part?

There are not likely to be any direct personal benefits to your taking part in this study. The information we get from this study may help us understand how to help people have a healthy lifestyle in middle age.

10. Will my taking part in this study be kept confidential?

All information that is collected about you during the course of the research will be kept strictly confidential. Any information about you, which is used, will have your name and address removed so that you cannot be recognised from it and any data extracts used to present the findings will be anonymised using a pseudonym.

All data will be stored, analysed and reported in compliance with the Data Protection Legislation of the UK.

11. What will happen to the results of the research study?

The results of this study will appear in a Doctoral thesis. The expected completion date is December 2015. You will be able to obtain a copy of the published results by contacting the researcher. Findings from the study will be disseminated to interested organisations. You will not be identified in any publication.

12. Who has reviewed the study?

This study has been reviewed by Middlesex University, School of Health and Education, Health Studies Ethics sub-Committee.

13. Contact for further information

For further information please contact:

RESEARCHER

Anne Elliott

Middlesex University, Hendon Campus, The Burroughs, Hendon
London NW4 4BT

Email: a.elliott@mdx.ac.uk Tel: 020 8411 2256

SUPERVISORS

Dr. Margaret Volante

Middlesex University, Archway Campus, 6th floor, Furnival
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London N19 5LW

E.mail: m.volante@mdx.ac.uk Tel: 020 8411 5000

Dr. John Watt

Middlesex University, Hendon Campus, The Burroughs, Hendon
London NW4 4BT

Email: j.watt@mdx.ac.uk Tel: 020 8411 5000

Thank you for taking part in this study! Version 4 (24/7/13)

Please keep a copy of this information sheet for your information.

Participant Identification Number:

CONSENT FORM

Title of Project: Head people or body people: An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective

Name of Researcher: Anne Elliott

1. I confirm that I have read and understand the information sheet dated 8/06/13 for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I agree that this form that bears my name and signature may be seen by a designated auditor.
4. I agree that my non-identifiable research data may be stored in National Archives and be used anonymously by others for future research. I am assured that the confidentiality of my data will be upheld through the removal of any personal identifiers.
5. I understand that my interview may be taped and subsequently transcribed.
6. I agree to take part in the above study.

Name of participant Date Signature

Name of person taking consent Date Signature

**MIDDLESEX UNIVERSITY
SCHOOL OF HEALTH AND EDUCATION**

health STUDIES ethics SUB-committee

PARTICIPANT INFORMATION SHEET (PIS) AND CONSENT FORM

STUDY 3. Narrative Interview participants

1. Study title

Head people or body people: An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective

2. Invitation paragraph

You are being invited to take part in a research study about whether experiences in youth and adolescence can affect exercise uptake in middle age. Please take time to read the following information carefully and discuss it with others should you wish. When you have finished reading, if there is anything that is not clear or you would like more information please ask us. Details of how to do this are given at the end of this information sheet. This information sheet is yours to keep whether you decide to participate in the study or not. It is important that you take time to decide whether or not you wish to participate.

Thank you for reading this.

3. What is the purpose of the study?

The study aims to investigate whether early experiences in adolescence can have an effect on your physical activity levels in middle age.

4. Why have I been chosen?

You are invited to be a participant in this study as you fit the criteria of the study. You are between the ages of 45-65 and were educated in England.

5. Do I have to take part?

Taking part in the research is entirely voluntary. It is up to you to decide whether or not to take part. You will have been sent this

information sheet by email. If you do decide to take part you will be asked to give your participation consent at the beginning of the telephone interview or by signing and electronically returning the consent form. You have the right to refuse to answer any questions asked. If you decide to take part you are still free to withdraw at any time and without giving a reason. We are looking to interview 20 individuals.

6. What will happen to me if I take part?

The study in its entirety will last for 2 years. You will take part in an interview that will last approximately 20 minutes. The interview will be by telephone. The interview will be recorded digitally and consist of just you and the researcher.

Please note that in order to ensure quality assurance and equity this project may be selected for audit by a designated member of the committee. This means that the designated member can request to see signed consent forms. However, if this is the case your signed consent form will only be accessed by the designated auditor or member of the audit team.

7. What do I have to do?

Taking part involves answering questions in a semi-structured interview that will last approximately 20 minutes. You will be asked about your experiences of physical activity in your adolescence and now. You will be asked to sign and return a consent form or give verbal consent before the telephone interview.

8. What are the possible disadvantages and risks of taking part?

There are no intended disadvantages or risks in taking part in this study, though time for participating may be seen as a disadvantage.

9. What are the possible benefits of taking part?

We hope that participating in the study will help you understand your relationship with physical activity, however, this cannot be guaranteed. The information we get from this study may help us understand how to help people have a healthy lifestyle in middle age.

10. Will my taking part in this study be kept confidential?

All information that is collected about you during the course of the research will be kept strictly confidential. Any information about you, which is used will have your name and address removed so that you cannot be recognised from it and any data extracts used to present the findings will be anonymised using a pseudonym.

All participants will be given a pseudonym from the beginning of the project to provide confidentiality. *At the completion of the project non identifiable research data may be stored in National Archives. If the data is not stored in National Archives it will be destroyed after five years.* All data will be stored, analysed and reported in compliance with the Data Protection Legislation of the UK.

All data will be stored, analysed and reported in compliance with the Data Protection Legislation of the UK.

11. What will happen to the results of the research study?

The results of this study will be published as a Doctoral thesis. The expected completion date is December 2015. You will be able to obtain a copy of the published results by contacting the researcher. Findings from the study will be disseminated to interested organisations. You will not be identified in any publication.

12. Who has reviewed the study?

This study has been reviewed by Middlesex University, School of Health and Education, Health Studies Ethics sub-Committee.

13. Contact for further information

For further information please contact:

RESEARCHER

Anne Elliott

Middlesex University, Hendon Campus, The Burroughs, Hendon
London NW4 4BT

Email: a.elliott@mdx.ac.uk Tel: 020 8411 2256

SUPERVISORS

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Middlesex University, Archway Campus, 6th floor, Furnival
Building, Highgate Hill
London N19 5LW

E.mail: m.volante@mdx.ac.uk Tel: 020 8411 5000

Dr. John Watt

Middlesex University, Hendon Campus, The Burroughs, Hendon
London NW4 4BT

Email: j.watt@mdx.ac.uk Tel: 020 8411 5000

Thank you for taking part in this study!

Version 4 (24/7/13)

You will be given a copy of the information sheet and a signed consent form to keep.

Participant Identification Number:

CONSENT FORM

Title of Project: Head people or body people: An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective

Name of Researcher: Anne Elliott

1. I confirm that I have read and understand the information sheet dated 8/06/13 for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.
3. I agree that this form that bears my name and signature may be seen by a designated auditor.
4. I agree that my non-identifiable research data may be stored in National Archives and be used anonymously by others for future research. I am assured that the confidentiality of my data will be upheld through the removal of any personal identifiers.
5. I understand that my interview may be taped and subsequently transcribed.
6. I agree to take part in the above study.

Name of participant Date Signature

Name of person taking consent Date
(if different from researcher) Signature

Researcher Date Signature

1 copy for participant; 1 copy for researcher;

**MIDDLESEX UNIVERSITY
SCHOOL OF HEALTH AND EDUCATION**

health STUDIES ethics SUB-committee

**STUDY 2. Participant information sheet for survey
participants**

Thank you for agreeing to participate in this study survey. This information sheet outlines key information in regard to the study.

The study title is, 'Head people or body people: An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective'. The study aims to investigate whether early experiences in adolescence can have an effect on your physical activity levels in middle age and in its entirety will last for 2 years.

You are invited to be a participant in this study as you fit the criteria of the study. You are between the ages of 45-65 and were educated in England. All information that is collected about you during the course of the research will be kept strictly confidential and anonymous. All data will be stored, analysed and reported in compliance with the Data Protection Legislation of the UK. The information we get from this study may help us understand how to help people have a healthy lifestyle in middle age.

Taking part in the research is entirely voluntary. It is up to you to decide whether or not to take part. The survey will ask you questions about your experiences of physical activity and will take approximately 5 minutes. Completion and submission of the form will constitute consent to participate from you.

This survey is anonymous. There will be further follow-up interviews, face to face or by telephone to find out more about participants answers in depth. If you would be happy to be interviewed in this follow up section please leave your contact details at the end of the survey. Your contact information will be kept strictly confidential. The researcher will contact you to make arrangements for the interview.

The results of this study will be published as a Doctoral thesis. The expected completion date is December 2015. Findings from the study

will be disseminated to interested organisations. You will not be identified in any publication.

This study has been reviewed by Middlesex University, School of Health and Education, Health Studies Ethics sub-Committee.

Thank you.


Appendix 4. Study 1 - Questionnaire Draft 1, 2, 3

The questionnaire for study one went through four stages of change. The initial draft had come out of practitioner observation and information that had emerged from the literature search. It was considered to be too prescriptive, did not allow for other perspectives and made assumptions.


Draft 1 5th August 2013

Personal Trainer Questionnaire

Thank you for taking part in this questionnaire. The questions relate to any of your clients (male or female) who are between the ages of 45-65 and went to school in England. Your clients names are not needed and their identity will be anonymous.

1. Do you have clients who fit the profile above?
2. As part of your training style do you chat to your clients?
3. Has the topic of their experiences of physical activity at different points in their life occurred? 

If you have answered 'yes' to questions 1,2, and 3, please continue by considering conversations you have had.
Have any of these themes been mentioned by your clients in the course of your training
They have talked about...

4. how they loved PE at school
5. how they hated PE at school
6. during their childhood their family were physically active
7. during their childhood their family weren't physically active
8. they belonged to a school team ie football/netball/hockey/swimming
9. they tended to have friends who also didn't like PE 
10. their PE teacher was a positive influence on them doing physical activity as an adult
11. how an unpleasant incident during PE put them off it
12. a single event in their childhood or youth is strongly linked to how much physical activity they did as an adult

If you would be prepared to describe your experience in more detail, please give a contact number or email here

? Other people report same pattern.

? other people report different influences
⇒ design main survey better.

The second draft sought to directly address these issues. It removed leading questions and allowed for participants to offer their own perspective. For example, it removed the assumption from the first draft that practitioners make conversation with their clients and in the second asked how practitioners found out about their clients, thus giving the participant the opportunity to describe their own practice and allowing for participants who might not talk to their clients.

Draft 2 16th October 2013

PERSONAL TRAINERS INTERVIEW QUESTIONS

In order to keep your clients confidentiality, please do not give me your client's names when answering the following questions

- 1) would you start by telling me about your personal training practice; where you train clients and the type of training you do including any specialism you have and use with clients.
- 2) how would you describe your clients age range, gender, types of occupation, fitness levels etc.
- 3) how do you find out about your clients lifestyle? Is it an ongoing process? How do you monitor it?
- 4) Is the clients past experience of physical activity ever discussed? And if so what periods of their lives that they have mentioned come to mind
- 5) Are there any specific events or experiences the client might have mentioned that come to mind?
- 6) I have noticed this phenomena in my own practice, have you seen it too...
- 7) Finally could you tell me your age and qualifications.

It was this same issue that was again honed in Draft 3. Question 3 was changed from 'How do you find out about your clients lifestyle; is it an ongoing process; how do you monitor it?' to 'How do you develop rapport or trust with your client?' – a more elegant solution. Question 4 on the other hand was changed to better reflect the ethos of the study; from, 'Is the client's past experience of physical activity ever discussed? And if so what

periods of their lives that they have mentioned come to mind?' to 'Do you ever discuss clients childhood, adolescent or adult experiences of exercise?'

Draft 3 22nd October 2013

PERSONAL TRAINERS INTERVIEW QUESTIONS

In order to keep your clients confidentiality, please do not give me your clients names when answering the following questions

- 1) Would you start by telling me about your personal training practice; where you train clients and the type of training you do including any specialism you have and use with clients.
- 2) How would you describe your clients age range, gender, types of occupation, fitness levels etc. and how long the average client stays with you.
- 3) How do you develop rapport or trust with your client?
- 4) Do you ever discuss clients childhood, adolescent or adult experiences of exercise?
- 5) Are there any specific events or experiences the client might have mentioned that come to mind?
- 6) I have noticed this phenomena in my own practice, have you seen it too... Finally could you tell me your age and qualifications.

Final 30th October 2013

The final draft again reworded question 4 to 'Do your clients ever raise childhood, adolescence or adult experiences of exercise'. A further question was added to find out how participants acknowledged past experience and how it was utilised in their present training. The order of questions was also amended to allow for a more flowing connection of ideas to take place.

These final changes were felt to be more effective and by being more succinct, reduced interview bias and gave participants free reign to answer however they wished.

Appendix 5. Study 1 - Sample transcript

Transcription of Interview with Personal Trainer

My name is XXXXX and I'm a personal trainer.

A. Thank you for agreeing to be part of this interview. Can I just say to you in order to keep your clients confidentiality do not give me your clients names when answering the questions and hopefully this interview will last about 20 minutes feel free to talk at will about what you want to mention. Would you start by telling me about your training practice and your clients and the types of training including any specialisation you have used with your clients.

P. Okay I own a personal training studio where I train many clients generally of a 45 to 50 years of age I am a boxer so a lot of the techniques I use come from a boxing background so both physically and mentally the aspects I bring to it most people come to see me for the boxing and then tends to learn that it is more deeper than just hitting pads and and the philosophy of training comes across so I've trained professional boxers as well as women that have never exercised before in their lives and 55 years of age like, the principles apply treating your training seriously whether it's just walking up hills or running marathons like

A. Can you tell me more about the actual physical practice like the sort of equipment you've got, what sizes your client base,

P. The client base is you're looking at about 15 to 20 clients averaging about 30 to 35 sessions a week the actual gym itself I got a treadmill spin bike punchbag TRX's all your normal gym equipment like dumbbells balls and medicine balls but a lot of it is done outside I really like to train outside it's more of a natural environment you can engage with client a bit more outside I think they can do a lot less stuff on their own outside as well they tend not to use the big machines so they can go home

A. I know you've already mentioned them but how about your clients their age their gender the type of occupations they do their fitness levels can you give me a good description of the full range

3.13 P. It does vary but in general I don't know off the top of my head exactly but most of them are female again most are housewives of the 50-year-old range again not really trained too much if any at all to an age where they possibly feel they should do something whether it's for a medical for their own personal kind of realisation that they need for being active for being made may be slightly overweight and more importantly have high blood pressure or even worse and we try and work on that and we start from basic exercising which can be a shock to their body just through experience from myself you it's quite a tricky situation sometimes because they are very very enthusiastic which is really good but their body has no experience of putting pressure through their joints and I had a lady recently she was just pushing and pushing and pushing and eventually her shoulder gave way her ligaments gave way and she had an operation on her shoulder and it was a learning curve for me as well as her and that it can be quite stressful and you've got be careful when it's trained all their life and they might not have

trained for a couple of years and go straight into doing intense activity and be absolutely fine the ligaments are absolutely fine they are strong and used to it so it's quite a tricky thing to kind of handle someone coming to you who's never trained before careful

A. So you said the clients they are mostly in middle age of those that are actually working what type of occupations do they tend to have

P. The ones that have occupations are most definitely office jobs that can be a problem in itself is well because that brings its own issues sitting at a desk for too long a period of time that most of them your office type jobs

A. What kind of level are they managers base level or are they company owners

P. Yeah I got a couple of company directors of their own businesses and others that are just senior roles in companies like banks and stuff not too many young or low-end type jobs really

5.43 A. So in terms of their socio economic status would you say they're very high income, comfortably off how would you describe them

P. I would say definitely from comfortable upwards like. It's quite an expensive market to not only personal training your not going to attract young or lower income people think that across-the-board really with all personal training

A. How do you find out that your clients lifestyle

P. I always intend to have a consultation right at the beginning I try to get quite involved in what they do and that's to find out where their at and the other real deep consultation to try and find out and why are they here the first question I ask people why are you sitting here why have you come to me it could be many reasons it could be because their injured it could be because from reasons I've mentioned before trying to lose weight because they just send a doctor high blood pressure I try to ask as many questions as literally when you wake up what you do what you eat how much activity do you have is it do you walk to the station even I try and ask as many questions as I can like

A. And so you have this initial consultation what happens when you are training them it is an ongoing process or not

7.27 P. It is tricky because hopefully things do change and we do our best if they need it we try to change their lifestyle and yes I try to gauge and try to and try to assess what we're doing having to make things better and sometimes

A. My last bit on that is how do you monitor lifestyle change

P. It's hard it can be quite hard especially the guys that are working because I have people who only see me once a week and is the only activity they do, it's not ideal but it's that it's better than none and I got others that I got a lady who I had to tell to stop exercising to limit the amount of exercising she is doing way too much so yes I try to ask questions and yet if I've only seen them for the week I'll ask them what have you done this week I need to know what you're doing and I try to ask everything like even six months down the line even though I know them very well I still that you want to because I try to

monitor everything it's a lifestyle thing it's not just about going to the gym and sweating it's about everything about what you're doing in between as well counting your steps for example counting how many steps you do in a day walking walking to the station walking the dog general activity is just as important may be even more important than the exercise itself so it's important to monitor that

A. Would you say you build up a rapport with them

P. Oh yeah definitely training fundamentally relies on rapport you can be the best trainer in the world your theory can be fantastic but if you haven't got rapport no client will stay with you will have to build up a rapport in that sense and also you want them to trust you so it's fundamental to have a rapport

A. 9.29 can I ask you you've mentioned a lot about how the rapport is based around physical activity and what they've been doing does it become more personal what I mean is does it go past talking about exercise

P. Yeah yeah it's like my wife said to me the other night it's like you're best friends with everybody like everybody is your best friend but that tends to happen naturally happens personal training is quite intimate as well they're telling you details that might so straight away you build a bond in a trust with each other and you will be sensible with that trust obviously you don't tell anybody you'll be discreet you could become friendly you become good friends and they like telling you are telling you some example even like their weight they wouldn't tell anybody else quite a lot of the time they're quite secretive and they're telling you there's a trust level there from day one and yes yes I exchange text messages continuously with clients and they tell me what they've done that day and even exercise socially they'll tell me what they've been doing socially which is nice because if I asked them to do something which is not necessarily something they want to do or agree with hopefully they trust me and I'll go along with it they hope and trust me

A. Is the client's past experience of activity ever discussed and if so what periods of their life mentioned come to mind

11.16 P. Like I said earlier the first question I ask is why are you here and my second that follows is what are your experiences it's important to know the journey they've had to get to this point whether it's to exercise or not whichever the case might be it's important to know past experiences meaning exercise terms It's important to know yes it's important to know first of all if they're used to a gym environment whether they use their bodies are used to having any form of stress put through it whether it's running walking lifting weights boxing whatever it might be and most of the time and lots of the time it's any not any of those really but then we wanna know and we wanna know what level they are at I need to gauge what kind of level they are at and physically so we need to know what interest you have concerns they might have with their body they might have come to me because they've experienced hip pain for the last few months and we've got to discover why you are experiencing and find the why's and can we fix that and it might be anything and as we start exercising they start to discover they've got a few issues that they didn't even know they had in the first place so yeah it can be quite tricky so past experiences are really fundamental with any person let alone someone who hasn't exercised the 50 years engage with that

A. I'm now talking about the study when you've built of this rapport with them and they trust you and are relaxed with you and maybe talking about past physical activity experiences does anything in particular come to mind any

particular story that someone's told you about from a particular point in their life

13.40 P. not really like many of them refer to being a child strangely enough like because most of the time as it's the only time they've ever done exercise at school and they will say I used to do athletics and what age at 15, 15,16 at school so that's probably the only time a lot of the time anyway they will refer to past activities in an exercise sense or you might have a guy who's tried to play a little bit of football in his later days cos he enjoys playing football he wants to get fitter but mainly it's like the only time they've done exercise at any degree is from school and they've not even thought about exercise but it seems to be more of a trend in gyms in general over the last 10 as a trainer that is built more of an understanding of the body and a perception of exercise that has been created and people are becoming much much more aware physically of the body also of health so it's becoming a really big thing and everybody and everybody knows somebody that's running a marathon or doing something triggers something in their head like I should do that and it's a growing trend a good trend

15.09 A. Just to pull you back to when talking about their past experiences and you mentioned most of them talked about their school experiences can you tell me what kind of stories are they good experiences are they bad experiences what kind of stories are you hearing

P. More as a kind of bad but not necessarily good either like they they don't like most people who were really good at sport at school would continue with the sport into their 20s and 30s possibly like some of them yes maybe think had experience of being picked last in PE and they still have that image in their head of standing waiting to be picked which is obviously going to have an effect on them but most of the time just a case of remembering playing netball or the last time they've actually done some activity of physical activity but not good or bad when I asked a question or put it to them when did you train last, they refer straight back to then it's sad really they spent 20 years of their life or so doing nothing on an exercise basis anyway

A. Did they tell you why that was the last time they did exercise

P. I don't think they consciously decide I'm not going to exercise it's probably like I said before it's a trend that is built up but also in a sense they got away with not exercising so it is just a physical appearance type attitude then they got through their 20s possibly their 30s with actually being fine and then all of a sudden they might have had children and they feel they want to get that body back that 20-year-old body back you know what I mean so that's definitely one of the reasons

17.07 A. Talking about People's memories of their physical activity well whenever, is there any specific events any specific stories the people told you that really come to mind

P. No not really nothing of note to be honest no not really I've had a couple of guys of course being from the boxing background I was chatting to a guy it is not actually a client that I've helped him with some advice on training the guy he told me he was 62 I believe and we were both just chatting we were both in the boxing gym and he was quite evidently overweight not hugely but not in particularly good shape and we were both just hitting the bags and chatting to each other and we got talking and he started reminiscing he was an Olympian he turned round and said he was in the Olympics I think it was in the 80s and he was thinking about doing a white collar boxing match so

straight away I fell in love with the guy this guys fantastic he went to the Olympics he's really cool and and he was trying to emulate his past and I was trying to put him off it anyway anyway he was still living he still had that image of him in his 30s or definitely mid 20's of competing and definitely being in shape and he missed that feeling of being really really fit but apart from that he was quite a cool guy

19.09 A. One last question I've noticed a theme that happens in my own practice and I'd like to just outline it and ask you if you've noticed or if it happened in your own practice I also have male and female clients and I build up a rapport with them I talk about their past experiences with them I notice they talk a lot about school as being one of the last major times they did activity and I found that some people exactly like you who liked doing exercise carried on doing exercise for the rest of their lives however I also noticed there was a significant number of clients who when they thought about PE at school remembered a specific event being left last or being forced to jump over a horse in the gym or being picked on because they haven't got the right blue serge knickers and they can remember the event because they were embarrassed or humiliated and actually it's that that seems to be the point where they don't do any exercise until they come to me do you recognise that or is it not what you've experienced

20.34 P. Yeah definitely recognise it say yeah there's been a couple of incidences when people have told me they were the last to be picked but school for me and hearing experiences about school School was competitive like and I was a sportsman so obviously I love my PE I'm sure there were many kids in my class that didn't and they experienced maybe the opposite to what I did but I do agree with the competition of sport and sport in schools so yes there are times when a kid won't feel good but there will also be times when because of that competition there will be kids that thrive on that and will succeed from that like so you might have people that think yes like have bad experiences but I was because of being put in a situation competitiveness I thrived and can actually remember positive things so being put in the situation where you have say a race or some sort of competition that's fantastic and it's etched in my brain as well out of all those 30 kids I won and I was done very well but on the other hand I went into an English class and I felt like the kid who was being picked last and wasn't doing so great that my point is that I think it's a good thing but you don't want people to feel bad you don't want that person to feel bad you need to be inclusive of everybody but it's definitely had an effect on people like you said yourself and this is 20 or 30 years later so it had a significant effect without them consciously knowing sometimes like when you start talking to them like you said the first thing they go back to wish that point and they might not have thought about that point before it's there at the back of their brain it's the same with me with my English class certain memories of my teacher and being embarrassed at certain points wasn't as good as other kids and it's probably no different for them with their exercise but I don't necessarily say it's a bad thing just that you should include everybody be inclusive and if so maybe who knows those people could have carried on with their exercise and not had high blood pressure in later life and high cholesterol problems and stuff who knows but yes everybody should be included in exercise

A. Thank you so much for taking part

23.00 P. It was a pleasure no problem thank you

Appendix 6. Study 2 - Survey preparation Draft 1-9 and pilot questionnaire

Initial Profiling exercise 8/8/13

White (2009, p. 39) says, *'Problems with research questions often originate in a failure to consider all the stages of inquiry that must be undertaken before certain questions can be raised'*. This had great resonance with the researcher who had spent a time in her career as a Creative Group Head in various Advertising Agencies in the 1990's and 2000's. Her formative learning in this environment had been at a time before such practices were codified academically; 'Marketing' or its like were not yet university options, it was very much a vocational industry with a theoretical foundation of tacit Industry understanding of advertising practice and of implementing what worked: when trying to sell soap powder, it is paramount to know the customer; who they are, why they need the product, how does it help them, what do they want from life. These seemingly amorphous questions needed to address an holistic vision of who the purchaser was. The consideration of this buyer took into account their history before the purchase and their aspirations for after the purchase. It was hard-wired into practitioners to ask first and foremost, "who is my buyer", and to expect a description of an individual. These profiles were built through preparatory research undertaken by the Agency on behalf of the client, together with Industry systems of profiling such as the Social Grading system developed from the British National Readership Survey (NRS).

This sense of profiling on a daily basis gave practitioners an innate understanding of potential clients. Therefore, it was instinctive to start the development of study 2 with such a profile of an 'active' person and an 'inactive' person. These could become the starting point for the questions in

The initial draft emerged from a consideration of the profiling exercise previously described. It consisted of a list of statements such as, 'In my job I am predominantly active'. They were drawn around aspects or themes that had been used in the original profiling exercise and covered all ages of life from adolescence to middle age. The list was wide ranging but as it grew, it became evident that it needed to be systemised. This was the first major consideration. How should such groups be mapped, chronologically or thematically? As the statements covered the whole life it was decided to group them chronologically. An issue brought up at this stage in discussion with a supervisor was that the body of statements were weighted around adolescence due to the anecdotal narratives originally observed and reported as being where early physical activity profiles were forged. A criticism was that there was no allowance for the critical stage to have been earlier or later. The internal validity required work to give the study more robustness.

Version 2 addressed the criticisms; in the main body, statements were refined, reworded and new ones added, they were also grouped into: childhood, adolescence, young adulthood, adulthood and old age. As the questionnaire began to take substance, the type and layout for each statement emerged and was integrated. It is important to note here that the method used has fitted the ethos of the project being Pragmatic in nature. It emerged as the 'appropriate tool' to analyse the questions.

At this point in the development the format reflected the profiling example with assumed 'active people' characteristics on the left and the 'inactive people' characteristics on the right with a choice option in between for participants to rate their response. For example,

‘I loved PE at school	1 2 3 4 5	I hated PE at school’
CHILDHOOD		12345
My parents played sport		My parents had no interest in sport
My parents gave me no encouragement to be physically active		
My parents had no interest in sport at all		
I played physical games with friends		I played mental games with friends
I was always playing outside		I spent most of my time indoors
I have good memories of play as a child		I have bad memories of play as a child
ADOLESCENCE		
I loved PE at school		I hated PE at school
PE was my favourite subject		PE was my least favourite subject
I did not participate in extra curricula sport		
I loved the PE teacher		I hated the PE teacher
My experiences in PE were excellent		My experiences in PE were terrible
I belonged to after school clubs that involved sitting ie art/music		
I belonged to clubs outside school that involved sitting ie art/music		
I found PE easy		I found PE difficult
YOUNG ADULTHOOD		
I got a job/apprenticeship		I went to college/University
I spent a lot of time sitting reading and writing		
I have lots of friends		I had a few close friends
I participated in physical activities in my spare time		I participated in inactive pastimes
I'm a doer		I'm a thinker
ADULTHOOD		
The jobs I have done have been predominantly active deskbound		My jobs have been mainly
My job use my body		My job uses my brain
I'm not very ambitious		I'm very ambitious
I belong to a gym/sports club		I don't do any physical activity
I love doing physical activity		I hate doing physical activity
I like my body		I don't like my body
I'm happy to look at my body in a mirror		I never look at a reflection of myself
I love clothes		I have no interest in clothes
I'm always moving around		I like sitting still
I'm single/divorced		I'm married
I don't have children		I have children
I'm happy with my body shape		I wish I could change my body shape
I'm very aware of my body		I don't ever think about my body
FOOD		
I never diet		I'm always dieting
When I'm stressed I do physical activity		When I'm stressed I eat
I love vegetables		I don't like vegetables
I am very careful with how much fat and sugar I eat		My diet contains a lot of fat and sugar
I snack on nuts/fruit/vegetables etc		I snack on chocolate/cake/biscuits etc
I can control my weight		I cant control my weight
My meal portion sizes are small		My portion sizes are large
I never have seconds		I often have seconds and thirds

DRAFT 3 25/2/14

A short section of demographic descriptors/outcome measures was added. These included: Age, sex, income, qualification, marital status and number of children. In the main body, statements were further refined, headings were now expanded to: childhood/Primary education, adolescence/secondary education, young adulthood, adulthood, intrinsic values and food. This

reflected a focus of thinking of practice observation that clearly led to an educational environment as significant, reading that was being undertaken at that point and conversations with supervisors to hone down the questionnaires intent. 'Intrinsic value' had been added as a category and thought given to including childhood questions. Positionality and problems of bias mentioned earlier were still unresolved. There was also the issue of question validity as evidenced by the unstable nature of the format. It was felt that this line of thinking and working had gone as far as it could, it wasn't fit for purpose, therefore a new approach was required.

Age
 Sex Male Female
 Income: 0-19,999, 20,000-39,999, 40,000-59,999, 60,000-79,999, 80,000-99,999, 100,000+ prefer not to say
 Highest qualification gained: CSE NVQ/Btec O-level/GCSE A-level/HND Degree Post Graduate
 Marital Status Married Single Divorced
 Children 01234567+

CHILDHOOD/PRIMARY EDUCATION

My parents played sport	My parents had no interest in sport
My parents gave me no encouragement to be physically active	My parents had no interest in sport at all
Although my parents didn't play sport, they watched it	I preferred games where I was sitting
I preferred physical games	I didn't have any friends
I had lots of friends	I spent most of my time indoors
I was always playing outside	I have bad memories of play as a child
I have good memories of play as a child	

ADOLESCENCE/SECONDARY EDUCATION

I loved PE at school	I hated PE at school
PE was my favourite subject	PE was my least favourite subject
I was in every school sports team	I did not participate in extra curricula sport
I thought the PE teacher was great	I hated the PE teacher
I found PE easy	I found PE difficult
My memories of PE lessons are excellent	My memories of PE lessons are terrible

I didn't belong to after school clubs that involved sitting	
Outside school my leisure time involved sitting ie art/music/board games	
I loved reading	I hated reading

YOUNG ADULTHOOD

My early work life meant I was mainly on my feet	My early work life meant I was mainly sitting
I had lots of friends	I didn't have any friends
I participated in physical activities in my spare time	I didn't participate in physical activities in my spare time

ADULTHOOD

My adult work life has been predominantly active	My adult work life has been mainly deskbound
My present job uses my body	My present job doesn't use my body
My present job uses my brain	My present job doesn't use my brain
I do lots of physical activity/exercise	I don't do any physical activity/exercise

I love doing physical activity	I hate doing physical activity
I'm always moving around	I like sitting still
My immediate family doesn't do any physically activity together	
I don't encourage my children to be very physically active	
I feel comfortable using Maths	The thought of Maths gives me a cold sweat
I feel comfortable reading and writing	I completely avoid reading and writing

INTRINSIC VALUES

I'm not very ambitious	I'm very ambitious
I like my body	I don't like my body
I love clothes	I have no interest in clothes
I don't want to change anything about my body	I wish I could change my body shape
I'm happy to look at my body in a mirror	I never look at a reflection of myself
I'm a doer	I'm a thinker
I'm very aware of my body	I don't ever think about my body

FOOD

I'm always dieting	I never diet
When I'm stressed I do physical activity	When I'm stressed I eat
I love vegetables	I don't like vegetables
I am very careful with how much fat and sugar I eat	My diet contains a lot of fat and sugar
I snack on nuts/fruit/vegetables etc	I snack on chocolate/cake/biscuits etc
I can control my weight	I can't control my weight
My meal portion sizes are small	My portion sizes are large
I never have seconds	I often have seconds and thirds
I always have dessert	I never have dessert

DRAFT 4 15/4/14

The sea change in thinking came with advice from supervisors to go back to the literature, reread relevant works, look at tests done by those writers cited in the literature review. This set the process going again. All of the survey statements needed to be grounded in the literature and so those already written were revisited and compared to the texts, modified or eschewed. Existing questionnaires such as Seligman's 1987 Attributional style questionnaire were examined and used as a basis from which to develop statements. Certain statements came from an informal discussion with a now retired headmistress who had been active in the 1960's and 70's. Draft 4 shows this reworking and the literature that statements were attributed to. The 'left and right' format was also left behind. By listing statements followed by a 7 point Likert scale from Agree-not at all to completely, removed many of the concerns of bias outlined in draft 3. Having gone back to basics meant all of the groupings were removed at this stage.

Age
 Sex Male Female
 Income 0-19,999
 20,000-39,999
 40,000-59,999
 60,000-79,999
 80,000-99,999
 100,000+
 prefer not to say
 Highest qualification gained CSE
 NVQ/Btec
 O-level/GCSE
 A-level/HND
 Degree
 Post Graduate
 Phd
 Marital Status Married Single Divorced
 Children 01234567+
 Are you an: only child sibling

Completely Not at all

1 2 3 4 5 6 7

I was happy as a child
 learning made me anxious
 My parents give me consistent positive reinforcement
 (from Rotter – Locus of Control)

I used to the shops for my parents
 I used to walk to school
 (from primary headmistress)

I always did what my parents told me to do
 My parents spent a lot of time playing with me
 My parents were very protective
 I was bullied
 I regularly went out and played alone
 I regularly played with friends away from the house
 I thrived on competition at school
 I wanted to be liked by my teacher
 I wanted to be liked by my classmates
 I was very academic
 I found Maths easy
 I found English easy
 I found Art easy
 I found PE easy
 (Chorpita 1998)

My parents cossetted me
 I was encouraged to explore the world
 My parent were always there when I needed them
 (Bowlby attachment theory)

I was overweight as a child
 (Gray 1987- neuroendocrine correlate of anxiety)

I got consistently good grades in tests
 I was physically clumsy
 My room was always messy
 I did not cope well with failure
 I was quite lazy
 I loved parties
 I was a bit of a joker in school
 I was never picked for the team
 I was more confident in my thinking rather than my physical skills
 I never told lies
 (developed from Seligman attribution)

I was a daydreamer
 Sometimes it felt like my body did not belong to me
 I am able to ignore pain quite well
 I used to talk to myself
 (Bernstein and Putman Dissociative experience scale)

My parents played sport
 My parents encouraged me to be physically active
 Although my parents didn't play sport, they watched it

I liked reading
 I liked making things and being creative
 I liked physical games
 I had lots of friends
 I had a small number of close friends
 I loved PE at school
 PE was my favourite subject
 I was good at PE
 I was in lots of school sports team
 I was often the team captain
 I got on with the PE teacher
 My memories of PE lessons are good
 I was always borrowing books from the library
 My early career involved very physical jobs
 Some of my hobbies were physical in nature ie tennis, hiking, golf
 Some of my hobbies were non-physical in nature ie reading, cinema, art
 My adult work life has been mainly deskbound
 My present job uses my brain
 I'm always on my feet
 I like sitting still
 My immediate family spends leisure time together
 We enjoy doing physical activity together
 I'm not very ambitious
 I like my body
 I love clothes
 I wish I could change my body shape
 I never look at a reflection of myself
 I don't ever think about my body
 I'm always dieting
 When I'm stressed I eat
 I always have my 5-a-day
 I am very careful with how much fat and sugar I eat
 I have a weakness for chocolate/cake/biscuits etc
 I am in control of my weight
 My meal portion sizes are small
 I never have second helpings
 I always have desserts

Task and ego orientation in sport questionnaire Duda and Nicholls 1984

DRAFT 5 2/5/14

Now with a more robust set of statements, the topic of classification was revisited. Rather than hone it down to specific environments such as educational as in draft 3, this time statements were grouped into age groups that tended to follow education transition points. This was thought to aid clarity for respondents. *'The reliability of the data obtained through survey research rests, in large part, on the uniform administration of questions and their uniform interpretation by respondents'* (Blair et al., 2014, p. 192). Certain statements such as, 'I found art easy' appeared in more than one age group. There was discussion that repeating themes might show when 'elements' started, stopped or if they were constants.

Age		
Sex	Male	Female
Income		0-19,999

I was never picked for the team
I was more confident in my thinking rather than my physical skills
I never told lies
I was a daydreamer
Sometimes it felt like my body did not belong to me
I am able to ignore pain quite well
I used to talk to myself
My parents played sport
My parents encouraged me to be physically active
Although my parents didn't play sport, they watched it
I liked reading
I liked making things and being creative
I liked physical games
I had lots of friends
I had a small number of close friends
I loved PE at school
PE was my favourite subject
I was good at PE
I was in lots of school sports team
I was often the team captain
I got on with the PE teacher
My memories of PE lessons are good
I was always borrowing books from the library

Thinking about when you were aged 16-now

My early career involved very physical jobs
Some of my hobbies were physical in nature ie tennis, hiking, golf
Some of my hobbies were non-physical in nature ie reading, cinema, art
My adult work life has been mainly deskbound
My present job uses my brain
I'm always on my feet
I like sitting still
My immediate family spends leisure time together
We enjoy doing physical activity together
I'm not very ambitious
I like my body
I love clothes
I wish I could change my body shape
I never look at a reflection of myself
I don't ever think about my body
I'm always dieting
When I'm stressed I eat
I always have my 5-a-day
I am very careful with how much fat and sugar I eat
I have a weakness for chocolate/cake/biscuits etc
I am in control of my weight
My meal portion sizes are small
I never have second helpings
I always have desserts
I have lots of friends
I have a small number of close friends
I am overweight
I am happy

DRAFT 6 23/6/14

After supervisory advice the grouping was reconsidered and once again located back in the literature. As the project dealt with a lifecourse concern, it was acceptable to place the survey within lifecourse studies. Therefore statements were once more refined and grouped into: About home, just

I always had seconds at mealtimes
My parents cosseted me
My parent were always there when I needed them
My parents played sport
My parents encouraged me to be physically active
Although my parents didn't play sport, they watched it
I ate a healthy diet
I was happy as a child
I used to walk to school
I always did what my parents told me to do
My parents spent a lot of time with me
I got on well with my siblings
I was encouraged to explore the world
My room was always messy
There were always treats like chocolate/cake/biscuits/crisps

Just about me

I was bullied
I was overweight as a child
I was physically clumsy
I liked physical games
I liked making things and being creative
I was very academic
I did not cope well with failure
I was quite lazy
I was more confident in my thinking rather than my physical skills
I never told lies
Food was a comfort
I was a daydreamer
Sometimes it felt like my body did not belong to me
I am able to ignore pain quite well
I used to talk to myself
I was always sitting
I was conscious of my body shape
I never expected much of myself
I was not competitive

School

Learning made me anxious
I wanted to be liked by my classmates
I found Maths easy
I found English easy
I found Art easy
I found PE easy
I thrived on competition at school
I got consistently good grades in tests
PE was like bootcamp
I was a bit of a joker in school
I was never picked for the team
I loved PE at school
PE was my favourite subject
I was good at PE
I was in lots of school sports team
I was often the team captain
I got on with the PE teacher
My memories of PE lessons are good

Friends and leisure

I regularly went out and played alone
I regularly played with friends away from the house
I liked reading
I had lots of friends
I had a small number of close friends
I wanted to be liked by my teacher
I loved parties
I liked making things and being creative
I liked physical games
I was always borrowing books from the library
My friends and I were always dieting
I was always the winner

My friends used to compete with each other

DRAFT 7 5/8/14

This draft is discussed in chapter 3, study 2 data collection.

DRAFT 8 29/8/14

Draft 8 was sent to the company. It was explained that there were two participant criteria that needed to filter potential participants before they took part, that of being between the ages of 45-65 and that they had to have been educated between the ages of 11-16 in England. Instructions were also sent to place the prepared participant information sheet at the beginning of the survey. Here, it is made clear that by continuing into the survey they are considered to have given their informed consent. Draft 8 queries certain demographic measures as questions found previously through the office for Nation Statistics were felt to be unwieldy for this task. The company said it could provide industry standardised outcome measures that could be adapted as required.



1. What is your gender?

Male
Female

2. What is your age?

45-49 years old
50-54 years old
55-59 years old
60-65 years old

3. Which highest qualification do you have?

First or higher degree (e.g. BA, BSc, MSc, PhD)
Other technical or professional qualifications
A level, AS level, O level, CSE, GCSE
Foreign qualifications
Other qualifications

Your occupation **This needs a standardized validated question**

14. Are there any children under the age of eighteen years currently living in your household? **My supervisor requested a breakdown to get further discrete data of age ranges of U18's**

Yes
No

15. What is your marital status?

single/never been married
married
separated
divorced
widowed
other

Which of these groups represents your annual household income?

£0-19,999
£20,000-39,999
£40,000-59,999
£60,000-79,999
£80,000-99,999
£100,000+
prefer not to say

Are you an:

only child Eldest child, 2nd child, 3rd child, 4th child, other **(this needs validating to use pre-existing question)**

exerciser non-exerciser

What is your ethnicity (needs standard question)

What type of secondary school did you attend?
Secondary modern, grammar, comprehensive, public, other (is this OK?)

The following questions cover different aspects of your life when you were aged between 11 and 16

(all questions - 7 point Likert scale where 1 is completely disagree and 7 is completely agree)

1. Questions about your home life when you were aged 11-16

I felt my mother and father loved me
My mother and father would compliment me (say something nice about me)
My mother and father would support and comfort me when I needed it
My family had significant financial struggles growing up
My parents made sure I had the right kind of food
I got on well with my siblings
I was encouraged to explore the world
Overall my parents had an authoritarian style of parenting
My parents overprotected me
My parents encouraged me to be physically active
I was happy as a child
I used to walk to school
I often had seconds at mealtimes
I often ate in-between-meal snacks
I was messy. I didn't know where to begin to clean up papers; I couldn't even begin as it was so overwhelming
Although my parents didn't play sport, they watched it

My parents played sport

2. Questions just about me when I was aged 11-16

I was a daydreamer
Sometimes it felt like my body did not belong to me
I was able to ignore pain quite well
I used to talk to myself
I was bullied
I never told lies
I participated in physical activities wherever I could
I worried a lot of the time
I did not cope well with failure
I was more confident in my thinking rather than my physical skills
Food was a comfort
I was overweight as a child
I was conscious of my body shape
I was quite lazy
I had problems concentrating on tasks
It was discouraging and frustrating to work harder than others and not see the same results
I was not competitive
I was physically clumsy

3. Questions about being at secondary school (age 11-16)

I loved school
I thrived on competition at school
I got consistently good grades in tests
Learning made me anxious
I loved PE at school
PE was like bootcamp
I was a bit of a joker in school
At school I would strive to be as perfect as possible
I was good at PE
I found Maths easy
I found English easy

Art was one of my best subjects
I enjoyed myself and had fun in PE
I was often the team captain
I did not get on with the PE teacher
I wanted my teachers to think of me as a good student
I was never picked for the team

4. Questions about your friends and leisure when you were 11-16

I regularly played alone
I was sociable
I was always the winner
I used to compete with my friends
I loved reading
I had many friends
In my leisure time, I mainly read, watched TV and did other activities in which I did not move much and did not strain me physically
I frequently visited and borrowed books from the library
My friends and I were always dieting
Outside school hours I liked to do sports or exercise, without any club association

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE
(Statement asking for narrative interview participants)

DRAFT 9 16/9/14

The development of the online survey between draft 9 and 10 was a dynamic conversation between the marketer, who made constructive suggestions, the researcher who responded to them and university supervisors who were asked to arbitrate on technical decisions.

Topics of discussion centred mostly on the outcome measures:

- Outcome measures were placed at the end. This was done on the suggestion of the marketer who's tacit experience said this would result in more completed surveys.
- Reverse coding on half of the statements was deemed to show participant honesty by exposing respondents who had repeated answer options without reading the question.
- A 7 point Likert scale was chosen above a 6 point scale + a 'don't know' opinion button. After supervisory consideration, the former 'bipolar scale' was

thought to allow participants to make decisions on a progression where '4' becomes a neutral stance. The latter was thought to break this sliding scale by putting neutral outside and separate.

- Various reordering, rewording, spelling and grammar amendments were made as required in the online version.
- A final question would appear on the post pilot study to ask for telephone participants
- As the practice population is being measured by an income based system, the format of income outcome measure was considered in comparing the different traits across income groups.
- The Marketeer suggested that as the survey was quite big, there would be more respondent adherence if it were broken into smaller chunks over more pages.
- The scale was thought to incur better adherence if it went left to right, disagree to agree as the Marketeer advised that people tend to agree rather than not, and as people read from left to right it might promote more honest answers.
- A clarification of outcome measures regarding children was required. A differential needed to be made between how many children they grew up with and how many children they had parented. So they were clearly split and grouped as outcome measure as a child and as an adult. ONS questions regarded children still living at home, but with this age group it was likely that some children might have left home by now, so 'how many children have you brought up?' was thought to cover children who had left home and children who might have been adopted or from previous marriages. It was also less formal than 'how many children have you parented'. A further question was then added to ask the age of children.

[DRAFT 10 – Pilot Questionnaire](#) 23/9/14

This final draft was published to the Market research Company's panel for the pilot study. When there were 45 respondents the survey was temporarily taken down in order to test the data collected at this stage

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Thank you for taking part in this survey. Please answer the questions as completely as you can. If you are unable to answer a question, please just move on to the next.

1. Are you aged between 45 and 65?

- Yes
- No

2. Was your secondary education in England?

- Yes, entirely
- Yes, part
- No

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**MIDDLESEX UNIVERSITY SCHOOL
OF HEALTH AND EDUCATION**
Health Studies ethics sub-committee

PARTICIPANT INFORMATION SHEET FOR SURVEY PARTICIPANTS

Thank you for agreeing to participate in this study survey. This outlines key information in regard to the study.

The study title is, 'An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective'. The study aims to investigate whether early experiences in adolescence can have an effect on your physical activity levels in middle age and in its entirety will last for 2 years.

You are invited to be a participant in this study as you fit the criteria of the study. You are between the ages of 45-65 and were educated in England. All information that is collected about you during the course of the research will be kept strictly confidential and anonymous. All data will be stored, analysed and reported in compliance with the Data Protection Legislation of the UK. The information we get from this study may help us understand how to help people have a healthy lifestyle in middle age.

Taking part in the research is entirely voluntary. It is up to you to decide whether or not to take part. The survey will ask you questions about your experiences of physical activity and will take approximately 5 minutes. Completion and submission of the form will constitute consent to participate from you.

This survey is anonymous. There will be further follow-up interviews, face to face or by telephone to find out more about participants' answers in depth. If you would be happy to be interviewed in this follow up section please leave your contact details at the end of the survey. Your contact information will be kept strictly confidential. The researcher will contact you to make arrangements for the interview.

The results of this study will be presented as a Doctoral thesis. The expected completion date is December 2015. Findings from the study will be disseminated to interested organisations. You will not be identified in any publication.

This study has been reviewed by Middlesex University, School of Health and Education, Health Studies Ethics sub-Committee.

Thank you.

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The following questions cover different aspects of your life when you were aged between 11 and 16

1. How much do you agree or disagree with the following statements about your home life between the ages of 11 and 16?

	Strongly disagree	Quite disagree	Disagree	Neither agree nor disagree	Agree	Quite agree	Strongly agree
I felt my mother and father loved me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother and father would compliment me (say something nice about me)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother and father would support and comfort me when I needed it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family had significant financial struggles growing up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents made sure I had the right kind of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I got on well with my siblings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was encouraged to explore the world	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall my parents had an authoritarian style of parenting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents overprotected me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents encouraged me to be physically active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was happy as a child	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used to walk to school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often had seconds at mealtimes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often ate in-between-meal snacks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was messy. I didn't know where to begin to clean up papers; I couldn't even begin as it was so overwhelming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Although my parents didn't play sport, they watched it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents played sport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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4. How much do you agree or disagree with these statements about you between the ages of 11 and 16?

	Strongly disagree	Quite disagree	Disagree	Neither agree nor disagree	Agree	Quite agree	Strongly agree
I was a daydreamer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes it felt like my body did not belong to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to ignore pain quite well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used to talk to myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was bullied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I never told lies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I participated in physical activities wherever I could	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worried a lot of the time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I did not cope well with failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was more confident in my thinking rather than my physical skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food was a comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was overweight as a child	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was conscious of my body shape	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was quite lazy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had problems concentrating on tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was discouraging and frustrating to work harder than others and not see the same results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was not competitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was physically clumsy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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5. How much do you agree with these statements about being at secondary school (age 11-16)?

	Strongly disagree	Quite disagree	Disagree	Neither agree nor disagree	Agree	Quite agree	Strongly agree
I loved school	0	0	0	0	0	0	0
I thrived on competition at school	0	0	0	0	0	0	0
I got consistently good grades in tests	0	0	0	0	0	0	0
Learning made me anxious	0	0	0	0	0	0	0
I loved PE at school	0	0	0	0	0	0	0
PE was like bootcamp	0	0	0	0	0	0	0
I was a bit of a joker in school	0	0	0	0	0	0	0
At school I would strive to be as perfect as possible	0	0	0	0	0	0	0
I was good at PE	0	0	0	0	0	0	0
I found Maths easy	0	0	0	0	0	0	0
I found English easy	0	0	0	0	0	0	0
Art was one of my best subjects	0	0	0	0	0	0	0
I enjoyed myself and had fun in PE	0	0	0	0	0	0	0
I was often the team captain	0	0	0	0	0	0	0
I did not get on with the PE teacher	0	0	0	0	0	0	0
I wanted my teachers to think of me as a good student	0	0	0	0	0	0	0
I was never picked for the team	0	0	0	0	0	0	0
I played lots of school sport outside of PE classes	0	0	0	0	0	0	0

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6. How much do you agree with these statements about your friends and leisure activities when you were 11 to 16?

	Strongly disagree	Quite disagree	Disagree	Neither agree nor disagree	Agree	Quite agree	Strongly agree
I regularly played alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was sociable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was always the winner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used to compete with my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I belonged to lots of clubs like scouts/guides/swimming/gymnastics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I loved reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had many friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my leisure time, I mainly read, watched TV and did other activities in which I did not move much and did not strain me physically	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I frequently visited and borrowed books from the library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends and I were always dieting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outside school hours I liked to do sports or exercise, without any club association	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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To finish, may we please ask a few questions about you for statistical purposes?

1. What gender are you?

- Male
- Female
- Prefer not to say

2. In which of these age groups are you?

Please select ...

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9. What is the highest academic qualification you have achieved?

None

First or higher degree (e.g. BA, BSc, MSc, PhD)

Other technical or professional qualifications A

level, AS level, O level, CSE, GCSE

Foreign qualifications

Other

10. What is your occupation? (If retired, please give former occupation)

Please

select ...

11. Are there any children under the age of 18 living in your household?

Yes

No

12. What is your marital status?

Please select ...

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18. In which of these income groups are you? Please rate on your total income before tax.

lplease-select...

~J

19. Are you:

- An only child
- Eldest child
- 2nd child
- 3rd child
- 4th child
- 5th or later child

20. Are you

- An exerciser
- A non-exerciser

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21. How would you describe your ethnicity?

|please-select...

~J

22. What kind of secondary school did you attend? (Please select all that apply)

- Secondary Modern
- Comprehensive
- Grammar
- Public
- Other

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Appendix 7. Study 2 - Online questionnaire Final survey

Thank you for taking part in this survey. Please answer the questions as completely as you can. If you are unable to answer a question, please just move on to the next.

Are you aged between 45 and 65?

- Yes
 No

Was your secondary education (aged 11 - 16) in England?

- Yes, entirely
 Yes, part
 No

Next



MIDDLESEX UNIVERSITY
SCHOOL OF HEALTH AND EDUCATION

Health Studies ethics sub-committee

PARTICIPANT INFORMATION SHEET FOR SURVEY PARTICIPANTS

Thank you for agreeing to participate in this study survey. This outlines key information in regard to the study.

The study title is, 'An investigation into experience in youth and adolescent and subsequent exercise uptake in middle age through a life course perspective'. The study aims to investigate whether early experiences in adolescence can have an effect on your physical activity levels in middle age and in its entirety will last for 2 years.

You are invited to be a participant in this study as you fit the criteria of the study. You are between the ages of 45-65 and were educated in England. All information that is collected about you during the course of the research will be kept strictly confidential and anonymous. All data will be stored, analysed and reported in compliance with the Data Protection Legislation of the UK. The information we get from this study may help us understand how to help people have a healthy lifestyle in middle age.

Taking part in the research is entirely voluntary. It is up to you to decide whether or not to take part. The survey will ask you questions about your experiences of physical activity and will take approximately 5 minutes. Completion and submission of the form will constitute consent to participate from you.

This survey is anonymous. There will be further follow-up interviews, face to face or by telephone to find out more about participants' answers in depth. If you would be happy to be interviewed in this follow up section please leave your contact details at the end of the survey. Your contact information will be kept strictly confidential. The researcher will contact you to make arrangements for the interview.

The results of this study will be presented as a Doctoral thesis. The expected completion date is December 2015. Findings from the study will be disseminated to interested organisations. You will not be identified in any publication.

This study has been reviewed by Middlesex University, School of Health and Education, Health Studies Ethics sub-Committee.

Thank you.

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The following questions cover different aspects of your life when you were aged between 11 and 16

How much do you agree or disagree with the following statements about your home life between the ages of 11 and 16?

	Strongly disagree	Partly disagree	Disagree	Neither agree nor disagree	Agree	Partly agree	Strongly agree
I felt my mother and father loved me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother and father would compliment me (say something nice about me)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mother and father would support and comfort me when I needed it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My family had significant financial struggles growing up	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents made sure I had the right kind of food	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I got on well with my siblings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was encouraged to explore the world	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall my parents had an authoritarian style of parenting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents overprotected me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents encouraged me to be physically active	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was happy as a child	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used to walk to school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often had seconds at mealtimes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often ate in-between-meal snacks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had a messy room. I didn't know where to begin to clean up; I couldn't even begin as it was so overwhelming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Although my parents didn't play sport, they watched it	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents played sport	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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How much do you agree or disagree with these statements about you between the ages of 11 and 16?

	Strongly disagree	Partly disagree	Disagree	Neither agree nor disagree	Agree	Partly agree	Strongly agree
I was a daydreamer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes it felt like my body did not belong to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was able to ignore pain quite well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used to talk to myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was bullied	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I never told lies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I participated in physical activities wherever I could	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worried a lot of the time	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I did not cope well with failure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was more confident in my thinking rather than my physical skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food was a comfort	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was overweight as a child	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was conscious of my body shape	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was quite lazy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had problems concentrating on tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It was discouraging and frustrating to work harder than others and not see the same results	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was not competitive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was physically clumsy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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How much do you agree with these statements about being at secondary school (age 11-16)?

	Strongly disagree	Partly disagree	Disagree	Neither agree nor disagree	Agree	Partly agree	Strongly agree
I loved school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I thrived on competition at school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I got consistently good grades in tests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning made me anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I loved PE at school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PE was like bootcamp	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was a bit of a joker in school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At school I would strive to be as perfect as possible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was good at PE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found Maths easy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found English easy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Art was one of my best subjects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoyed myself and had fun in PE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was often the team captain	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I did not get on with the PE teacher	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wanted my teachers to think of me as a good student	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was never picked for the team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I played lots of school sport outside of PE classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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How much do you agree with these statements about your friends and leisure activities when you were 11 to 16?

	Strongly disagree	Partly disagree	Disagree	Neither agree nor disagree	Agree	Partly agree	Strongly agree
I regularly played alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was sociable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I was always the winner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I used to compete with my friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I belonged to lots of clubs like scouts/guides/swimming/gymnastics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I loved reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I had many friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In my leisure time, I mainly read, watched TV and did other activities in which I did not move much and did not strain me physically	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I frequently visited and borrowed books from the library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My friends and I were always dieting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Outside school hours I liked to do sports or exercise, without any club association	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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When you were growing up, how many children lived in your household in total (including you)?

- 1
- 2
- 3
- 4
- 5
- More than 5

Are you:

- An only child
- Eldest child
- 2nd child
- 3rd child
- 4th child
- 5th or later child

What kind of secondary school did you attend? (Please select all that apply)

- Secondary Modern
- Comprehensive
- Grammar
- Public
- Other

To finish, may we please ask a few questions about you for statistical purposes?

What gender are you?

- Male
- Female
- Prefer not to say

In which of these age groups are you?

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What is the highest academic qualification you have achieved?

- None
- Post graduate degree (e.g. MA, MSc, PhD)
- First Degree (e.g. BA BSc)
- Other technical or professional qualifications
- A level, AS level
- O level, CSE, GCSE
- Foreign qualifications
- Other

What is your occupation? (If retired, please give former occupation)

Which of these best describes your working status?

If working, are you self-employed?

- Yes
- No

What is your marital status?

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In which of these income groups are you? Please give your household's total income (for all earners) before tax.

Are you

- An exerciser
- A non-exerciser

How many children have you brought up?

- None
- 1
- 2
- 3
- 4
- 5
- More than 5

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How would you describe your ethnicity?

White european

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To what extent are the following statements accurate descriptions of you?

"I didn't like PE at school and haven't done any organised exercise since. In work and leisure I use brain skills rather than physical skills. In fact, I use my body as a vehicle to move my head around." (Please indicate by giving a percentage from 0 to 100%)

%

3

"I liked PE at school and showed ability. I have continued to do sport/exercise off and on throughout my life, as and when family or work demands allow." (Please indicate by giving a percentage from 0 to 100%)

%

3

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Would you be happy to take part in further research on this topic? This would be by telephone, and would not take up more than 30 minutes of your time.

- Yes, and my contact details are below
 No

If you would be willing to take part, please let us have your contact details below. Your email address will only be used to arrange an appointment with you and your details will only be used for this research project and will not be passed on to anyone else.

Name:

Email address:

Phone number:

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Appendix 8. Reference list of questionnaires used in the preparation of survey questions

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Appendix 9. Study 2 - PCA workings

Principal component analysis

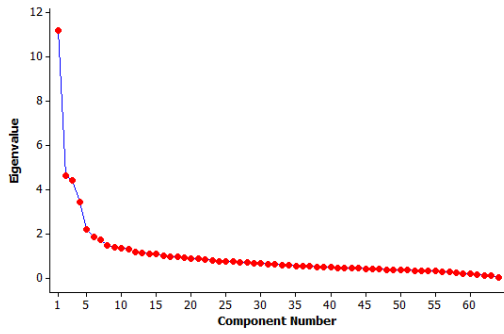
Whole Sample n = 800

Principal Component Analysis: mum.dadloved, compliment, support, financial.st,

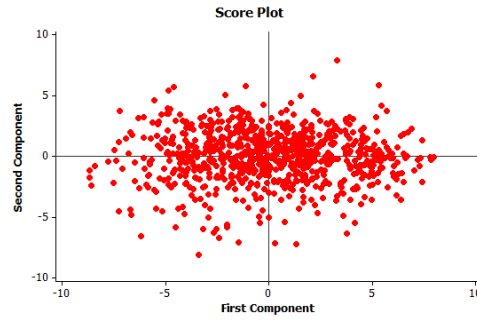
Eigenanalysis of the Correlation Matrix

Eigenvalue	11.183	4.591	4.368	3.051	2.062	1.722	1.686	1.385	1.356
Proportion	0.178	0.073	0.069	0.048	0.033	0.027	0.027	0.022	0.022
Cumulative	0.178	0.250	0.320	0.368	0.401	0.428	0.455	0.477	0.498
Eigenvalue	1.344	1.312	1.153	1.138	1.095	1.070	1.010	0.966	0.948
Proportion	0.021	0.021	0.018	0.018	0.017	0.017	0.016	0.015	0.015
Cumulative	0.520	0.541	0.559	0.577	0.594	0.611	0.627	0.643	0.658
Eigenvalue	0.925	0.860	0.847	0.808	0.765	0.746	0.744	0.717	0.693
Proportion	0.015	0.014	0.013	0.013	0.012	0.012	0.012	0.011	0.011
Cumulative	0.672	0.686	0.700	0.712	0.725	0.736	0.748	0.760	0.771
Eigenvalue	0.682	0.649	0.648	0.601	0.595	0.575	0.564	0.543	0.536
Proportion	0.011	0.010	0.010	0.010	0.009	0.009	0.009	0.009	0.009
Cumulative	0.781	0.792	0.802	0.812	0.821	0.830	0.839	0.848	0.856
Eigenvalue	0.525	0.499	0.488	0.470	0.460	0.457	0.450	0.434	0.408
Proportion	0.008	0.008	0.008	0.007	0.007	0.007	0.007	0.007	0.006
Cumulative	0.865	0.872	0.880	0.888	0.895	0.902	0.909	0.916	0.923
Eigenvalue	0.404	0.373	0.364	0.353	0.347	0.336	0.328	0.309	0.296
Proportion	0.006	0.006	0.006	0.006	0.006	0.005	0.005	0.005	0.005
Cumulative	0.929	0.935	0.941	0.946	0.952	0.957	0.962	0.967	0.972
Eigenvalue	0.295	0.280	0.263	0.228	0.194	0.166	0.129	0.110	0.098
Proportion	0.005	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.002
Cumulative	0.977	0.981	0.985	0.989	0.992	0.995	0.997	0.998	1.000

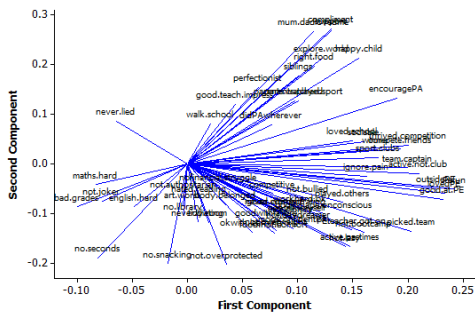
Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.115	0.266	0.217	0.111
compliment	0.131	0.272	0.209	0.120
support	0.131	0.268	0.220	0.126
nofinancial.struggle	0.029	-0.046	0.057	-0.028
right.food	0.115	0.197	0.187	0.113
siblings	0.101	0.176	0.146	0.125
explore.world	0.122	0.213	0.119	0.046
not.authoritarian	-0.003	-0.062	0.072	0.067
not.overprotected	0.036	-0.203	0.051	0.016
encouragePA	0.190	0.132	0.031	0.124
happy.child	0.156	0.213	0.182	0.084
walk.school	0.021	0.079	0.037	0.031
no.seconds	-0.081	-0.190	0.076	-0.087
no.snacking	-0.018	-0.201	0.096	-0.067
tidy.room	0.019	-0.118	0.151	-0.098
parents.watched.sport	0.101	0.126	-0.041	0.060
parents.played	0.097	0.127	-0.082	0.082
not.daydreamer	0.101	-0.121	0.098	0.000
body.belonged	0.034	-0.083	0.129	0.063
ignore.pain	0.163	-0.025	-0.122	0.037
not.talk.myself	0.100	-0.108	0.156	0.036
not.bullied	0.110	-0.070	0.182	-0.011
never.lied	-0.064	0.085	0.052	-0.070
didPAwherever	0.076	0.078	-0.137	-0.025
never.worried	0.078	-0.096	0.188	0.086
goodwithfailure	0.072	-0.117	0.184	0.128
moreconfidentPA	0.096	-0.131	0.046	0.100
food.not.comfort	0.079	-0.141	0.196	-0.097
not.overweight	0.080	-0.136	0.157	-0.067
bodyshape.unconscious	0.124	-0.102	0.047	0.019
not.lazy	0.143	-0.168	0.085	-0.043
good.concentrating	0.090	-0.095	0.131	-0.164
workhard.ok	0.102	-0.089	0.235	-0.044
competitive	0.077	-0.060	0.009	-0.062
not.clumsy	0.095	-0.111	0.123	-0.062
loved.school	0.150	0.046	0.032	-0.241
thrived.competition	0.201	0.038	-0.065	-0.192
bad.grades	-0.100	-0.087	-0.046	0.362
okwith.learning	0.059	-0.138	0.165	-0.145
lovedPE	0.234	-0.060	-0.156	0.047
not.bootcamp	0.160	-0.139	-0.047	0.046
not.joker	-0.078	-0.075	0.104	-0.070
perfectionist	0.064	0.154	-0.062	-0.274
good.at.PE	0.232	-0.071	-0.167	0.025
maths.hard	-0.083	-0.042	0.017	0.194
english.hard	-0.048	-0.087	-0.083	0.298
art.worst	-0.004	-0.083	0.092	0.050
Pefun	0.243	-0.051	-0.148	0.020
team.captain	0.200	-0.008	-0.210	-0.026
PEteacher.got.on	0.149	-0.133	-0.005	0.031
good.teach.impress	0.044	0.120	-0.022	-0.307
picked.team	0.203	-0.136	-0.052	0.013
outsidePE	0.225	-0.051	-0.179	0.064
played.others	0.141	-0.078	0.097	0.042
sociable	0.160	0.044	0.049	-0.041
winner	0.171	0.028	-0.140	-0.070
compete.friends	0.193	0.029	-0.140	-0.051
sport.clubs	0.173	0.012	-0.112	-0.009
hated.reading	0.011	-0.069	-0.101	0.298
active.pastimes	0.147	-0.167	-0.010	0.093
no.library	-0.003	-0.105	-0.044	0.303
never.dieting	0.010	-0.118	0.173	0.030
active.not.club	0.210	-0.021	-0.141	0.062



Scree plot C3-C66



Score plot C3-C66



loading plot C3-C66

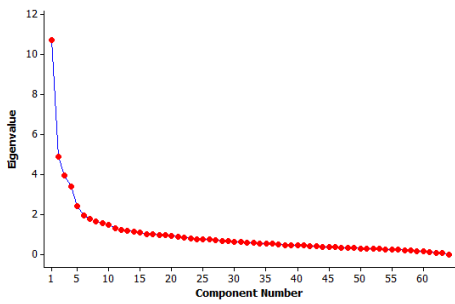
PCA women only n = 439

Principal Component Analysis: mum.dadloved, compliment, support, financial.st,

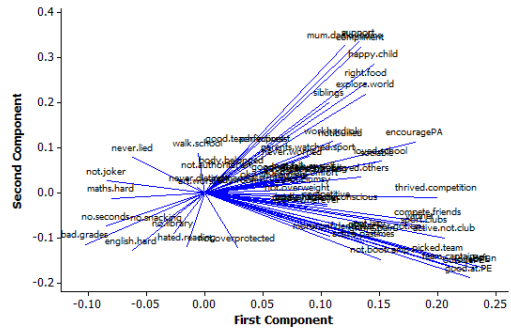
Eigenanalysis of the Correlation Matrix

Eigenvalue	10.709	4.793	3.915	3.162	2.257	1.881	1.711	1.636	1.501
Proportion	0.170	0.076	0.062	0.050	0.036	0.030	0.027	0.026	0.024
Cumulative	0.170	0.246	0.308	0.358	0.394	0.424	0.451	0.477	0.501
Eigenvalue	1.475	1.247	1.233	1.188	1.150	1.103	1.032	1.013	0.994
Proportion	0.023	0.020	0.020	0.019	0.018	0.018	0.016	0.016	0.016
Cumulative	0.524	0.544	0.564	0.583	0.601	0.618	0.635	0.651	0.667
Eigenvalue	0.954	0.917	0.866	0.839	0.795	0.769	0.746	0.739	0.720
Proportion	0.015	0.015	0.014	0.013	0.013	0.012	0.012	0.012	0.011
Cumulative	0.682	0.696	0.710	0.723	0.736	0.748	0.760	0.772	0.783
Eigenvalue	0.674	0.655	0.641	0.624	0.600	0.576	0.559	0.541	0.518
Proportion	0.011	0.010	0.010	0.010	0.010	0.009	0.009	0.009	0.008
Cumulative	0.794	0.804	0.814	0.824	0.834	0.843	0.852	0.861	0.869
Eigenvalue	0.500	0.484	0.476	0.461	0.445	0.421	0.403	0.397	0.385
Proportion	0.008	0.008	0.008	0.007	0.007	0.007	0.006	0.006	0.006
Cumulative	0.877	0.884	0.892	0.899	0.906	0.913	0.919	0.926	0.932
Eigenvalue	0.355	0.352	0.328	0.318	0.299	0.290	0.286	0.278	0.259
Proportion	0.006	0.006	0.005	0.005	0.005	0.005	0.005	0.004	0.004
Cumulative	0.937	0.943	0.948	0.953	0.958	0.963	0.967	0.972	0.976
Eigenvalue	0.256	0.241	0.224	0.194	0.165	0.154	0.129	0.092	0.080
Proportion	0.004	0.004	0.004	0.003	0.003	0.002	0.002	0.001	0.001
Cumulative	0.980	0.984	0.987	0.990	0.993	0.995	0.997	0.999	1.000

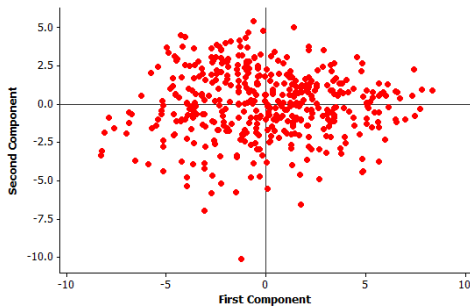
Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.121	0.327	-0.054	0.127
compliment	0.134	0.323	-0.064	0.136
support	0.132	0.334	-0.048	0.133
nofinancial.struggle	0.041	0.010	0.057	0.006
right.food	0.139	0.244	-0.005	0.103
siblings	0.107	0.201	-0.025	0.130
explore.world	0.138	0.219	-0.059	0.034
not.authoritarian	0.010	0.040	0.083	0.089
not.overprotected	0.028	-0.121	0.175	0.055
encouragePA	0.180	0.112	-0.080	0.144
happy.child	0.145	0.285	-0.007	0.099
walk.school	-0.005	0.087	-0.027	0.025
no.seconds	-0.084	-0.074	0.224	-0.053
no.snacking	-0.041	-0.076	0.209	-0.079
tidy.room	0.029	0.008	0.185	-0.087
parents.watched.sport	0.090	0.080	-0.119	0.051
parents.played	0.091	0.033	-0.164	0.123
not.daydreamer	0.088	-0.031	0.142	0.031
body.belonged	0.024	0.050	0.148	0.056
ignore.pain	0.143	-0.100	-0.044	0.026
not.talk.myself	0.087	0.037	0.183	0.075
not.bullied	0.117	0.110	0.192	0.005
never.lied	-0.062	0.078	-0.056	-0.018
didPAwherever	0.089	-0.038	-0.171	-0.070
never.worried	0.075	0.070	0.186	0.101
goodwithfailure	0.069	0.036	0.220	0.106
moreconfidentPA	0.108	-0.095	0.064	0.155
food.not.comfort	0.084	0.024	0.241	-0.028
not.overweight	0.080	-0.010	0.226	0.016
bodyshape.unconscious	0.105	-0.030	0.109	0.052
not.lazy	0.142	-0.088	0.193	-0.025
good.concentrating	0.087	0.035	0.167	-0.183
workhard.ok	0.110	0.115	0.217	-0.055
competitive	0.105	-0.025	0.027	-0.085
not.clumsy	0.089	0.009	0.149	-0.030
loved.school	0.152	0.071	0.040	-0.253
thrived.competition	0.199	-0.010	-0.034	-0.222
bad.grades	-0.103	-0.114	-0.015	0.347
okwith.learning	0.059	0.019	0.229	-0.151
lovedPE	0.231	-0.168	-0.080	0.027
not.bootcamp	0.151	-0.148	0.049	0.049
not.joker	-0.084	0.026	0.126	-0.090
perfectionist	0.052	0.098	-0.148	-0.315
good.at.PE	0.227	-0.188	-0.077	0.020
maths.hard	-0.080	-0.013	0.040	0.190
english.hard	-0.062	-0.127	-0.029	0.274
art.worst	-0.006	0.005	0.091	0.090
Pefun	0.241	-0.166	-0.066	0.007
team.captain	0.210	-0.162	-0.119	-0.026
PEteacher.got.on	0.155	-0.095	0.078	0.035
good.teach.impress	0.037	0.098	-0.080	-0.310
picked.team	0.200	-0.142	0.033	0.032
outsidePE	0.223	-0.171	-0.089	0.050
played.others	0.134	0.034	0.131	0.039
sociable	0.148	0.068	0.040	0.002
winner	0.185	-0.072	-0.096	-0.097
compete.friends	0.192	-0.064	-0.126	-0.093
sport.clubs	0.189	-0.080	-0.097	-0.005
hated.reading	-0.015	-0.119	-0.082	0.220
active.pastimes	0.137	-0.111	0.112	0.114
no.library	-0.027	-0.090	0.015	0.241
never.dieting	-0.006	0.011	0.205	0.037
active.not.club	0.206	-0.100	-0.071	0.060



Scree plot Women only



Loading plot Women only



Score plot women only

PCA Men only n = 354

Results for: FINAL SURVEY COPY.MTW (gender = Male)

Principal Component Analysis: mum.dadloved, compliment, support, financial.st,

Eigenanalysis of the Correlation Matrix

Eigenvalue	11.760	5.551	4.300	2.998	2.019	2.003	1.612	1.513	1.411
Proportion	0.187	0.088	0.068	0.048	0.032	0.032	0.026	0.024	0.022
Cumulative	0.187	0.275	0.343	0.391	0.423	0.454	0.480	0.504	0.526
Eigenvalue	1.337	1.292	1.256	1.229	1.073	1.064	0.995	0.979	0.922
Proportion	0.021	0.021	0.020	0.020	0.017	0.017	0.016	0.016	0.015
Cumulative	0.548	0.568	0.588	0.608	0.625	0.642	0.657	0.673	0.688
Eigenvalue	0.919	0.850	0.823	0.790	0.750	0.746	0.697	0.694	0.662
Proportion	0.015	0.013	0.013	0.013	0.012	0.012	0.011	0.011	0.011
Cumulative	0.702	0.716	0.729	0.741	0.753	0.765	0.776	0.787	0.798
Eigenvalue	0.624	0.613	0.603	0.574	0.558	0.527	0.524	0.510	0.493
Proportion	0.010	0.010	0.010	0.009	0.009	0.008	0.008	0.008	0.008
Cumulative	0.807	0.817	0.827	0.836	0.845	0.853	0.861	0.869	0.877
Eigenvalue	0.473	0.465	0.449	0.425	0.410	0.389	0.371	0.369	0.355
Proportion	0.008	0.007	0.007	0.007	0.007	0.006	0.006	0.006	0.006
Cumulative	0.885	0.892	0.899	0.906	0.913	0.919	0.925	0.930	0.936
Eigenvalue	0.333	0.321	0.308	0.295	0.287	0.276	0.259	0.248	0.247
Proportion	0.005	0.005	0.005	0.005	0.005	0.004	0.004	0.004	0.004
Cumulative	0.941	0.946	0.951	0.956	0.961	0.965	0.969	0.973	0.977
Eigenvalue	0.232	0.222	0.201	0.185	0.163	0.149	0.110	0.096	0.093
Proportion	0.004	0.004	0.003	0.003	0.003	0.002	0.002	0.002	0.001
Cumulative	0.981	0.984	0.987	0.990	0.993	0.995	0.997	0.999	1.000

Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.106	-0.088	0.332	0.089
compliment	0.124	-0.104	0.335	0.081
support	0.128	-0.094	0.327	0.116
nofinancial.struggle	0.018	0.079	0.005	-0.071
right.food	0.092	-0.064	0.281	0.182
siblings	0.089	-0.064	0.250	0.162
explore.world	0.098	-0.122	0.230	0.037
not.authoritarian	-0.031	0.099	-0.034	-0.030
not.overprotected	0.044	0.191	-0.057	-0.045
encouragePA	0.199	-0.092	0.098	0.091
happy.child	0.169	-0.087	0.240	0.109
walk.school	0.055	-0.043	0.067	0.049
no.seconds	-0.065	0.172	-0.063	-0.063
no.snacking	0.016	0.220	-0.029	0.003
tidy.room	0.019	0.182	0.071	-0.050
parents.watched.sport	0.115	-0.125	0.000	0.074
parents.played	0.101	-0.140	-0.003	0.022
not.daydreamer	0.122	0.155	0.028	0.020
body.belonged	0.037	0.139	0.031	0.026
ignore.pain	0.184	-0.063	-0.122	0.073
not.talk.myself	0.109	0.176	0.055	0.025
not.bullied	0.101	0.161	0.056	0.048
never.lied	-0.068	-0.019	0.121	-0.134
didPAwherever	0.055	-0.118	-0.066	0.003
never.worried	0.074	0.195	0.088	0.075
goodwithfailure	0.062	0.188	0.101	0.137
moreconfidentPA	0.083	0.168	0.013	0.055
food.not.comfort	0.078	0.218	0.095	-0.127
not.overweight	0.081	0.180	0.082	-0.112
bodyshape.unconscious	0.135	0.110	-0.043	-0.088
not.lazy	0.148	0.168	0.011	0.003
good.concentrating	0.097	0.161	0.052	-0.103
workhard.ok	0.086	0.223	0.126	-0.029
competitive	0.037	0.078	-0.051	-0.113
not.clumsy	0.093	0.172	0.043	-0.092
loved.school	0.158	-0.042	0.037	-0.166
thrived.competition	0.198	-0.082	-0.038	-0.179
bad.grades	-0.101	0.054	-0.071	0.378
okwith.learning	0.056	0.197	0.059	-0.138
lovedPE	0.234	-0.032	-0.137	0.069
not.bootcamp	0.170	0.094	-0.082	0.077
not.joker	-0.054	0.135	0.043	0.077
perfectionist	0.090	-0.134	0.013	-0.212
good.at.PE	0.237	-0.032	-0.146	0.044
maths.hard	-0.078	0.041	-0.033	0.320
english.hard	-0.051	0.030	-0.118	0.262
art.worst	-0.006	0.140	0.013	-0.041
Pefun	0.245	-0.048	-0.112	0.046
team.captain	0.190	-0.127	-0.166	-0.012
PEteacher.got.on	0.143	0.114	-0.079	0.081
good.teach.impress	0.065	-0.101	0.034	-0.270
picked.team	0.204	0.102	-0.104	0.005
outsidePE	0.223	-0.064	-0.170	0.057
played.others	0.148	0.115	-0.000	0.109
sociable	0.177	-0.037	0.059	-0.051
winner	0.153	-0.113	-0.112	-0.063
compete.friends	0.191	-0.095	-0.110	-0.097
sport.clubs	0.154	-0.064	-0.073	-0.018
hated.reading	0.006	0.028	-0.143	0.287
active.pastimes	0.151	0.130	-0.128	0.061
no.library	-0.006	0.074	-0.136	0.286
never.dieting	0.013	0.193	0.123	-0.049
active.not.club	0.209	-0.071	-0.152	0.053

PCA of home life

Principal Component Analysis: mum.dadloved, compliment, support, financial.st,

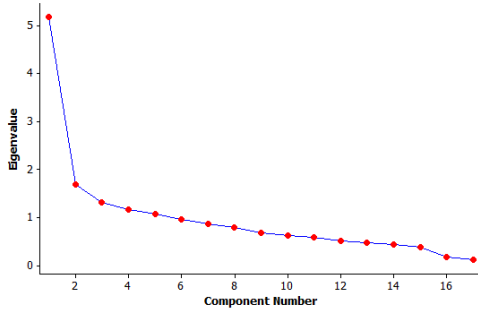
Eigenanalysis of the Correlation Matrix

Eigenvalue	5.1811	1.6859	1.3090	1.1567	1.0728	0.9551	0.8614	0.7840
Proportion	0.305	0.099	0.077	0.068	0.063	0.056	0.051	0.046
Cumulative	0.305	0.404	0.481	0.549	0.612	0.668	0.719	0.765

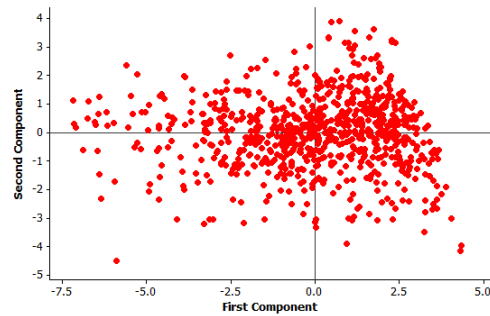
Eigenvalue	0.6764	0.6292	0.5883	0.5173	0.4743	0.4334	0.3753	0.1799
Proportion	0.040	0.037	0.035	0.030	0.028	0.025	0.022	0.011
Cumulative	0.805	0.842	0.876	0.907	0.935	0.960	0.982	0.993

Eigenvalue	0.1199
Proportion	0.007
Cumulative	1.000

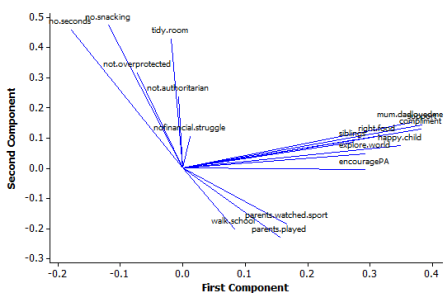
Variable	PC1	PC2	PC3	PC4
mum.dadlovedme	0.365	0.151	-0.035	0.112
compliment	0.381	0.128	0.052	0.076
support	0.384	0.144	0.004	0.095
nofinancial.struggle	0.012	0.105	0.324	0.525
right.food	0.311	0.104	-0.222	0.138
siblings	0.272	0.086	-0.162	-0.125
explore.world	0.292	0.048	0.099	-0.066
not.authoritarian	-0.007	0.236	0.548	-0.159
not.overprotected	-0.073	0.317	0.294	-0.565
encouragePA	0.292	-0.005	0.130	-0.124
happy.child	0.349	0.074	-0.036	-0.050
walk.school	0.082	-0.202	-0.386	-0.410
no.seconds	-0.179	0.459	-0.023	0.031
no.snacking	-0.120	0.474	-0.096	-0.035
tidy.room	-0.019	0.427	-0.317	-0.043
parents.watched.sport	0.167	-0.185	0.185	-0.352
parents.played	0.155	-0.230	0.328	0.014



Scree plot of 'Home life'



Score plot of 'Home life'



Loading plot of 'Home life'

PCA of about me

Principal Component Analysis: daydreamer, body.didnt.b, ignore.pain, talk.myself

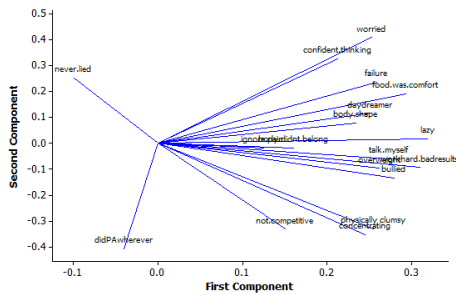
Eigenanalysis of the Correlation Matrix

Eigenvalue	3.9471	1.8846	1.4102	1.3607	1.1171	1.0214	0.9848	0.8361
Proportion	0.219	0.105	0.078	0.076	0.062	0.057	0.055	0.046
Cumulative	0.219	0.324	0.402	0.478	0.540	0.597	0.651	0.698

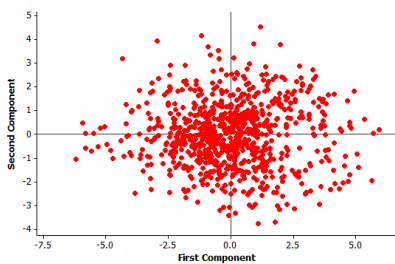
Eigenvalue	0.7905	0.6695	0.6326	0.5855	0.5550	0.5209	0.4761	0.4471
Proportion	0.044	0.037	0.035	0.033	0.031	0.029	0.026	0.025
Cumulative	0.742	0.779	0.814	0.847	0.878	0.906	0.933	0.958

Eigenvalue	0.3986	0.3622
Proportion	0.022	0.020
Cumulative	0.980	1.000

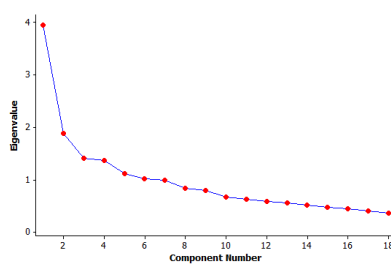
Variable	PC1	PC2	PC3	PC4
not.daydreamer	0.251	0.116	0.065	-0.019
body.belonged	0.160	-0.019	0.115	0.159
ignore.pain	0.124	-0.017	-0.335	-0.602
not.talk.myself	0.274	-0.061	0.236	-0.041
not.bullied	0.279	-0.134	0.291	-0.058
never.lied	-0.100	0.251	-0.130	0.529
didPAwherever	-0.040	-0.408	-0.307	0.192
never.worried	0.253	0.408	0.221	0.033
good.with.failure	0.259	0.237	0.275	-0.053
moreconfidentPA	0.213	0.326	-0.286	0.099
food.not.comfort	0.293	0.191	-0.304	0.314
not.overweight	0.262	-0.097	-0.268	0.175
bodyshape.conscious	0.234	0.078	-0.388	-0.207
not.lazy	0.319	0.018	-0.203	-0.153
good.concentrating	0.245	-0.353	0.098	-0.019
workhard.ok	0.310	-0.094	0.218	0.042
competitive	0.150	-0.332	-0.006	0.218
not.clumsy	0.255	-0.331	-0.023	0.176



Loading plot 'About me'



Score plot of 'About me'



Scree plot 'About me'

PCA of school

Principal Component Analysis: loved.school, thrived.comp, good.grades, learning

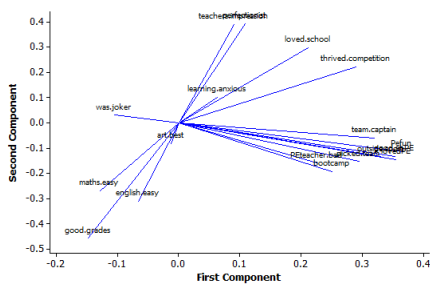
Eigenanalysis of the Correlation Matrix

Eigenvalue	5.9899	2.4587	1.4092	1.2255	0.9837	0.8383	0.7855	0.7014
Proportion	0.333	0.137	0.078	0.068	0.055	0.047	0.044	0.039
Cumulative	0.333	0.469	0.548	0.616	0.670	0.717	0.761	0.800

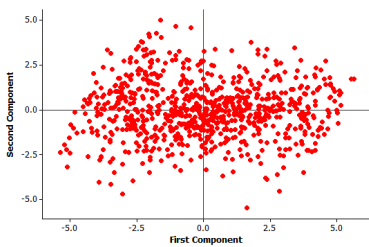
Eigenvalue	0.5644	0.5441	0.4941	0.4561	0.3871	0.3486	0.2967	0.2594
Proportion	0.031	0.030	0.027	0.025	0.022	0.019	0.016	0.014
Cumulative	0.831	0.861	0.889	0.914	0.935	0.955	0.971	0.986

Eigenvalue	0.1454	0.1120
Proportion	0.008	0.006
Cumulative	0.994	1.000

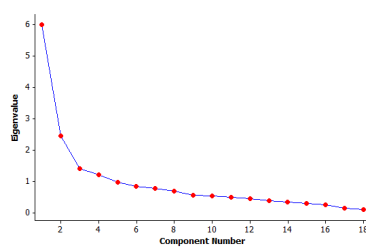
Variable	PC1	PC2	PC3	PC4
loved.school	0.211	0.298	0.149	-0.095
thrived.competition	0.289	0.223	0.008	-0.019
bad.grades	-0.148	-0.457	-0.131	-0.082
okwith.learning	0.064	0.103	0.599	0.365
lovedPE	0.355	-0.145	-0.077	-0.034
not.bootcamp	0.250	-0.193	0.263	-0.150
not.joker	-0.105	0.030	0.276	-0.552
perfectionist	0.108	0.393	-0.228	-0.315
good.at.PE	0.352	-0.132	-0.129	0.004
maths.hard	-0.129	-0.269	-0.120	-0.285
english.hard	-0.066	-0.311	-0.059	-0.258
art.worst	-0.013	-0.082	0.447	-0.279
Pefun	0.365	-0.114	-0.076	-0.014
team.captain	0.320	-0.059	-0.213	0.039
PEteacher.got.on	0.225	-0.160	0.258	-0.253
Good.teach.impress	0.090	0.390	-0.132	-0.351
picked.team	0.294	-0.153	0.137	0.073
outsidePE	0.330	-0.134	-0.107	0.052



Loading plot of 'School'



Score plot of 'School'



Scree plot of 'School'

PCA of friends/leisure

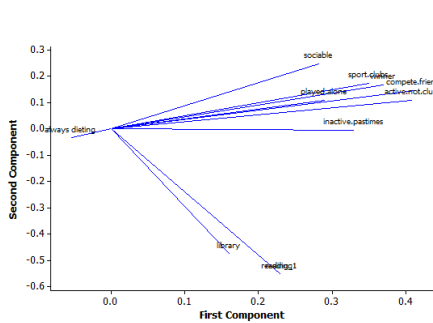
Principal Component Analysis: played.alone, sociable, winner, compete.frie, spo

Eigenanalysis of the Correlation Matrix

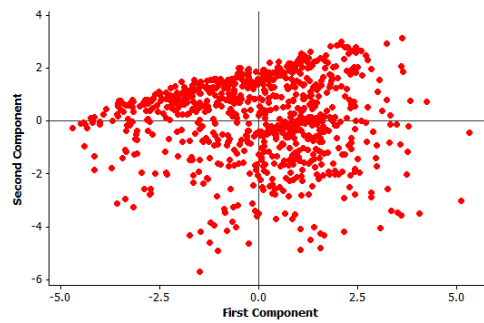
Eigenvalue	3.1683	2.4696	1.1863	0.9411	0.7437	0.6546	0.5362	0.4767
Proportion	0.288	0.225	0.108	0.086	0.068	0.060	0.049	0.043
Cumulative	0.288	0.513	0.620	0.706	0.774	0.833	0.882	0.925

Eigenvalue	0.4352	0.3885	-0.0000
Proportion	0.040	0.035	-0.000
Cumulative	0.965	1.000	1.000

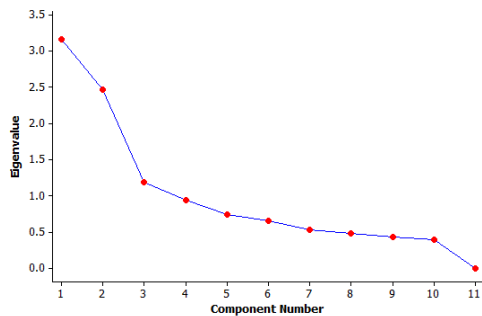
Variable	PC1	PC2	PC3	PC4
played.other	0.289	0.108	-0.350	-0.582
sociable	0.282	0.247	-0.192	-0.497
winner	0.369	0.169	0.308	0.187
compete.friends	0.413	0.147	0.193	0.188
sport.clubs	0.349	0.173	0.066	0.065
hated.reading	0.229	-0.552	0.097	-0.060
active.pastimes	0.329	-0.006	-0.400	0.263
no.library	0.160	-0.475	-0.150	-0.072
never.dieting	-0.054	-0.034	-0.708	0.424
active.not.club	0.408	0.110	0.030	0.281



Loading plot of 'Leisure/friends'



Score plot of 'Leisure/friends'



Scree plot of 'Leisure/friends'

Appendix 10. Study 2 - Results of Anderson-Darling test for normality

Anderson-Darling Normality test results

Variable	A-squared	P value
mum.dadlovedme	67.81	< 0.005
compliment	31.23	< 0.005
support	43.11	< 0.005
nofinancial.struggle	18.62	< 0.005
right.food	36.41	< 0.005
siblings	20.12	< 0.005
explore.world	16.58	< 0.005
not.authoritarian	16.94	< 0.005
not.overprotected	18.96	< 0.005
encouragePA	15.42	< 0.005
happy.child	27.87	< 0.005
walk.school	69.13	< 0.005
no.seconds	14.08	< 0.005
no.snacking	15.86	< 0.005
tidy.room	28.19	< 0.005
parents.watched.sport	16.58	< 0.005
parents.played	37.54	< 0.005
not.daydreamer	18.62	< 0.005
body.belonged	19.47	< 0.005
ignore.pain	16.06	< 0.005
not.talk.myself	17.23	< 0.005
not.bullied	14.15	< 0.005
never.lied	14.51	< 0.005
didPAwherever	13.96	< 0.005
never.worried	24.10	< 0.005
good.with.failure	15.63	< 0.005
moreconfidentPA	14.09	< 0.005
food.not.comfort	17.68	< 0.005
not.overweight	25.68	< 0.005
bodyshape.unconscious	15.13	< 0.005
not.lazy	22.05	< 0.005
good.concentrating	15.73	< 0.005
workhard.ok	18.76	< 0.005
competitive	13.91	< 0.005
not.clumsy	17.61	< 0.005
loved.school	16.96	< 0.005
thrived.competition	16.22	< 0.005
bad.grades	15.26	< 0.005
okwith.learning	16.51	< 0.005
lovedPE	23.68	< 0.005
not.bootcamp	19.62	< 0.005
not.joker	16.54	< 0.005
perfectionist	15.72	< 0.005
good.at.PE	18.02	< 0.005
maths.hard	19.20	< 0.005
english.hard	27.13	< 0.005
art.worst	27.07	< 0.005
PEfun	22.56	< 0.005
team.captain	45.51	< 0.005
PEteacher.got.on	20.02	< 0.005
good.teach.impress	24.70	< 0.005
picked.team	20.27	< 0.005
outsidePE	30.08	< 0.005
played.other	15.18	< 0.005
sociable	27.24	< 0.005
winner	27.57	< 0.005
compete.friends	17.46	< 0.005
sports.clubs	21.05	< 0.005
hated.reading	56.27	< 0.005
active.pastimes	14.27	< 0.005
no.library	26.73	< 0.005
never.dieting	83.27	< 0.005
active.not.club	22.89	< 0.005

Appendix 11. Study 2 - ANOVA Variables that showed no difference, small difference and moderate difference

A one-way analysis of variance (ANOVA) was undertaken. ANOVA is a test of difference, it compares the between group variance versus within groups variance with the null hypothesis being the means on a number of populations are equal. Here, variables are compared to the independent variable 'self-reported active/inactivity' with 3 groups: 1 = *active*, 2 = *mid range*, 3 = *inactive*. ANOVA shows any significant differences between the means of independent groups. Each mean has a confidence interval of 95%.

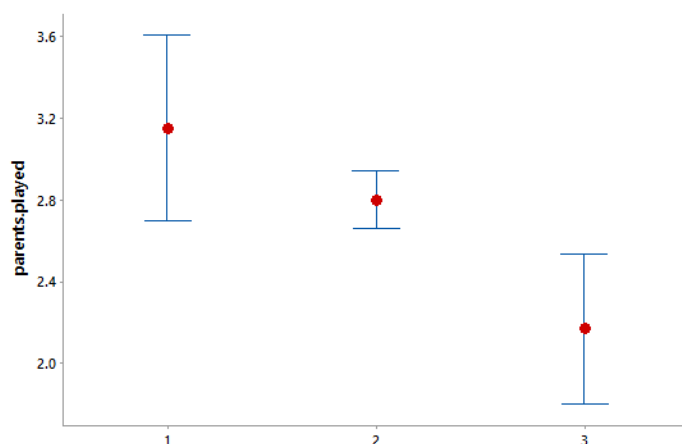
Of the 63 variables tested, 23 showed no significance and were discarded.

Variable	df	Sum of squares	Mean square	F	P	Eta squared
My family had no financial struggles when I was growing up	2	1.76	0.88	0.26	0.775	0.0006
My parents made sure I had the right kind of food	2	25.75	12.87	5.61	0.004	0.0147
I got on well with my siblings	2	21.42	10.71	4.20	0.015	0.0110
I was encouraged to explore the world	2	28.32	14.16	4.19	0.016	0.0110
Overall, my parents were not authoritarian	2	2.91	1.45	0.51	0.600	0.0013
My parents did not overprotect me	2	7.07	3.54	1.27	0.280	0.0033
I used to walk to school	2	5.91	2.96	0.85	0.427	0.0022
I rarely snacked between meals	2	4.37	2.18	0.81	0.445	0.0021
My room was tidy rather than messy. It was easy to clean up	2	2.18	1.09	0.38	0.683	0.0010
It always felt like my body belonged to me	2	15.88	7.94	3.36	0.035	0.008
I never used to talk to myself	2	6.27	3.14	1.11	0.330	0.0029
I was never bullied	2	11.50	5.75	1.92	0.147	0.0050
I never worried	2	40.65	20.33	5.04	0.007	0.0132
I did not use food as a comfort	2	48.18	24.09	8.89	0.000	0.0231
I was not overweight as a child	2	39.20	19.60	6.46	0.002	0.0169
I never had problems concentrating on tasks	2	31.01	15.50	4.70	0.009	0.0123
I was not physically clumsy	2	28.82	14.41	4.37	0.013	0.0115
Learning did not make me anxious	2	6.19	3.09	1.19	0.304	0.0031
I was not a joker in school	2	46.47	23.24	7.82	0.000	0.0204
I found English hard	2	1.25	0.62	0.23	0.796	0.0006
Art was one of my worst subjects	2	22.26	11.13	2.79	0.062	0.0073
I rarely visited and borrowed books from the library	2	4.46	2.23	0.70	0.496	0.0018
My friends and I were never dieting	2	0.75	0.38	0.18	0.839	0.0004

Those left were grouped by the strength of difference, with group 1 showing a small difference, group 2 showing moderate difference and group 3 showing a strong difference. Each table is ranked by effect size calculated using eta squared, (dividing the between sum of squares by the total sum of squares). This measures the degree of association in a sample. The range for interpretation is >0.01 = small effect, >0.06 = medium effect and >0.14 = large effect. Post hoc Dukey tests (Appendix 14) were done on each variable to check for significance of difference between groups 1 and 3.

GROUP 1. Variables showing a small difference.

Six variables in this group are all related to wellbeing, relationships with parents and the world. The figure below illustrates the small difference visually. All Interval plots can be found at Appendix 16.



In order to show difference the interval plots, that describe the mean and confidence interval (CI), must not overlap. Groups 1 and 3 are marginally separated. Example 'parents.played'

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Dukey adjusted P value between 1-3
My mother and father would support me	2	34.77	17.38	5.61	0.004	0.0147	0.004
I rarely had seconds at							

mealtimes	2	37.01	18.51	5.96	0.003	0.0156	0.002
I felt my mother and father loved me	2	32.65	16.32	5.93	0.003	0.0156	0.008
My mother and father would compliment me	2	39.72	19.86	6.08	0.002	0.0159	0.002
My parents played sport	2	42.49	21.25	6.74	0.001	0.0176	0.001
Although my parents didn't play sport, they watched it	2	66.44	33.22	9.52	0.000	0.0247	0.001

Group 1 variables - parents

Here, the eta squared value shows the variables have a small effect.

Questions around parents have positive responses from all groups but the active group consistently reported higher responses than the inactive group including mum and dad loved me. The active group were more likely to have seconds at mealtimes. Parents of active children were more likely to watch or play sport.

Another set of six variables in this group 1 clustered around intrinsic experiences of school.

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Dukey adjusted P value between 1-3
It was not discouraging to work harder than other and not see the same results	2	25.56	12.78	4.75	0.009	0.0125	0.009
I coped well with failure	2	35.32	17.66	5.60	0.004	0.0147	0.012
I wanted my teachers to think of me as a good student	2	21.98	10.99	6.12	0.002	0.0160	0.001
I was competitive	2	34.95	17.47	6.34	0.002	0.0166	0.001
At school I would strive to be as perfect as possible	2	31.01	15.51	6.64	0.001	0.0174	0.006
I was not a daydreamer	2	70.14	35.07	9.65	0.000	0.0250	0.001

Group 1 variables – intrinsic

The active group consistently report higher responses to all questions in this group regarding resilience and confidence. Active and inactive also tend to lie either side of the question mean.

In questions about academic ability:

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Dukey adjusted P value between 1-3
I found maths hard	2	56.34	28.17	6.88	0.001	0.0180	0.003
I got consistently bad grades in tests	2	27.99	13.99	4.83	0.008	0.0127	0.010

Group 1 variables – academic

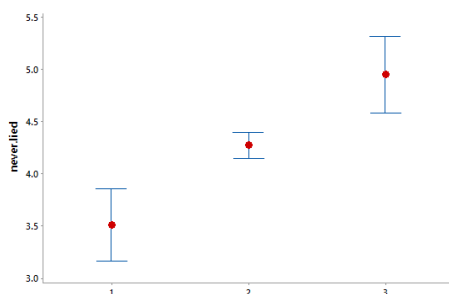
The active group showed to be better at Maths and got better grades than inactive pupils. However, it was the inactive group who preferred reading and the active group who participated in physical activity wherever possible.

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Dukey adjusted P value between 1-3
I hated reading	2	20.60	10.30	4.04	0.018	0.0106	0.014
I participated in physical activity wherever I could	2	39.09	19.54	6.35	0.002	0.0166	0.001

One-way ANOVA. Group 1 variables - activity

GROUP 2 variables show a moderate difference

This group consists of variables that showed moderate differences between groups as illustrated below.



A moderate difference between groups 1 and 3. Example 'never.lied'

The variables are related to intrinsic responses and extrinsic relationships with the outside world.

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Dukey adjusted P value between 1-3
I regularly played with others	2	65.26	32.63	10.62	0.000	0.0275	0.000
I was happy as a child	2	74.44	37.22	12.98	0.000	0.0334	0.000
I was sociable	2	58.55	29.27	14.26	0.000	0.0366	0.000
I never told lies	2	86.30	43.15	17.55	0.000	0.0447	0.000
I was not conscious of my body shape	2	120.61	60.31	17.73	0.000	0.0451	0.000
I loved school	2	128.97	64.49	18.55	0.000	0.0471	0.000
I was more confident in my physical skills rather than my thinking skills	2	121.16	60.58	20.51	0.000	0.0518	0.000
I was not lazy	2	135.59	67.8	24.49	0.000	0.0613	0.000

Group 2 variables – relationship with world

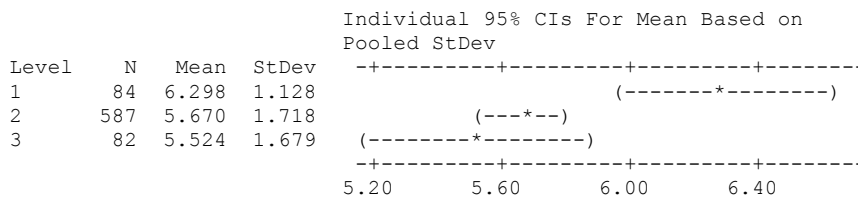
The active again consistently scored higher than inactive pupils. They played with others more, were more sociable, happier, confident in physical activity, less conscious of their body, were not lazy and loved school more. The only negative aspect of the active group found, was that they were more likely to tell lies. The eta squared value shows the variables have a small effect, except for 'I was not lazy' which showed a medium effect.

Appendix 12. Study 2 - ANOVA All variables v. active/inactive self report

One-way ANOVA: mum.dadlovedme versus C93

Source	DF	SS	MS	F	P
C93	2	32.65	16.32	5.93	0.003
Error	750	2063.89	2.75		
Total	752	2096.54			

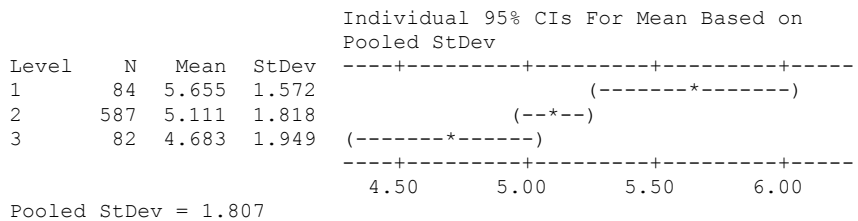
S = 1.659 R-Sq = 1.56% R-Sq(adj) = 1.29%



One-way ANOVA: compliment versus C93

Source	DF	SS	MS	F	P
C93	2	39.72	19.86	6.08	0.002
Error	750	2448.55	3.26		
Total	752	2488.27			

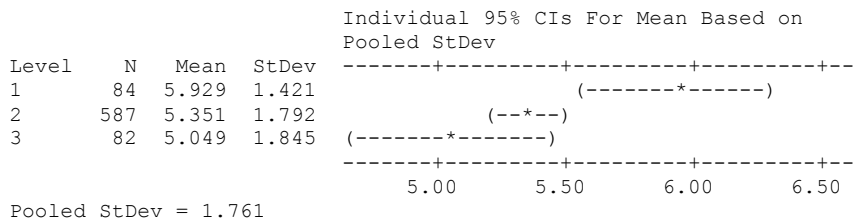
S = 1.807 R-Sq = 1.60% R-Sq(adj) = 1.33%



One-way ANOVA: support versus C93

Source	DF	SS	MS	F	P
C93	2	34.77	17.38	5.61	0.004
Error	750	2325.08	3.10		
Total	752	2359.85			

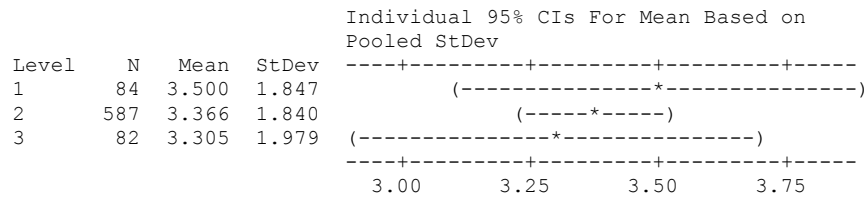
S = 1.761 R-Sq = 1.47% R-Sq(adj) = 1.21%



One-way ANOVA: nofinancial.struggle versus C93

Source	DF	SS	MS	F	P
C93	2	1.76	0.88	0.26	0.775
Error	750	2584.63	3.45		
Total	752	2586.39			

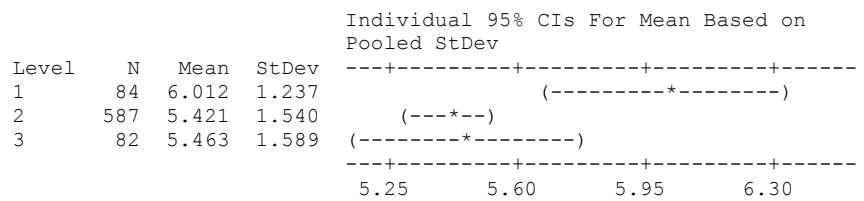
S = 1.856 R-Sq = 0.07% R-Sq(adj) = 0.00%



One-way ANOVA: right.food versus C93

Source	DF	SS	MS	F	P
C93	2	25.75	12.87	5.61	0.004
Error	750	1720.44	2.29		
Total	752	1746.19			

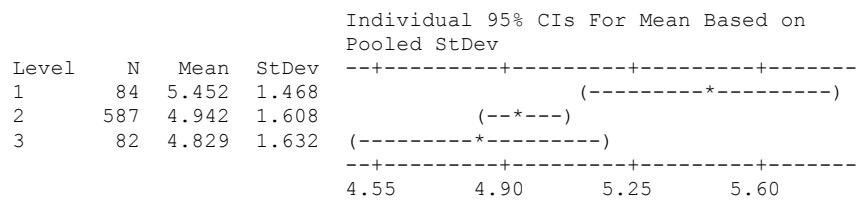
S = 1.515 R-Sq = 1.47% R-Sq(adj) = 1.21%



One-way ANOVA: siblings versus C93

Source	DF	SS	MS	F	P
C93	2	21.42	10.71	4.20	0.015
Error	750	1910.45	2.55		
Total	752	1931.87			

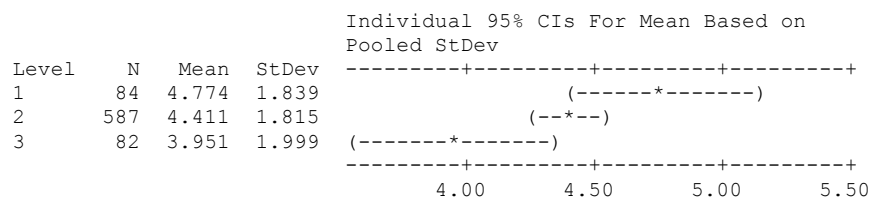
S = 1.596 R-Sq = 1.11% R-Sq(adj) = 0.84%



One-way ANOVA: explore.world versus C93

Source	DF	SS	MS	F	P
C93	2	28.32	14.16	4.19	0.016
Error	750	2534.56	3.38		
Total	752	2562.88			

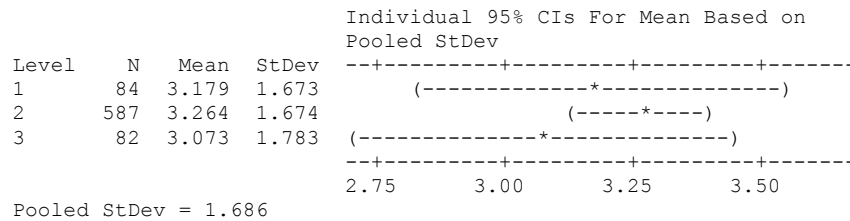
S = 1.838 R-Sq = 1.10% R-Sq(adj) = 0.84%



One-way ANOVA: not.authoritarian versus C93

Source	DF	SS	MS	F	P
C93	2	2.91	1.45	0.51	0.600
Error	750	2131.95	2.84		
Total	752	2134.86			

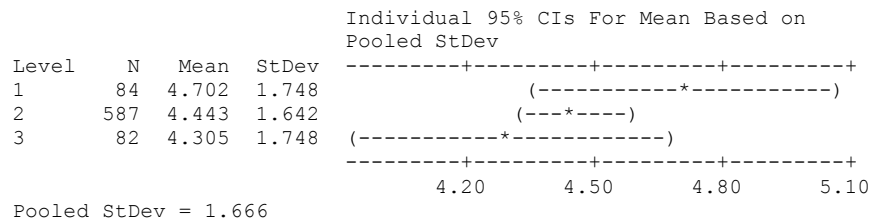
S = 1.686 R-Sq = 0.14% R-Sq(adj) = 0.00%



One-way ANOVA: not.overprotected versus C93

Source	DF	SS	MS	F	P
C93	2	7.07	3.54	1.27	0.280
Error	750	2081.78	2.78		
Total	752	2088.85			

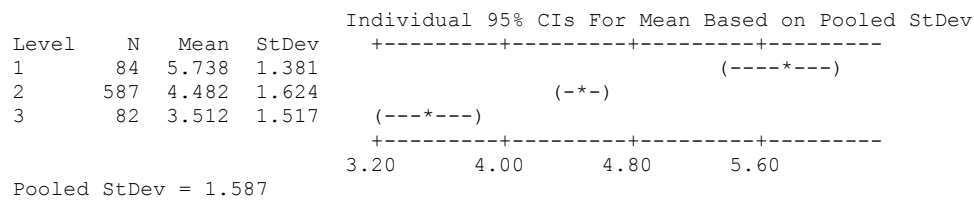
S = 1.666 R-Sq = 0.34% R-Sq(adj) = 0.07%



One-way ANOVA: encouragePA versus C93

Source	DF	SS	MS	F	P
C93	2	208.75	104.38	41.44	0.000
Error	750	1889.29	2.52		
Total	752	2098.04			

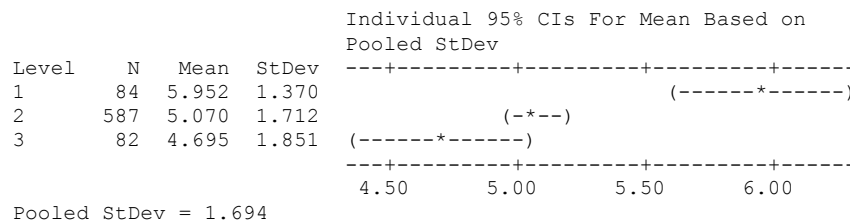
S = 1.587 R-Sq = 9.95% R-Sq(adj) = 9.71%



One-way ANOVA: happy.child versus C93

Source	DF	SS	MS	F	P
C93	2	74.44	37.22	12.98	0.000
Error	750	2151.32	2.87		
Total	752	2225.76			

S = 1.694 R-Sq = 3.34% R-Sq(adj) = 3.09%



One-way ANOVA: walk.school versus C93

Source	DF	SS	MS	F	P
C93	2	5.91	2.96	0.85	0.427
Error	750	2603.21	3.47		
Total	752	2609.13			

S = 1.863 R-Sq = 0.23% R-Sq(adj) = 0.00%



Level	N	Mean	StDev
1	84	5.429	2.055
2	587	5.552	1.857
3	82	5.793	1.690

Pooled StDev = 1.863

One-way ANOVA: no.seconds versus C93

Source	DF	SS	MS	F	P
C93	2	37.01	18.51	5.96	0.003
Error	750	2330.64	3.11		
Total	752	2367.66			

S = 1.763 R-Sq = 1.56% R-Sq(adj) = 1.30%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	84	3.500	1.917
2	587	4.085	1.737
3	82	4.415	1.784

Pooled StDev = 1.763

One-way ANOVA: no.snacking versus C93

Source	DF	SS	MS	F	P
C93	2	4.37	2.18	0.81	0.445
Error	750	2023.06	2.70		
Total	752	2027.43			

S = 1.642 R-Sq = 0.22% R-Sq(adj) = 0.00%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	84	4.143	1.743
2	587	4.273	1.615
3	82	4.463	1.730

Pooled StDev = 1.642

One-way ANOVA: tidy.room versus C93

Source	DF	SS	MS	F	P
C93	2	2.18	1.09	0.38	0.683
Error	750	2137.76	2.85		
Total	752	2139.93			

S = 1.688 R-Sq = 0.10% R-Sq(adj) = 0.00%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	84	5.298	1.734
2	587	5.126	1.674
3	82	5.134	1.741

Pooled StDev = 1.688

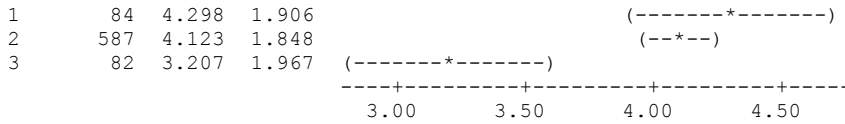
One-way ANOVA: parents.watched.sport versus C93

Source	DF	SS	MS	F	P
C93	2	66.44	33.22	9.52	0.000
Error	750	2616.20	3.49		
Total	752	2682.64			

S = 1.868 R-Sq = 2.48% R-Sq(adj) = 2.22%

Individual 95% CIs For Mean Based on Pooled StDev

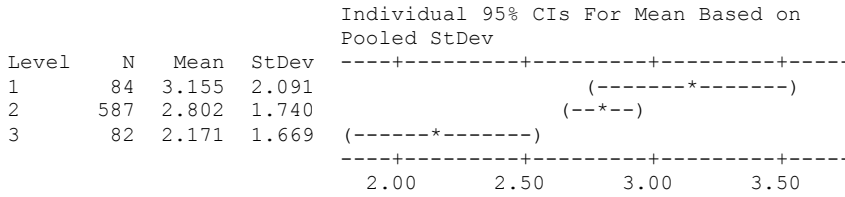
Level	N	Mean	StDev
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One-way ANOVA: parents.played versus C93

Source	DF	SS	MS	F	P
C93	2	42.49	21.25	6.74	0.001
Error	750	2363.67	3.15		
Total	752	2406.17			

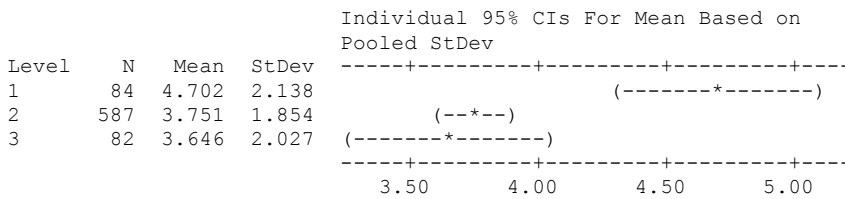
S = 1.775 R-Sq = 1.77% R-Sq(adj) = 1.50%



One-way ANOVA: not.daydreamer versus C93

Source	DF	SS	MS	F	P
C93	2	70.14	35.07	9.65	0.000
Error	750	2725.99	3.63		
Total	752	2796.13			

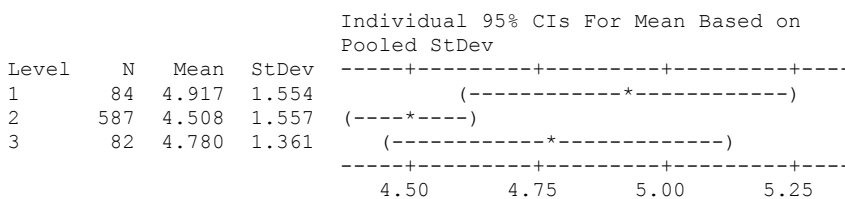
S = 1.906 R-Sq = 2.51% R-Sq(adj) = 2.25%



One-way ANOVA: body.belonged versus C93

Source	DF	SS	MS	F	P
C93	2	15.88	7.94	3.36	0.035
Error	750	1771.18	2.36		
Total	752	1787.06			

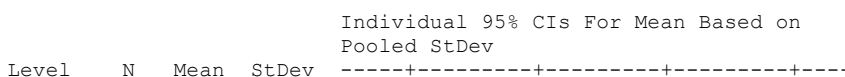
S = 1.537 R-Sq = 0.89% R-Sq(adj) = 0.62%

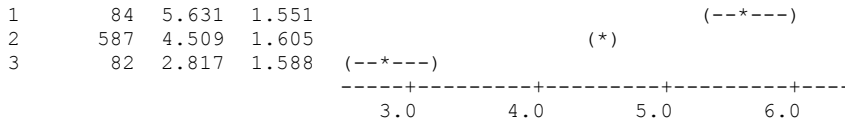


One-way ANOVA: ignore.pain versus C93

Source	DF	SS	MS	F	P
C93	2	337.87	168.93	66.25	0.000
Error	750	1912.51	2.55		
Total	752	2250.38			

S = 1.597 R-Sq = 15.01% R-Sq(adj) = 14.79%

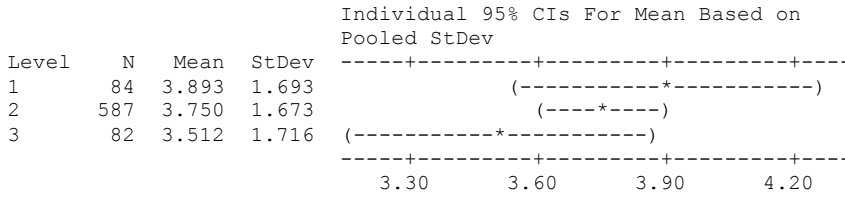




One-way ANOVA: not.talk.myself versus C93

Source	DF	SS	MS	F	P
C93	2	6.27	3.14	1.11	0.330
Error	750	2116.71	2.82		
Total	752	2122.98			

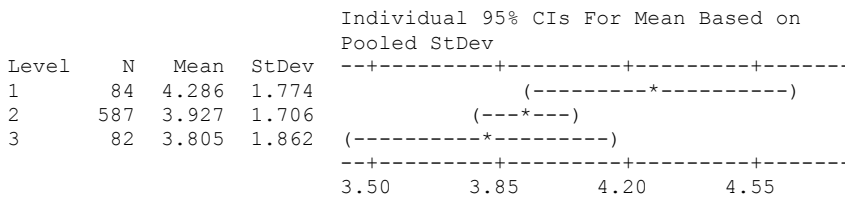
S = 1.680 R-Sq = 0.30% R-Sq(adj) = 0.03%



One-way ANOVA: not.bullied versus C93

Source	DF	SS	MS	F	P
C93	2	11.50	5.75	1.92	0.147
Error	750	2247.87	3.00		
Total	752	2259.37			

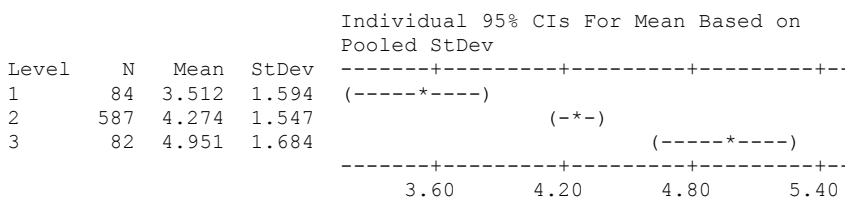
S = 1.731 R-Sq = 0.51% R-Sq(adj) = 0.24%



One-way ANOVA: never.lied versus C93

Source	DF	SS	MS	F	P
C93	2	86.30	43.15	17.55	0.000
Error	750	1843.63	2.46		
Total	752	1929.94			

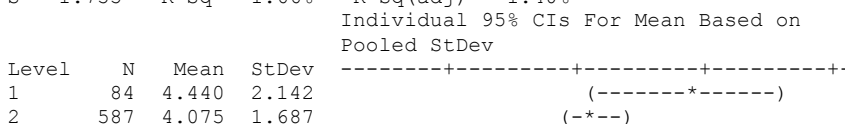
S = 1.568 R-Sq = 4.47% R-Sq(adj) = 4.22%



One-way ANOVA: didPAwherever versus C93

Source	DF	SS	MS	F	P
C93	2	39.09	19.54	6.35	0.002
Error	750	2309.89	3.08		
Total	752	2348.98			

S = 1.755 R-Sq = 1.66% R-Sq(adj) = 1.40%

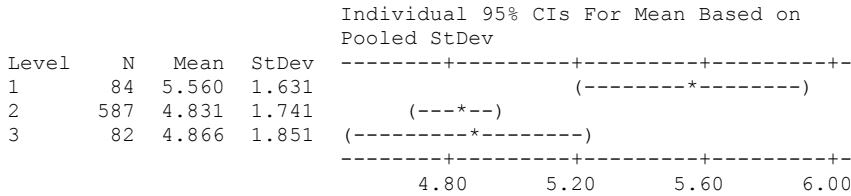


Pooled StDev = 1.647 4.55 4.90 5.25 5.60

One-way ANOVA: not.overweight versus C93

Source	DF	SS	MS	F	P
C93	2	39.20	19.60	6.46	0.002
Error	750	2274.53	3.03		
Total	752	2313.73			

S = 1.741 R-Sq = 1.69% R-Sq(adj) = 1.43%

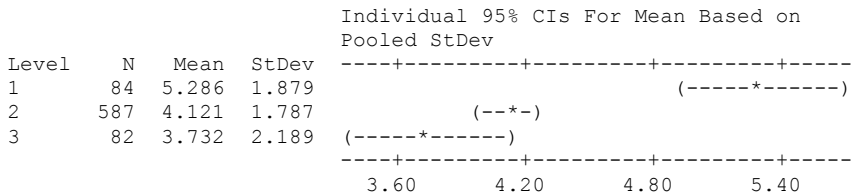


Pooled StDev = 1.741

One-way ANOVA: bodyshape.conscious versus C93

Source	DF	SS	MS	F	P
C93	2	120.61	60.31	17.73	0.000
Error	750	2551.65	3.40		
Total	752	2672.27			

S = 1.845 R-Sq = 4.51% R-Sq(adj) = 4.26%

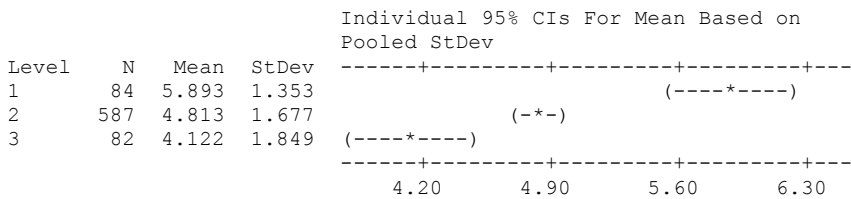


Pooled StDev = 1.845

One-way ANOVA: not.lazy versus C93

Source	DF	SS	MS	F	P
C93	2	135.59	67.80	24.49	0.000
Error	750	2076.20	2.77		
Total	752	2211.80			

S = 1.664 R-Sq = 6.13% R-Sq(adj) = 5.88%

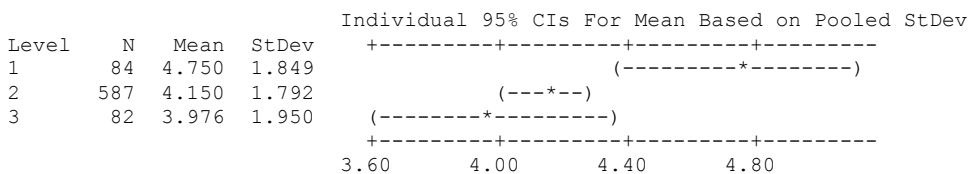


Pooled StDev = 1.664

One-way ANOVA: good.concentrating versus C93

Source	DF	SS	MS	F	P
C93	2	31.01	15.50	4.70	0.009
Error	750	2472.51	3.30		
Total	752	2503.52			

S = 1.816 R-Sq = 1.24% R-Sq(adj) = 0.98%

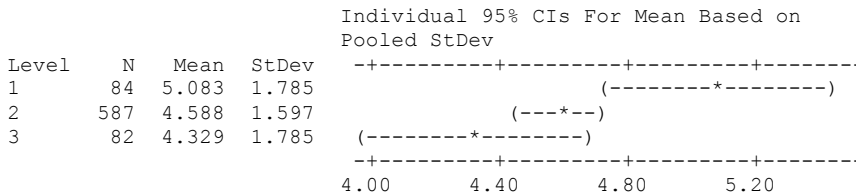


Pooled StDev = 1.816

One-way ANOVA: workhard.ok versus C93

Source	DF	SS	MS	F	P
C93	2	25.56	12.78	4.75	0.009
Error	750	2016.76	2.69		
Total	752	2042.31			

S = 1.640 R-Sq = 1.25% R-Sq(adj) = 0.99%

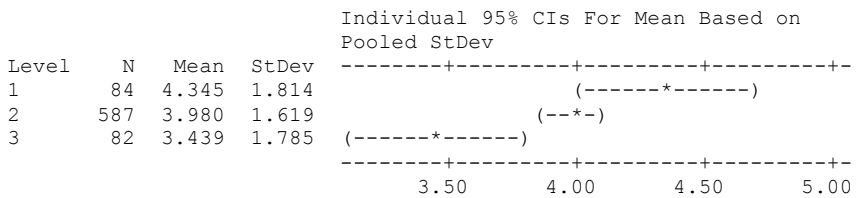


Pooled StDev = 1.640

One-way ANOVA: competitive versus C93

Source	DF	SS	MS	F	P
C93	2	34.95	17.47	6.34	0.002
Error	750	2066.94	2.76		
Total	752	2101.88			

S = 1.660 R-Sq = 1.66% R-Sq(adj) = 1.40%

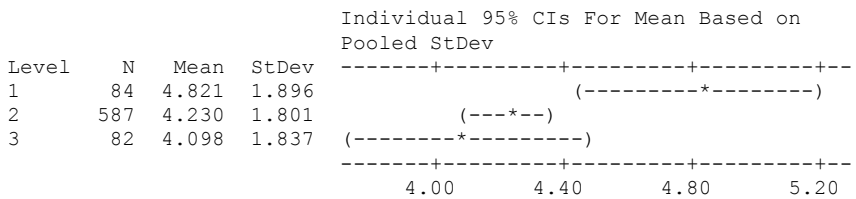


Pooled StDev = 1.660

One-way ANOVA: not.clumsy versus C93

Source	DF	SS	MS	F	P
C93	2	28.82	14.41	4.37	0.013
Error	750	2471.49	3.30		
Total	752	2500.31			

S = 1.815 R-Sq = 1.15% R-Sq(adj) = 0.89%

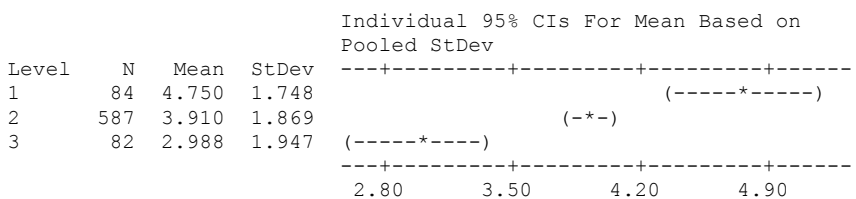


Pooled StDev = 1.815

One-way ANOVA: loved.school versus C93

Source	DF	SS	MS	F	P
C93	2	128.97	64.49	18.55	0.000
Error	750	2606.95	3.48		
Total	752	2735.92			

S = 1.864 R-Sq = 4.71% R-Sq(adj) = 4.46%

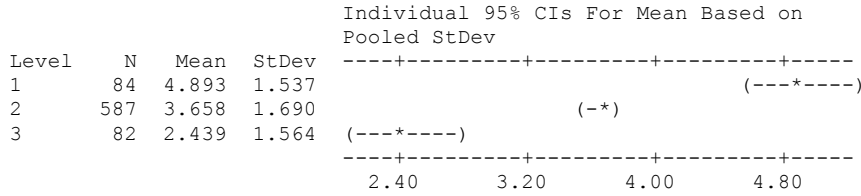


Pooled StDev = 1.864

One-way ANOVA: thrived.competition versus C93

Source	DF	SS	MS	F	P
C93	2	249.92	124.96	45.31	0.000
Error	750	2068.40	2.76		
Total	752	2318.32			

S = 1.661 R-Sq = 10.78% R-Sq(adj) = 10.54%

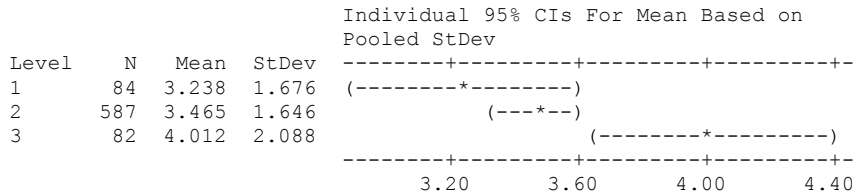


Pooled StDev = 1.661

One-way ANOVA: bad.grades versus C93

Source	DF	SS	MS	F	P
C93	2	27.99	13.99	4.83	0.008
Error	750	2174.26	2.90		
Total	752	2202.25			

S = 1.703 R-Sq = 1.27% R-Sq(adj) = 1.01%

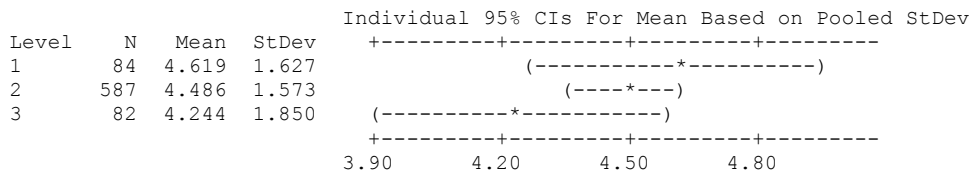


Pooled StDev = 1.703

One-way ANOVA: okwith.learning versus C93

Source	DF	SS	MS	F	P
C93	2	6.19	3.09	1.19	0.304
Error	750	1947.56	2.60		
Total	752	1953.75			

S = 1.611 R-Sq = 0.32% R-Sq(adj) = 0.05%

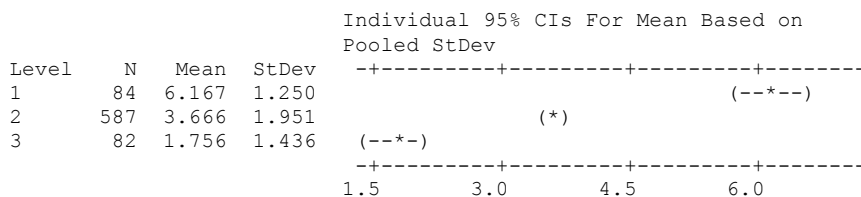


Pooled StDev = 1.611

One-way ANOVA: lovedPE versus C93

Source	DF	SS	MS	F	P
C93	2	820.59	410.30	121.76	0.000
Error	750	2527.34	3.37		
Total	752	3347.94			

S = 1.836 R-Sq = 24.51% R-Sq(adj) = 24.31%

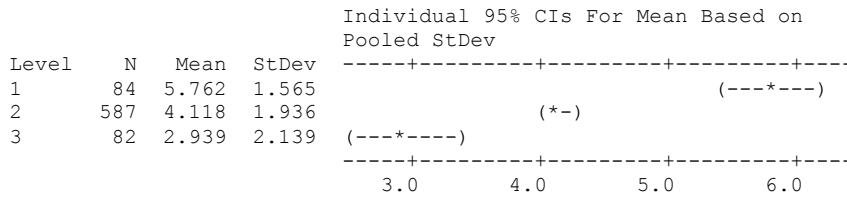


Pooled StDev = 1.836

One-way ANOVA: not.bootcamp versus C93

Source	DF	SS	MS	F	P
C93	2	338.73	169.37	45.84	0.000
Error	750	2770.82	3.69		
Total	752	3109.56			

S = 1.922 R-Sq = 10.89% R-Sq(adj) = 10.66%

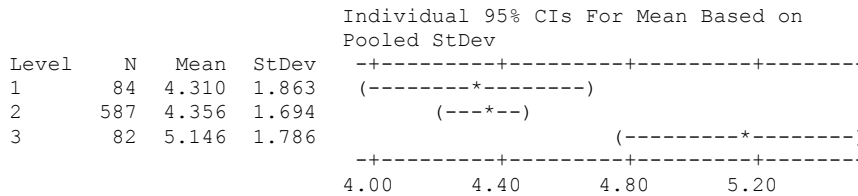


Pooled StDev = 1.922

One-way ANOVA: not.joker versus C93

Source	DF	SS	MS	F	P
C93	2	46.47	23.24	7.82	0.000
Error	750	2228.78	2.97		
Total	752	2275.25			

S = 1.724 R-Sq = 2.04% R-Sq(adj) = 1.78%

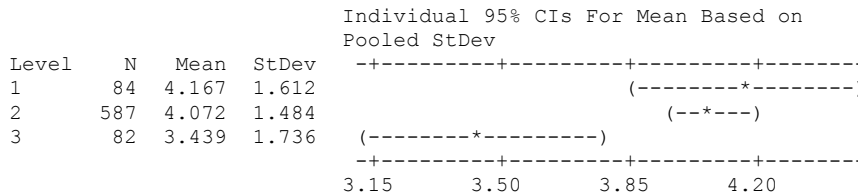


Pooled StDev = 1.724

One-way ANOVA: perfectionist versus C93

Source	DF	SS	MS	F	P
C93	2	31.01	15.51	6.64	0.001
Error	750	1750.86	2.33		
Total	752	1781.87			

S = 1.528 R-Sq = 1.74% R-Sq(adj) = 1.48%

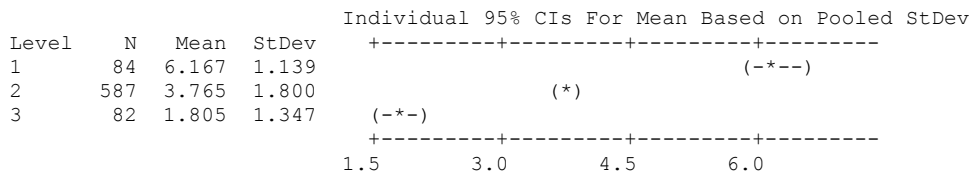


Pooled StDev = 1.528

One-way ANOVA: good.at.PE versus C93

Source	DF	SS	MS	F	P
C93	2	797.34	398.67	138.81	0.000
Error	750	2154.10	2.87		
Total	752	2951.44			

S = 1.695 R-Sq = 27.02% R-Sq(adj) = 26.82%



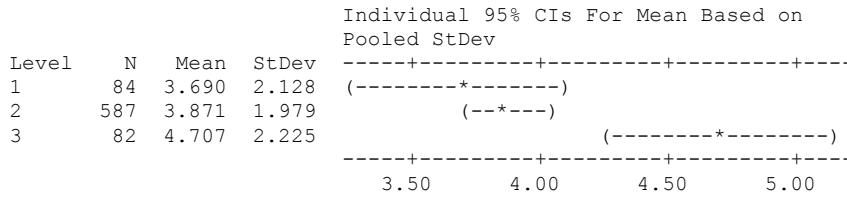
Pooled StDev = 1.695

One-way ANOVA: maths.hard versus C93

Source	DF	SS	MS	F	P
C93	2	56.34	28.17	6.88	0.001

Error 750 3073.09 4.10
 Total 752 3129.43

S = 2.024 R-Sq = 1.80% R-Sq(adj) = 1.54%

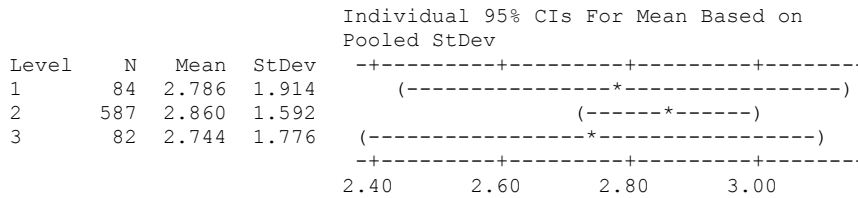


Pooled StDev = 2.024

One-way ANOVA: english.hard versus C93

Source	DF	SS	MS	F	P
C93	2	1.25	0.62	0.23	0.796
Error	750	2044.31	2.73		
Total	752	2045.56			

S = 1.651 R-Sq = 0.06% R-Sq(adj) = 0.00%

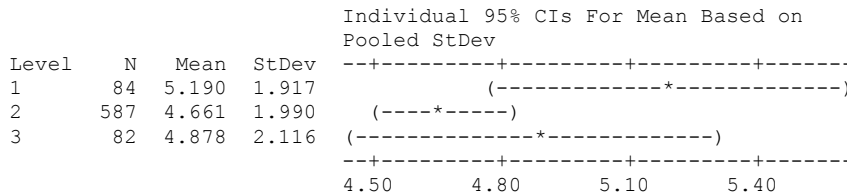


Pooled StDev = 1.651

One-way ANOVA: art.worst versus C93

Source	DF	SS	MS	F	P
C93	2	22.26	11.13	2.79	0.062
Error	750	2989.27	3.99		
Total	752	3011.53			

S = 1.996 R-Sq = 0.74% R-Sq(adj) = 0.47%

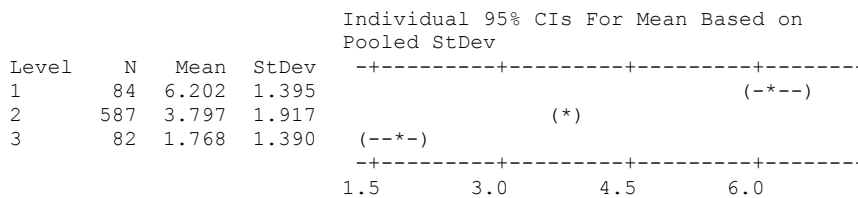


Pooled StDev = 1.996

One-way ANOVA: Pefun versus C93

Source	DF	SS	MS	F	P
C93	2	821.79	410.89	124.71	0.000
Error	750	2471.03	3.29		
Total	752	3292.82			

S = 1.815 R-Sq = 24.96% R-Sq(adj) = 24.76%



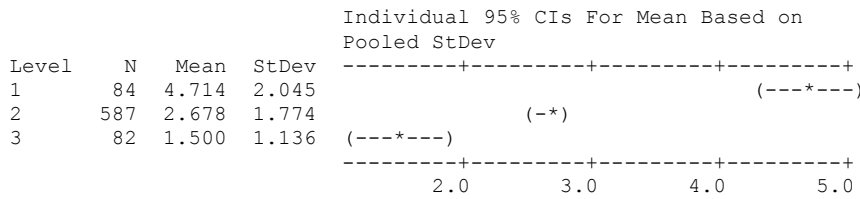
Pooled StDev = 1.815

One-way ANOVA: team.captain versus C93

Source	DF	SS	MS	F	P
C93	2	454.73	227.36	74.28	0.000
Error	750	2295.79	3.06		

Total 752 2750.52

S = 1.750 R-Sq = 16.53% R-Sq(adj) = 16.31%

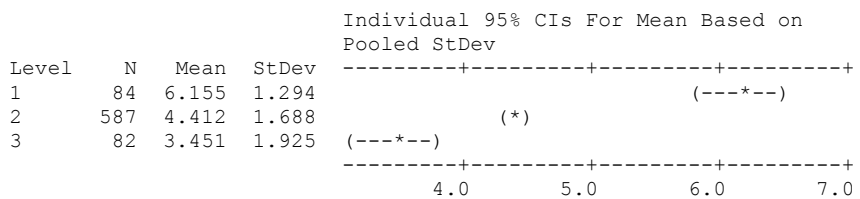


Pooled StDev = 1.750

One-way ANOVA: PEteacher.got.on versus C93

Source	DF	SS	MS	F	P
C93	2	324.72	162.36	57.72	0.000
Error	750	2109.52	2.81		
Total	752	2434.25			

S = 1.677 R-Sq = 13.34% R-Sq(adj) = 13.11%

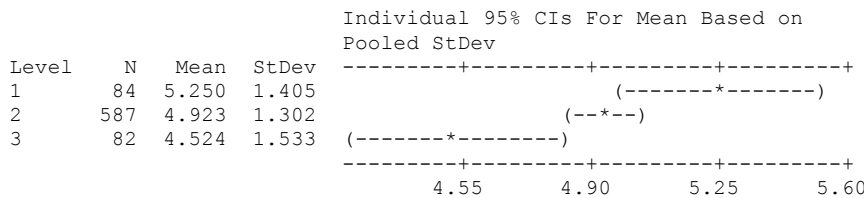


Pooled StDev = 1.677

One-way ANOVA: good.teach.impress versus C93

Source	DF	SS	MS	F	P
C93	2	21.98	10.99	6.12	0.002
Error	750	1347.75	1.80		
Total	752	1369.73			

S = 1.341 R-Sq = 1.60% R-Sq(adj) = 1.34%

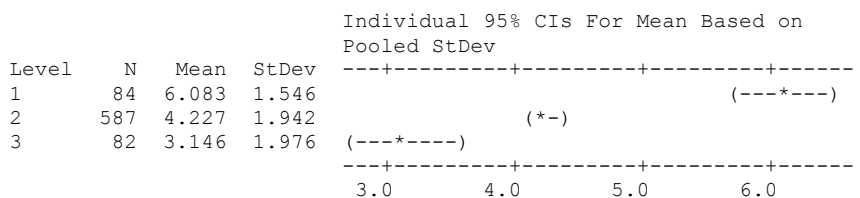


Pooled StDev = 1.341

One-way ANOVA: picked.team versus C93

Source	DF	SS	MS	F	P
C93	2	379.25	189.62	52.18	0.000
Error	750	2725.53	3.63		
Total	752	3104.78			

S = 1.906 R-Sq = 12.22% R-Sq(adj) = 11.98%

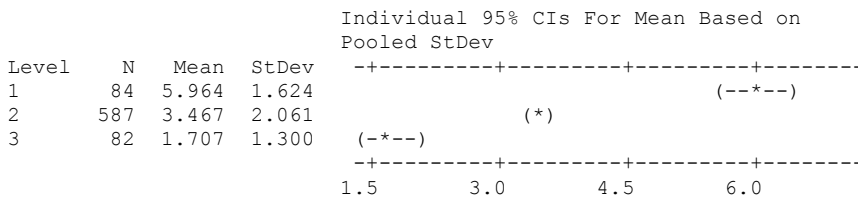


Pooled StDev = 1.906

One-way ANOVA: outsidePE versus C93

Source	DF	SS	MS	F	P
C93	2	772.10	386.05	101.74	0.000
Error	750	2845.97	3.79		
Total	752	3618.07			

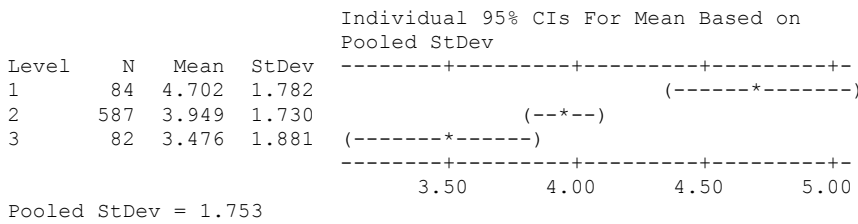
S = 1.948 R-Sq = 21.34% R-Sq(adj) = 21.13%



One-way ANOVA: played.others versus C93

Source	DF	SS	MS	F	P
C93	2	65.26	32.63	10.62	0.000
Error	750	2304.48	3.07		
Total	752	2369.74			

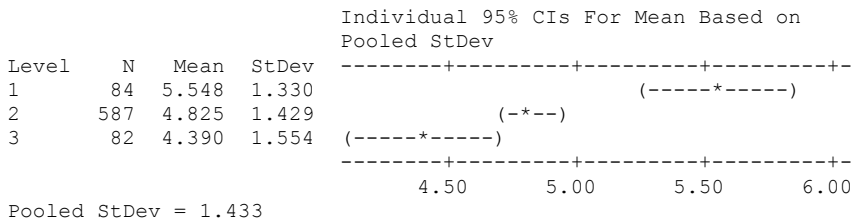
S = 1.753 R-Sq = 2.75% R-Sq(adj) = 2.49%



One-way ANOVA: sociable versus C93

Source	DF	SS	MS	F	P
C93	2	58.55	29.27	14.26	0.000
Error	750	1539.25	2.05		
Total	752	1597.80			

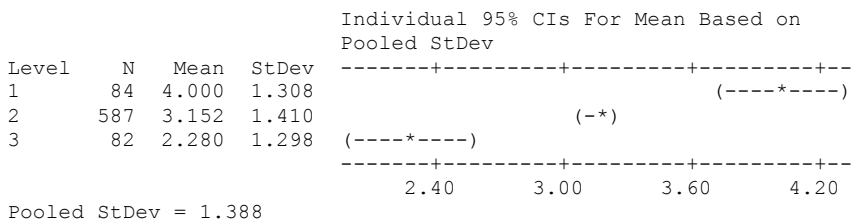
S = 1.433 R-Sq = 3.66% R-Sq(adj) = 3.41%



One-way ANOVA: winner versus C93

Source	DF	SS	MS	F	P
C93	2	122.69	61.34	31.86	0.000
Error	750	1444.05	1.93		
Total	752	1566.74			

S = 1.388 R-Sq = 7.83% R-Sq(adj) = 7.58%



One-way ANOVA: compete.friends versus C93

Source	DF	SS	MS	F	P
C93	2	220.20	110.10	47.25	0.000
Error	750	1747.56	2.33		
Total	752	1967.76			

S = 1.526 R-Sq = 11.19% R-Sq(adj) = 10.95%

				Individual 95% CIs For Mean Based on Pooled StDev	
Level	N	Mean	StDev	-----+-----+-----+-----	
1	84	4.917	1.482		(---*---)
2	587	3.898	1.532	(-*)	
3	82	2.622	1.529	(---*---)	

2.40 3.20 4.00 4.80

Pooled StDev = 1.526

One-way ANOVA: sport.clubs versus C93

Source	DF	SS	MS	F	P
C93	2	287.89	143.94	43.74	0.000
Error	750	2468.36	3.29		
Total	752	2756.25			

S = 1.814 R-Sq = 10.44% R-Sq(adj) = 10.21%

				Individual 95% CIs For Mean Based on Pooled StDev	
Level	N	Mean	StDev	-----+-----+-----+-----	
1	84	4.893	1.843		(---*---)
2	587	3.470	1.832	(-*)	
3	82	2.268	1.648	(---*---)	

2.0 3.0 4.0 5.0

Pooled StDev = 1.814

One-way ANOVA: hated.reading versus C93

Source	DF	SS	MS	F	P
C93	2	20.60	10.30	4.04	0.018
Error	750	1910.24	2.55		
Total	752	1930.84			

S = 1.596 R-Sq = 1.07% R-Sq(adj) = 0.80%

				Individual 95% CIs For Mean Based on Pooled StDev	
Level	N	Mean	StDev	-----+-----+-----+-----	
1	84	2.631	1.835		(-----*-----)
2	587	2.365	1.562	(---*---)	
3	82	1.939	1.574	(-----*-----)	

1.75 2.10 2.45 2.80

Pooled StDev = 1.596

One-way ANOVA: active.pastimes versus C93

Source	DF	SS	MS	F	P
C93	2	192.68	96.34	30.96	0.000
Error	750	2333.88	3.11		
Total	752	2526.56			

S = 1.764 R-Sq = 7.63% R-Sq(adj) = 7.38%

				Individual 95% CIs For Mean Based on Pooled StDev	
Level	N	Mean	StDev	-----+-----+-----+-----	
1	84	5.333	1.653		(---*---)
2	587	4.026	1.767	(*-)	
3	82	3.232	1.848	(---*---)	

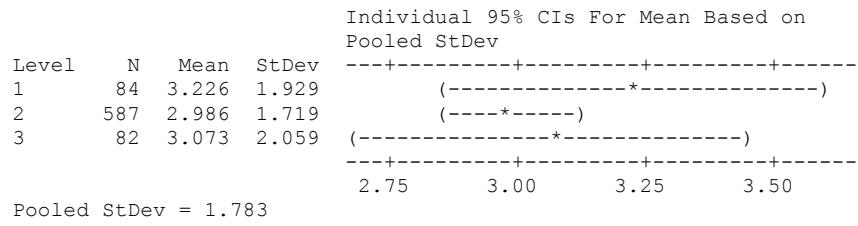
3.20 4.00 4.80 5.60

Pooled StDev = 1.764

One-way ANOVA: no.library versus C93

Source	DF	SS	MS	F	P
C93	2	4.46	2.23	0.70	0.496
Error	750	2384.15	3.18		
Total	752	2388.62			

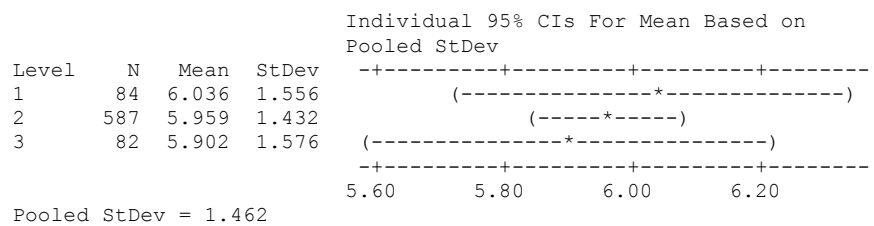
S = 1.783 R-Sq = 0.19% R-Sq(adj) = 0.00%



One-way ANOVA: never.dieting versus C93

Source	DF	SS	MS	F	P
C93	2	0.75	0.38	0.18	0.839
Error	750	1603.13	2.14		
Total	752	1603.88			

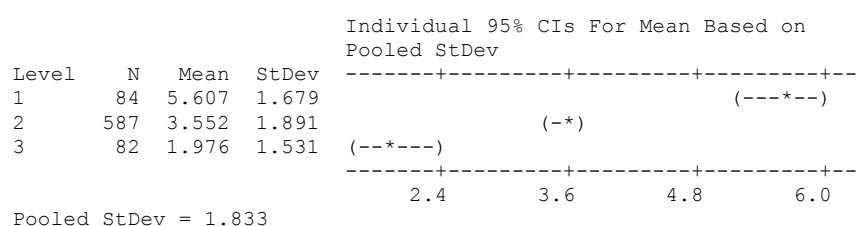
S = 1.462 R-Sq = 0.05% R-Sq(adj) = 0.00%



One-way ANOVA: active.not.club versus C93

Source	DF	SS	MS	F	P
C93	2	556.06	278.03	82.77	0.000
Error	750	2519.15	3.36		
Total	752	3075.21			

S = 1.833 R-Sq = 18.08% R-Sq(adj) = 17.86%



Appendix 13. Study 2 - ANOVA All variables v. type of school and home v. m/f

Test to investigate the effects of the type of school attended.

This test looked to find if the type of school respondents went to had any significance to their responses, and if differences could be seen. All variables were put through ANOVA with each variable versus type of school. Most variables showed no difference across the educational institutions and these were discarded. Those with significance are shown below with descriptions. Interval plots show 95% CI from the mean. The full test can be found at end of this Appendix.

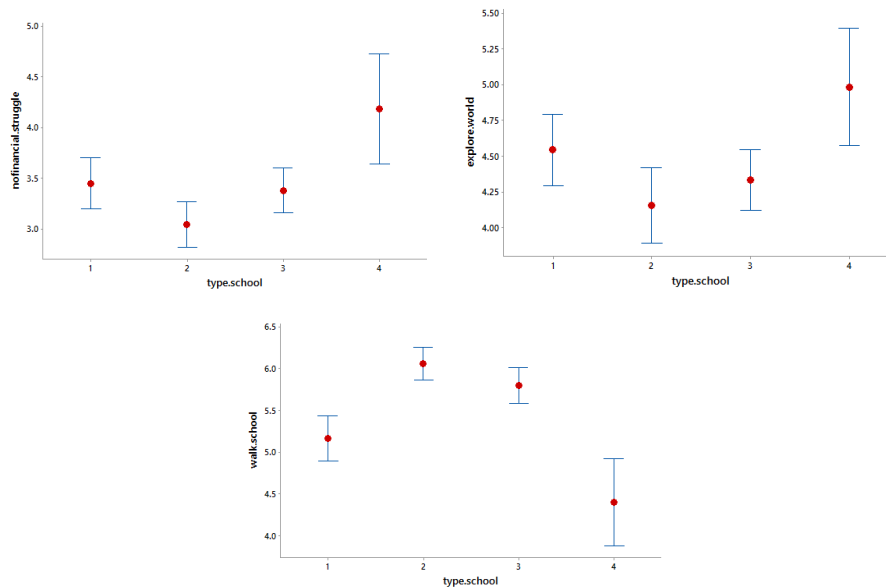
Level 1 = grammar, 2 = secondary modern, 3 = comprehensive, 4 = public.

Variable	df	Sum of squares	Mean square	F value	P value	Eta squared	Post hoc Dukey adjusted P value between groups with sig.
My family had no financial struggles when I was growing up	3	65.94	21.98	6.65	0.000	0.0244	4-1 0.023 4-2 0.000 4-3 0.008
I was encouraged to explore the world	3	47.22	15.74	4.66	0.003	0.0172	4-2 0.008
I used to walk to school	3	196.49	65.50	20.39	0.000	0.0713	2-1 0.000 3-1 0.001 4-1 0.013 4-2 0.000 4-3 0.000
I was more confident in my physical skills rather than my thinking skills	3	31.74	10.58	3.43	0.017	0.0127	4-1 0.000
I found maths hard	3	72.88	24.29	5.97	0.001	0.0220	2-1 0.005 4-2 0.028
I found English hard	3	45.79	15.26	5.66	0.001	0.0208	2-1 0.025 3-1 0.002
I hated reading	3	49.09	16.36	6.43	0.000	0.0236	2-1 0.000 3-1 0.000
I rarely visited and borrowed books from the library	3	38.64	12.88	4.09	0.007	0.0151	2-1 0.018

Traits v. type school

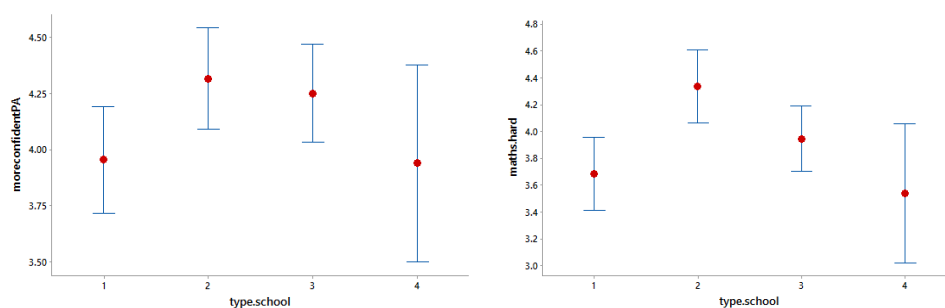
Respondents who went to public school came from a more stable financial background than all the other three groups. They were encouraged to explore the world more than secondary modern school pupils and were far less likely to walk to school than all three other groups. These findings reflect

contemporaneous literature and reports discussed in chapter 2. It should also be noted that public school respondents reported the widest range of answers across each variable in the initial ANOVA test. It is a small sample size and the confidence range would increase with a larger sample.



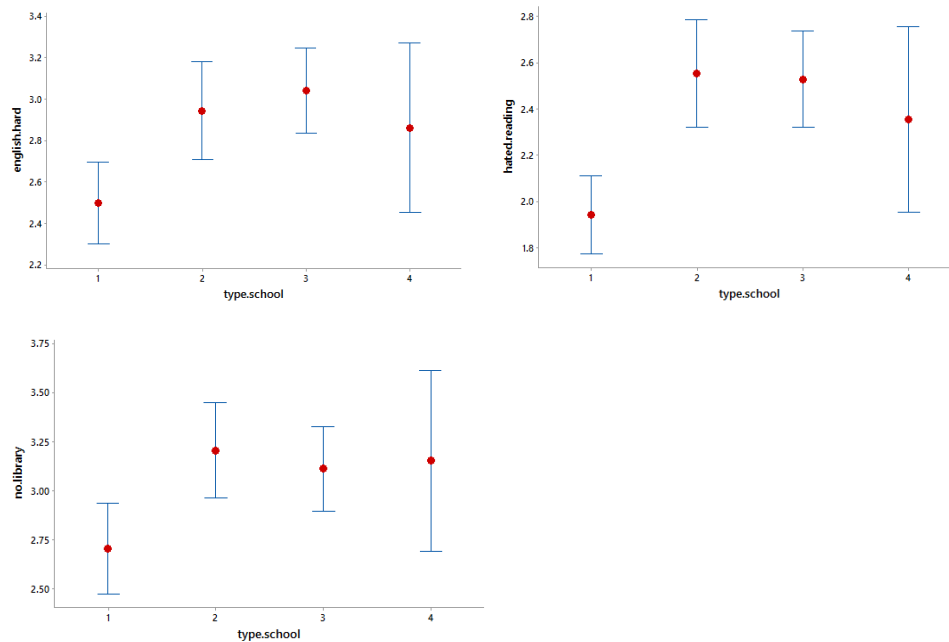
nofinancial.struggle, explore.world and walk.school v. type.of.school

Secondary modern school children were more physically confident than grammar school children and were also more likely to walk to school than grammar school pupils. They also found maths harder than both grammar and public school pupils. These reflect the literature and narratives in study 3.



moreconfidentPA and maths.hard v. type.of.school

Grammar school pupils found English easier than both secondary modern and comprehensive pupils, liked reading more than both secondary modern and comprehensive pupils and visited the library more than secondary modern pupils (below). This reflects both the literature and client narratives.



English.hard, hated.reading, and nolibrary v. type of school

This test showed differences related to type of school that can be bracketed into three areas:

Economic - Public school pupils reported coming from much more stable financial backgrounds than all three other groups. They were also least likely to walk to school with secondary modern children walking more than grammar school children.

Intrinsic - Public school pupils were encouraged to explore the world more than secondary modern pupils. However, secondary modern children were more confident physically than grammar school children but those at

grammar school were more prepared to work hard even if they didn't see good results compared to others.

Academic - Grammar school children liked English more, read more than secondary modern and comprehensive children and were more likely to go to the library than their secondary modern counterparts. The weakest at maths were the secondary modern children.

These results reflect the literature found, in that secondary modern children were weaker academically, weak in confidence all underpinned by coming from a poorer background and also reflected the narrations of both clients, narratives from study 3 and reported client experience from study 1.

As 'home life' had been shown to be significant in the principal component analysis, this theme was revisited using ANOVA to see differences between men and women. Traits that showed no difference between men and women were removed, which included: mum and dad loved me, no financial struggle, right food, siblings, not overprotected, happy as child, walked to school, no snacking, tidy room, parents watched sport, parents played sport. The whole test can be found at the end of this appendix. Eta squared shows a small effect across all variables.

Variable	df	Sum of squares	Mean square	F	P	Eta squared	Post hoc Dukey adjusted P value between groups
My mother and father would compliment me	2	48.85	24.43	7.53	0.001	0.0185	0.003
My mother and father would support and comfort me when I needed it	2	27.30	13.65	4.45	0.012	0.0110	0.040
I was encouraged to explore the world	2	50.28	25.14	7.45	0.001	0.0183	0.004
My parents encouraged me to be physically active	2	38.75	19.38	7.09	0.001	0.0174	0.004
I rarely had seconds at mealtimes	2	50.04	25.02	8.01	0.000	0.0197	0.004
Overall, my parents were not authoritarian	2	49.27	24.64	8.93	0.000	0.0219	0.000

Parents complimented and supported their children and encouraged them to

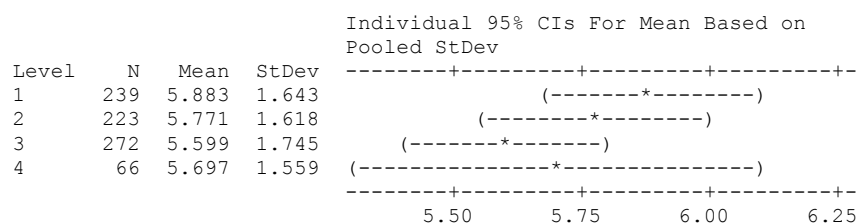
do physical activity and to explore the world. All traits were reported positively with means higher than 4. Men also responded higher than women. They also have less meal seconds than females but more instances of growing up with authoritarian parents. The picture is that boys were encouraged to be more out going and to be more physical than girls. This findings agree with client narrations of the era.

ALL VARIABLES v. TYPE OF SCHOOL

One-way ANOVA: mum.dadlovedme versus type.school

Source	DF	SS	MS	F	P
type.school	3	10.60	3.53	1.27	0.282
Error	796	2207.32	2.77		
Total	799	2217.92			

S = 1.665 R-Sq = 0.48% R-Sq(adj) = 0.10%

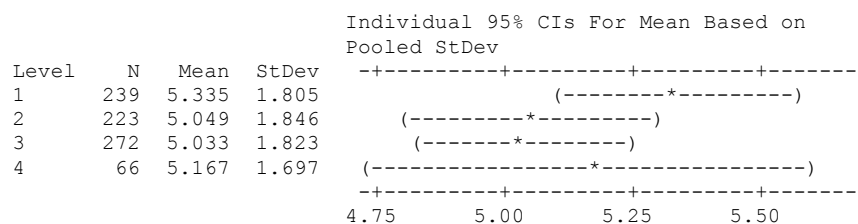


Pooled StDev = 1.665

One-way ANOVA: compliment versus type.school

Source	DF	SS	MS	F	P
type.school	3	14.05	4.68	1.42	0.235
Error	796	2619.55	3.29		
Total	799	2633.60			

S = 1.814 R-Sq = 0.53% R-Sq(adj) = 0.16%

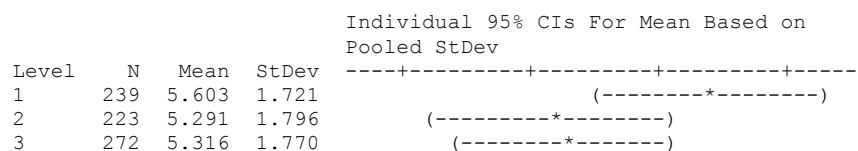


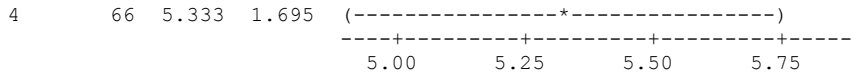
Pooled StDev = 1.814

One-way ANOVA: support versus type.school

Source	DF	SS	MS	F	P
type.school	3	14.62	4.87	1.58	0.193
Error	796	2456.77	3.09		
Total	799	2471.39			

S = 1.757 R-Sq = 0.59% R-Sq(adj) = 0.22%



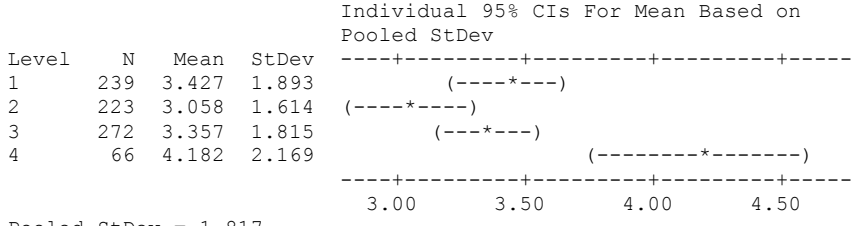


Pooled StDev = 1.757

One-way ANOVA: nofinancial.struggle versus type.school

Source	DF	SS	MS	F	P
type.school	3	65.94	21.98	6.65	0.000
Error	796	2628.94	3.30		
Total	799	2694.87			

S = 1.817 R-Sq = 2.45% R-Sq(adj) = 2.08%

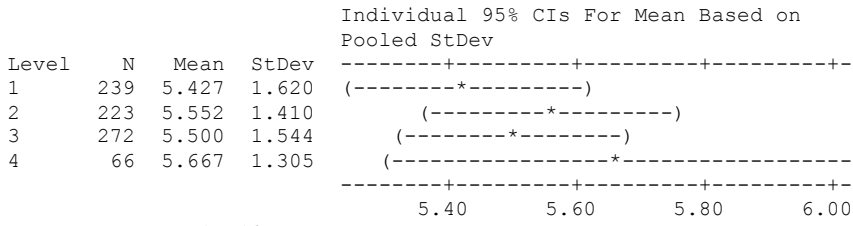


Pooled StDev = 1.817

One-way ANOVA: right.food versus type.school

Source	DF	SS	MS	F	P
type.school	3	3.68	1.23	0.54	0.658
Error	796	1822.29	2.29		
Total	799	1825.97			

S = 1.513 R-Sq = 0.20% R-Sq(adj) = 0.00%

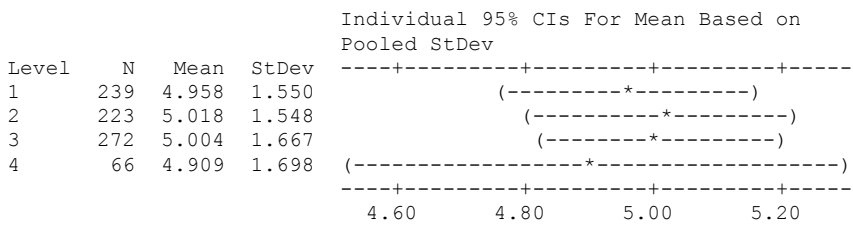


Pooled StDev = 1.513

One-way ANOVA: siblings versus type.school

Source	DF	SS	MS	F	P
type.school	3	0.89	0.30	0.12	0.951
Error	796	2043.96	2.57		
Total	799	2044.85			

S = 1.602 R-Sq = 0.04% R-Sq(adj) = 0.00%

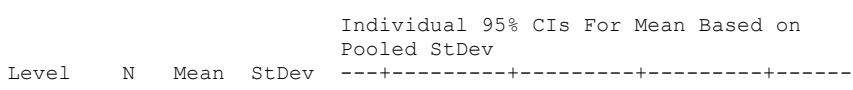


Pooled StDev = 1.602

One-way ANOVA: explore.world versus type.school

Source	DF	SS	MS	F	P
type.school	3	47.22	15.74	4.66	0.003
Error	796	2691.36	3.38		
Total	799	2738.59			

S = 1.839 R-Sq = 1.72% R-Sq(adj) = 1.35%



1	239	4.582	1.879	(-----*-----)
2	223	4.139	1.937	(-----*-----)
3	272	4.324	1.762	(-----*-----)
4	66	4.985	1.650	(-----*-----)

-----+-----+-----+-----+-----+-----
4.00 4.40 4.80 5.20

Pooled StDev = 1.839

One-way ANOVA: not.authoritarian versus type.school

Source	DF	SS	MS	F	P
type.school	3	20.71	6.90	2.47	0.061
Error	796	2227.89	2.80		
Total	799	2248.60			

S = 1.673 R-Sq = 0.92% R-Sq(adj) = 0.55%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	(-----*-----)
1	239	3.431	1.701	(-----*-----)
2	223	3.040	1.620	(-----*-----)
3	272	3.162	1.658	(-----*-----)
4	66	3.394	1.805	(-----*-----)

-----+-----+-----+-----+-----+-----
3.00 3.25 3.50 3.75

Pooled StDev = 1.673

One-way ANOVA: not.overprotected versus type.school

Source	DF	SS	MS	F	P
type.school	3	7.50	2.50	0.91	0.437
Error	796	2191.84	2.75		
Total	799	2199.34			

S = 1.659 R-Sq = 0.34% R-Sq(adj) = 0.00%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	(-----*-----)
1	239	4.527	1.621	(-----*-----)
2	223	4.538	1.646	(-----*-----)
3	272	4.338	1.635	(-----*-----)
4	66	4.591	1.921	(-----*-----)

-----+-----+-----+-----+-----+-----
4.25 4.50 4.75 5.00

Pooled StDev = 1.659

One-way ANOVA: encouragePA versus type.school

Source	DF	SS	MS	F	P
type.school	3	0.83	0.28	0.10	0.960
Error	796	2214.89	2.78		
Total	799	2215.72			

S = 1.668 R-Sq = 0.04% R-Sq(adj) = 0.00%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	(-----*-----)
1	239	4.502	1.722	(-----*-----)
2	223	4.525	1.643	(-----*-----)
3	272	4.504	1.672	(-----*-----)
4	66	4.621	1.527	(-----*-----)

-----+-----+-----+-----+-----+-----
4.25 4.50 4.75 5.00

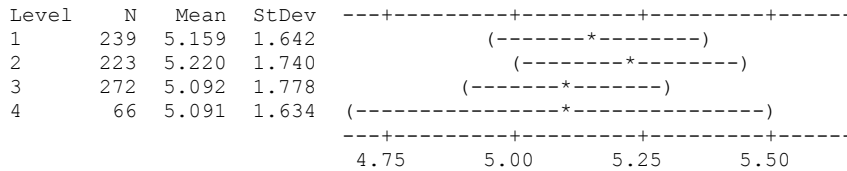
Pooled StDev = 1.668

One-way ANOVA: happy.child versus type.school

Source	DF	SS	MS	F	P
type.school	3	2.25	0.75	0.25	0.858
Error	796	2344.35	2.95		
Total	799	2346.59			

S = 1.716 R-Sq = 0.10% R-Sq(adj) = 0.00%

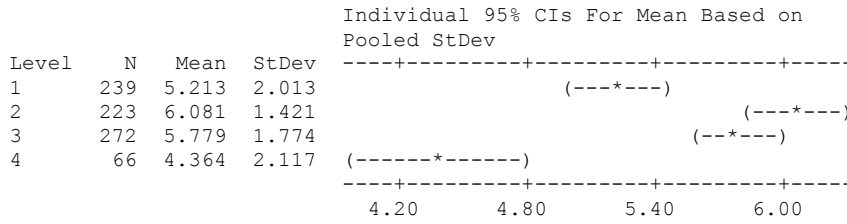
Individual 95% CIs For Mean Based on Pooled StDev



One-way ANOVA: walk.school versus type.school

Source	DF	SS	MS	F	P
type.school	3	196.49	65.50	20.39	0.000
Error	796	2556.70	3.21		
Total	799	2753.19			

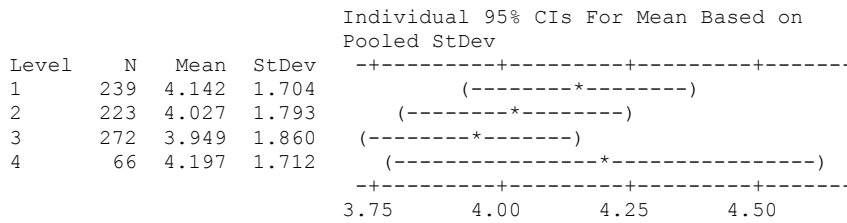
S = 1.792 R-Sq = 7.14% R-Sq(adj) = 6.79%



One-way ANOVA: no.seconds versus type.school

Source	DF	SS	MS	F	P
type.school	3	6.38	2.13	0.67	0.572
Error	796	2532.72	3.18		
Total	799	2539.10			

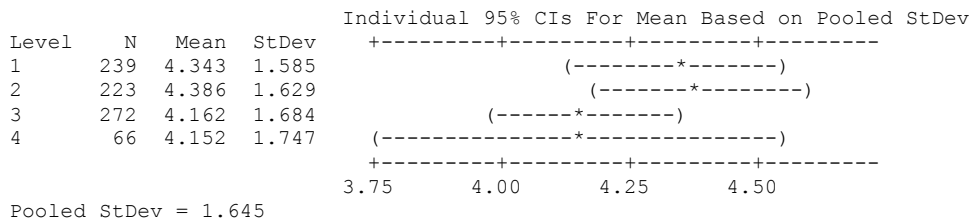
S = 1.784 R-Sq = 0.25% R-Sq(adj) = 0.00%



One-way ANOVA: no.snacking versus type.school

Source	DF	SS	MS	F	P
type.school	3	8.33	2.78	1.03	0.380
Error	796	2154.07	2.71		
Total	799	2162.39			

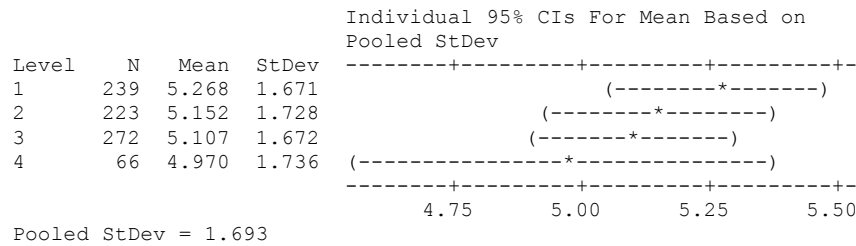
S = 1.645 R-Sq = 0.39% R-Sq(adj) = 0.01%



One-way ANOVA: tidy.room versus type.school

Source	DF	SS	MS	F	P
type.school	3	5.94	1.98	0.69	0.558
Error	796	2281.53	2.87		
Total	799	2287.47			

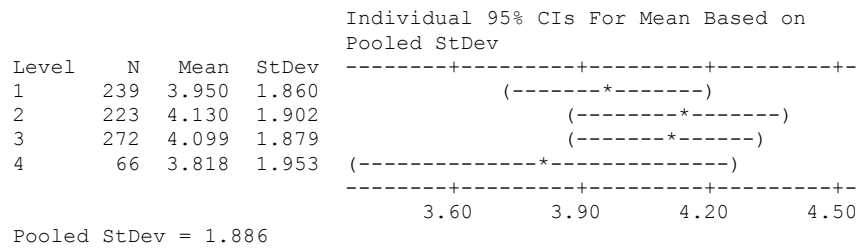
S = 1.693 R-Sq = 0.26% R-Sq(adj) = 0.00%



One-way ANOVA: parents.watched.sport versus type.school

Source	DF	SS	MS	F	P
type.school	3	7.96	2.65	0.75	0.525
Error	796	2830.76	3.56		
Total	799	2838.72			

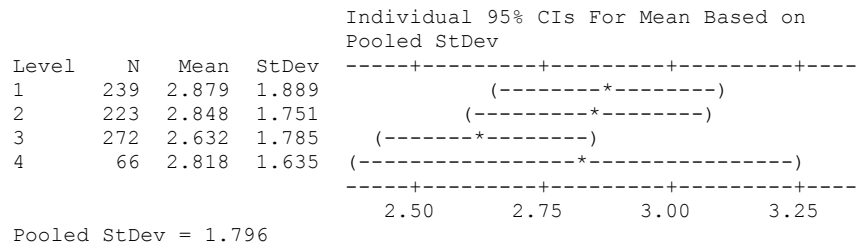
S = 1.886 R-Sq = 0.28% R-Sq(adj) = 0.00%



One-way ANOVA: parents.played versus type.school

Source	DF	SS	MS	F	P
type.school	3	9.37	3.12	0.97	0.407
Error	796	2567.35	3.23		
Total	799	2576.72			

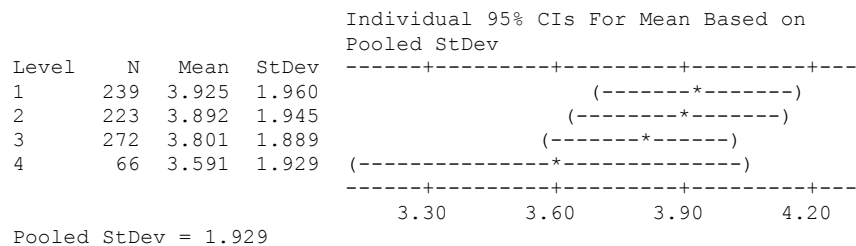
S = 1.796 R-Sq = 0.36% R-Sq(adj) = 0.00%



One-way ANOVA: not.daydreamer versus type.school

Source	DF	SS	MS	F	P
type.school	3	6.79	2.26	0.61	0.610
Error	796	2963.30	3.72		
Total	799	2970.09			

S = 1.929 R-Sq = 0.23% R-Sq(adj) = 0.00%

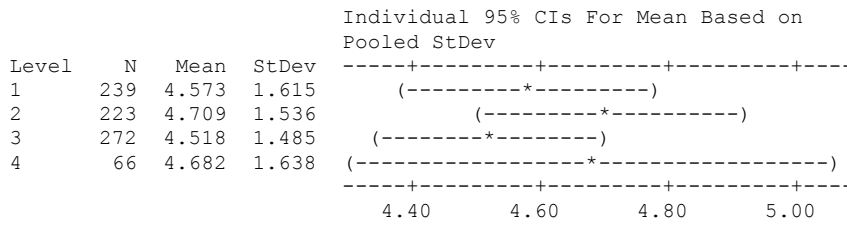


One-way ANOVA: body.belonged versus type.school

Source	DF	SS	MS	F	P
type.school	3	5.05	1.68	0.70	0.553
Error	796	1916.75	2.41		

Total 799 1921.80

S = 1.552 R-Sq = 0.26% R-Sq(adj) = 0.00%

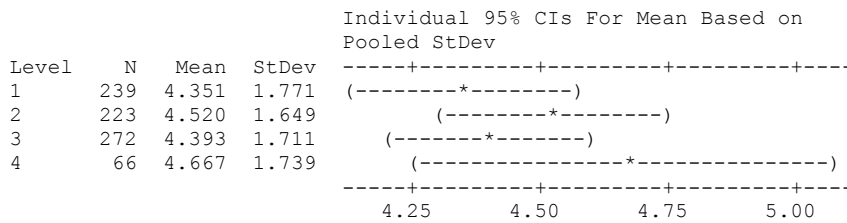


Pooled StDev = 1.552

One-way ANOVA: ignore.pain versus type.school

Source	DF	SS	MS	F	P
type.school	3	7.29	2.43	0.83	0.479
Error	796	2339.71	2.94		
Total	799	2347.00			

S = 1.714 R-Sq = 0.31% R-Sq(adj) = 0.00%

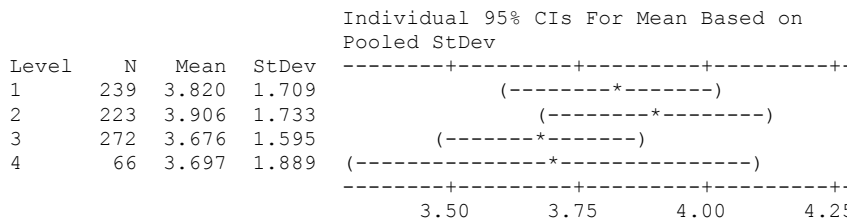


Pooled StDev = 1.714

One-way ANOVA: not.talk.myself versus type.school

Source	DF	SS	MS	F	P
type.school	3	7.27	2.42	0.84	0.470
Error	796	2283.75	2.87		
Total	799	2291.02			

S = 1.694 R-Sq = 0.32% R-Sq(adj) = 0.00%

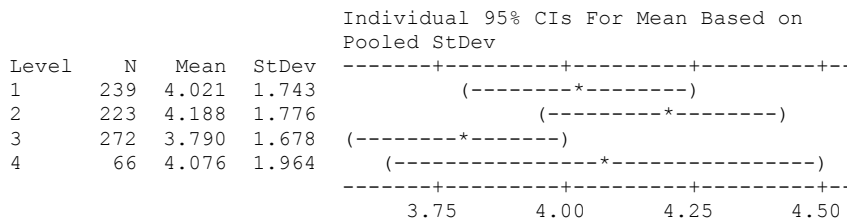


Pooled StDev = 1.694

One-way ANOVA: not.bullied versus type.school

Source	DF	SS	MS	F	P
type.school	3	20.31	6.77	2.21	0.085
Error	796	2436.66	3.06		
Total	799	2456.97			

S = 1.750 R-Sq = 0.83% R-Sq(adj) = 0.45%

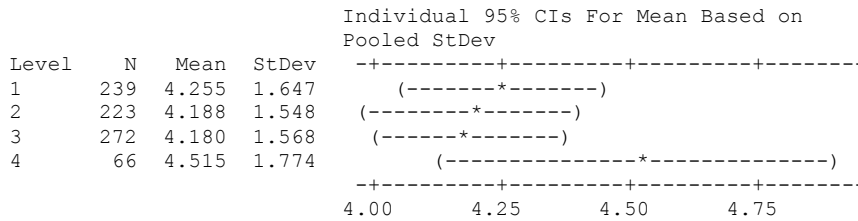


Pooled StDev = 1.750

One-way ANOVA: never.lied versus type.school

Source	DF	SS	MS	F	P
type.school	3	6.58	2.19	0.85	0.466
Error	796	2048.18	2.57		
Total	799	2054.76			

S = 1.604 R-Sq = 0.32% R-Sq(adj) = 0.00%

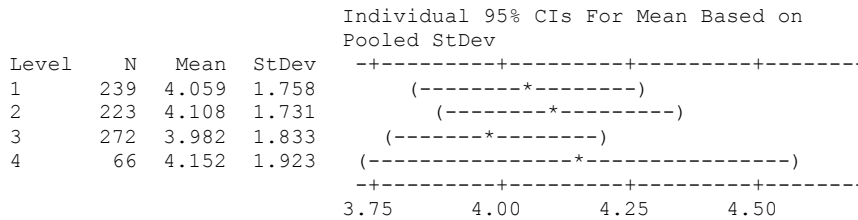


Pooled StDev = 1.604

One-way ANOVA: didPAwherever versus type.school

Source	DF	SS	MS	F	P
type.school	3	2.70	0.90	0.28	0.839
Error	796	2551.99	3.21		
Total	799	2554.69			

S = 1.791 R-Sq = 0.11% R-Sq(adj) = 0.00%

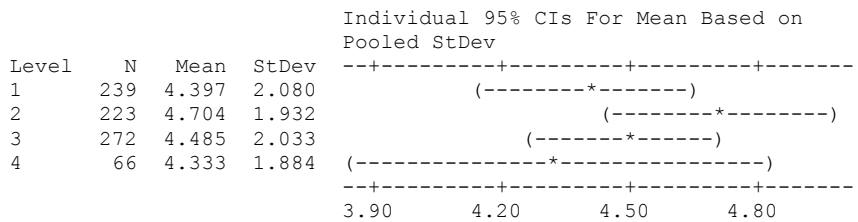


Pooled StDev = 1.791

One-way ANOVA: never.worried versus type.school

Source	DF	SS	MS	F	P
type.school	3	13.64	4.55	1.13	0.337
Error	796	3208.31	4.03		
Total	799	3221.95			

S = 2.008 R-Sq = 0.42% R-Sq(adj) = 0.05%

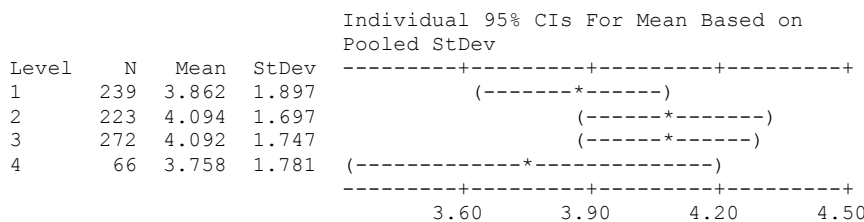


Pooled StDev = 2.008

One-way ANOVA: good.with.failure versus type.school

Source	DF	SS	MS	F	P
type.school	3	12.70	4.23	1.33	0.262
Error	796	2528.29	3.18		
Total	799	2540.99			

S = 1.782 R-Sq = 0.50% R-Sq(adj) = 0.12%

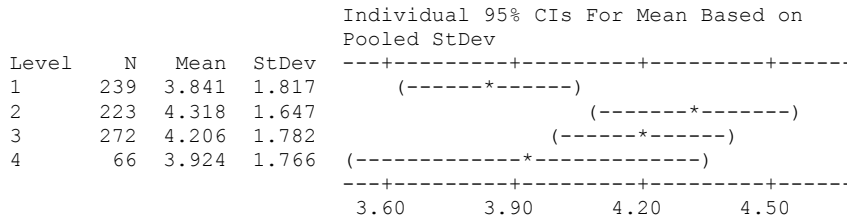


Pooled StDev = 1.782

One-way ANOVA: moreconfidentPA versus type.school

Source	DF	SS	MS	F	P
type.school	3	31.74	10.58	3.43	0.017
Error	796	2451.44	3.08		
Total	799	2483.18			

S = 1.755 R-Sq = 1.28% R-Sq(adj) = 0.91%

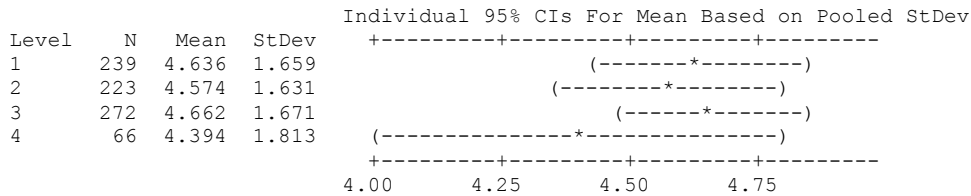


Pooled StDev = 1.755

One-way ANOVA: food.not.comfort versus type.school

Source	DF	SS	MS	F	P
type.school	3	4.26	1.42	0.51	0.676
Error	796	2216.50	2.78		
Total	799	2220.76			

S = 1.669 R-Sq = 0.19% R-Sq(adj) = 0.00%

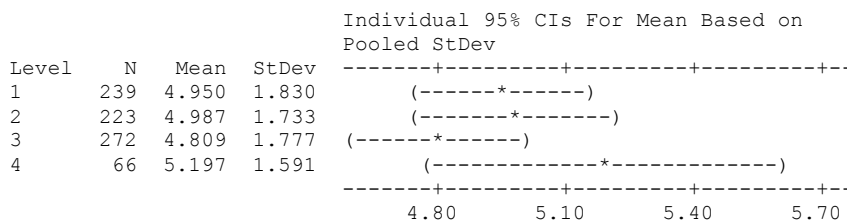


Pooled StDev = 1.669

One-way ANOVA: not.overweight versus type.school

Source	DF	SS	MS	F	P
type.school	3	9.50	3.17	1.01	0.386
Error	796	2484.86	3.12		
Total	799	2494.36			

S = 1.767 R-Sq = 0.38% R-Sq(adj) = 0.01%

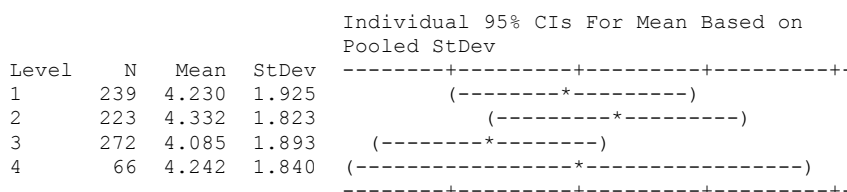


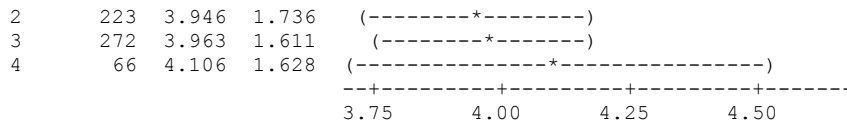
Pooled StDev = 1.767

One-way ANOVA: bodyshape.conscious versus type.school

Source	DF	SS	MS	F	P
type.school	3	7.76	2.59	0.73	0.533
Error	796	2810.96	3.53		
Total	799	2818.72			

S = 1.879 R-Sq = 0.28% R-Sq(adj) = 0.00%

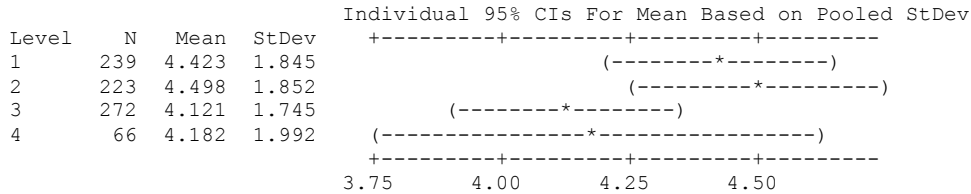




One-way ANOVA: not.clumsy versus type.school

Source	DF	SS	MS	F	P
type.school	3	21.56	7.19	2.15	0.092
Error	796	2654.88	3.34		
Total	799	2676.44			

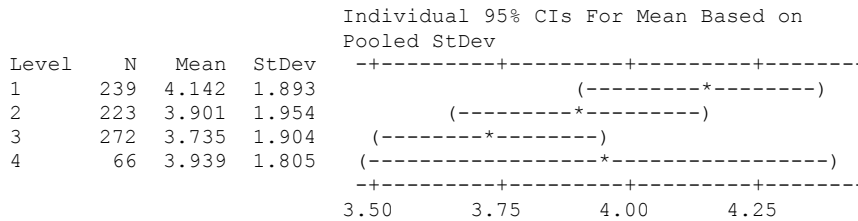
S = 1.826 R-Sq = 0.81% R-Sq(adj) = 0.43%



One-way ANOVA: loved.school versus type.school

Source	DF	SS	MS	F	P
type.school	3	21.19	7.06	1.94	0.121
Error	796	2895.69	3.64		
Total	799	2916.88			

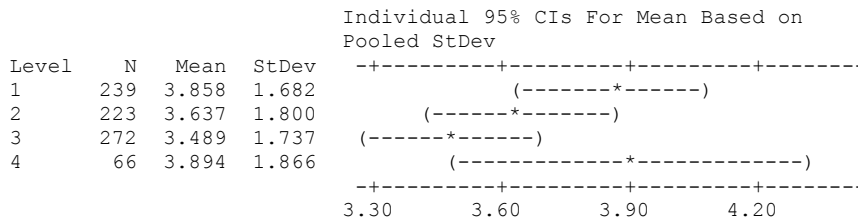
S = 1.907 R-Sq = 0.73% R-Sq(adj) = 0.35%



One-way ANOVA: thrived.competition versus type.school

Source	DF	SS	MS	F	P
type.school	3	20.88	6.96	2.27	0.079
Error	796	2436.97	3.06		
Total	799	2457.85			

S = 1.750 R-Sq = 0.85% R-Sq(adj) = 0.48%

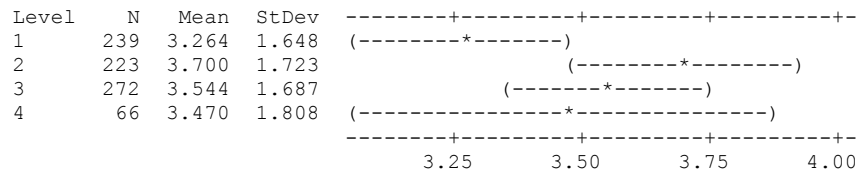


One-way ANOVA: bad.grades versus type.school

Source	DF	SS	MS	F	P
type.school	3	22.82	7.61	2.65	0.048
Error	796	2289.17	2.88		
Total	799	2312.00			

S = 1.696 R-Sq = 0.99% R-Sq(adj) = 0.61%

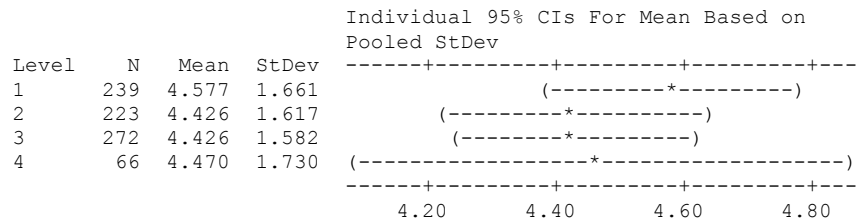
Individual 95% CIs For Mean Based on Pooled StDev



One-way ANOVA: okwith.learning versus type.school

Source	DF	SS	MS	F	P
type.school	3	3.68	1.23	0.46	0.708
Error	796	2109.82	2.65		
Total	799	2113.50			

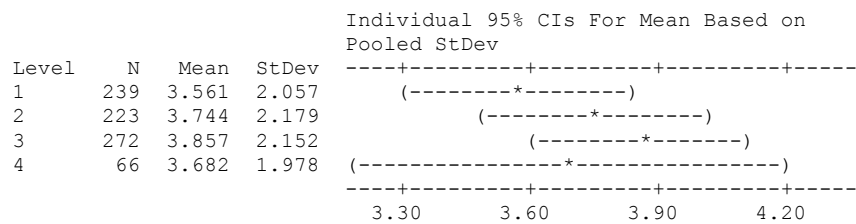
S = 1.628 R-Sq = 0.17% R-Sq(adj) = 0.00%



One-way ANOVA: lovedPE versus type.school

Source	DF	SS	MS	F	P
type.school	3	11.37	3.79	0.84	0.470
Error	796	3571.03	4.49		
Total	799	3582.40			

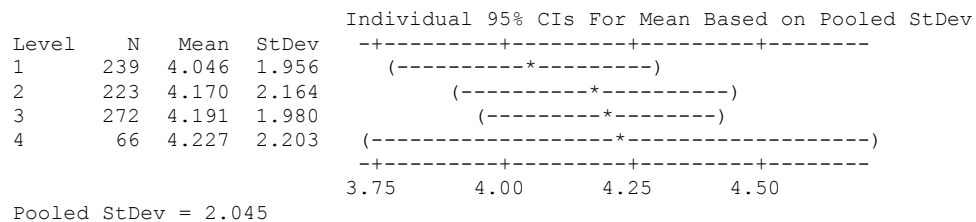
S = 2.118 R-Sq = 0.32% R-Sq(adj) = 0.00%



One-way ANOVA: not.bootcamp versus type.school

Source	DF	SS	MS	F	P
type.school	3	3.51	1.17	0.28	0.840
Error	796	3327.67	4.18		
Total	799	3331.18			

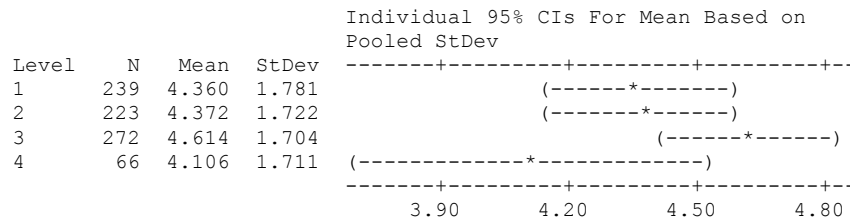
S = 2.045 R-Sq = 0.11% R-Sq(adj) = 0.00%



One-way ANOVA: not.joker versus type.school

Source	DF	SS	MS	F	P
type.school	3	18.05	6.02	2.00	0.112
Error	796	2389.89	3.00		
Total	799	2407.94			

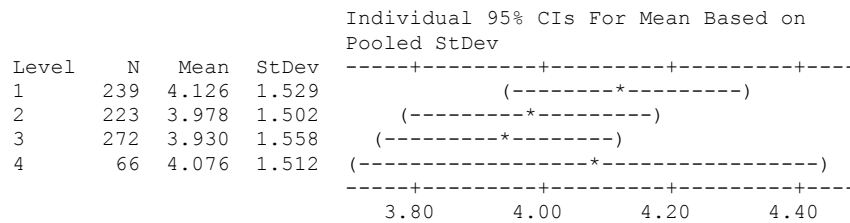
S = 1.733 R-Sq = 0.75% R-Sq(adj) = 0.38%



One-way ANOVA: perfectionist versus type.school

Source	DF	SS	MS	F	P
type.school	3	5.43	1.81	0.77	0.509
Error	796	1863.42	2.34		
Total	799	1868.85			

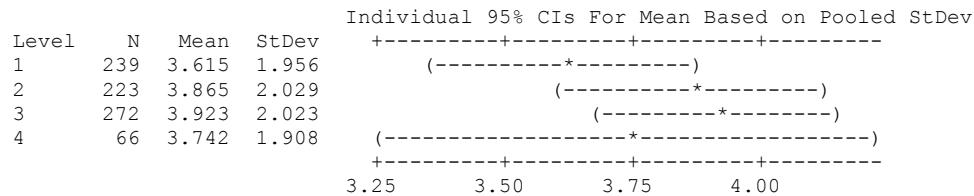
S = 1.530 R-Sq = 0.29% R-Sq(adj) = 0.00%



One-way ANOVA: good.at.PE versus type.school

Source	DF	SS	MS	F	P
type.school	3	13.45	4.48	1.13	0.338
Error	796	3170.55	3.98		
Total	799	3184.00			

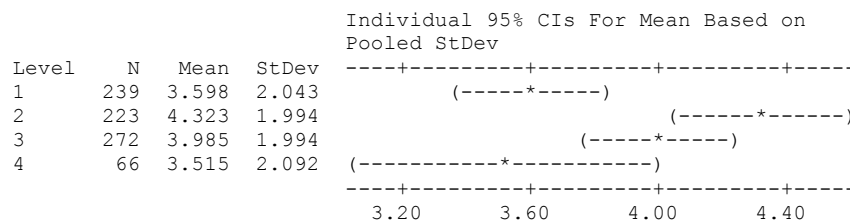
S = 1.996 R-Sq = 0.42% R-Sq(adj) = 0.05%



One-way ANOVA: english.hard versus type.school

Source	DF	SS	MS	F	P
type.school	3	72.88	24.29	5.97	0.001
Error	796	3238.62	4.07		
Total	799	3311.50			

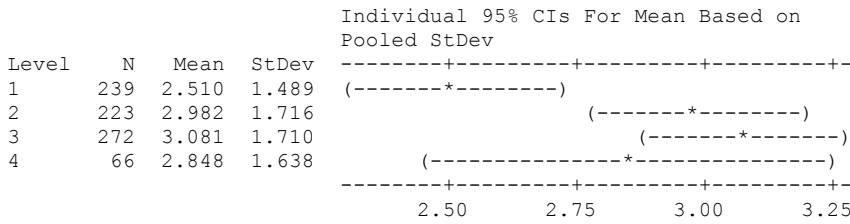
S = 2.017 R-Sq = 2.20% R-Sq(adj) = 1.83%



One-way ANOVA: english.hard versus type.school

Source	DF	SS	MS	F	P
type.school	3	45.79	15.26	5.66	0.001
Error	796	2148.36	2.70		
Total	799	2194.15			

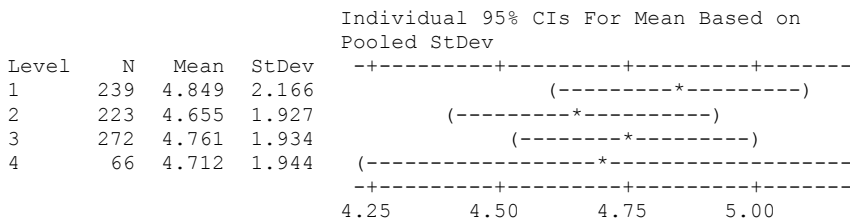
S = 1.643 R-Sq = 2.09% R-Sq(adj) = 1.72%



One-way ANOVA: art.worst versus type.school

Source	DF	SS	MS	F	P
type.school	3	4.50	1.50	0.37	0.772
Error	796	3199.99	4.02		
Total	799	3204.49			

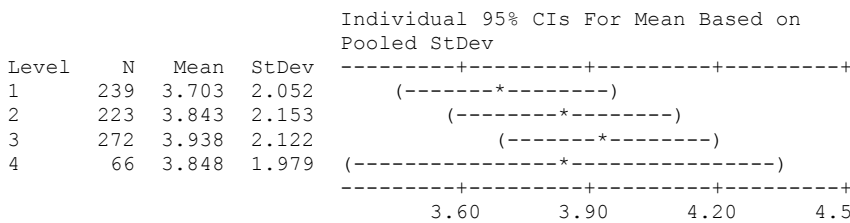
S = 2.005 R-Sq = 0.14% R-Sq(adj) = 0.00%



One-way ANOVA: Pefun versus type.school

Source	DF	SS	MS	F	P
type.school	3	7.05	2.35	0.53	0.659
Error	796	3505.84	4.40		
Total	799	3512.89			

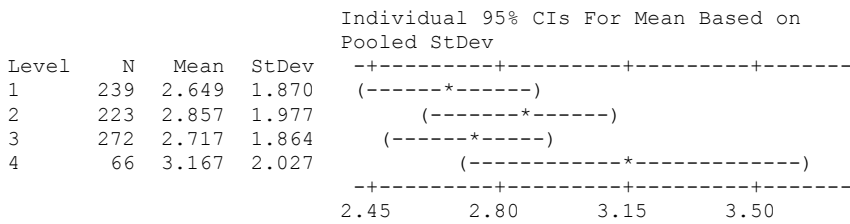
S = 2.099 R-Sq = 0.20% R-Sq(adj) = 0.00%



One-way ANOVA: team.captain versus type.school

Source	DF	SS	MS	F	P
type.school	3	16.34	5.45	1.49	0.216
Error	796	2908.25	3.65		
Total	799	2924.60			

S = 1.911 R-Sq = 0.56% R-Sq(adj) = 0.18%

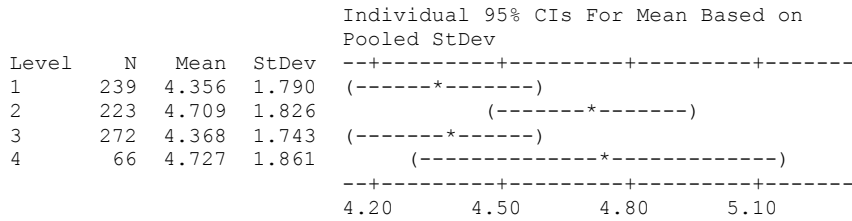


One-way ANOVA: PEteacher.got.on versus type.school

Source	DF	SS	MS	F	P
type.school	3	22.75	7.58	2.37	0.070

Error 796 2551.15 3.20
 Total 799 2573.90

S = 1.790 R-Sq = 0.88% R-Sq(adj) = 0.51%

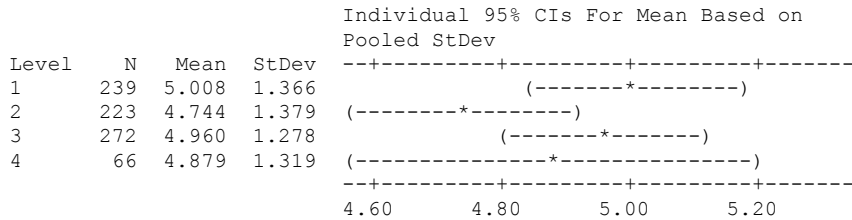


Pooled StDev = 1.790

One-way ANOVA: good.teach.impress versus type.school

Source	DF	SS	MS	F	P
type.school	3	9.16	3.05	1.71	0.164
Error	796	1422.00	1.79		
Total	799	1431.16			

S = 1.337 R-Sq = 0.64% R-Sq(adj) = 0.27%

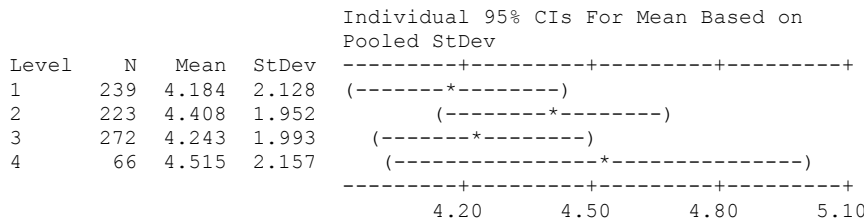


Pooled StDev = 1.337

One-way ANOVA: picked.team versus type.school

Source	DF	SS	MS	F	P
type.school	3	9.73	3.24	0.78	0.504
Error	796	3302.24	4.15		
Total	799	3311.97			

S = 2.037 R-Sq = 0.29% R-Sq(adj) = 0.00%

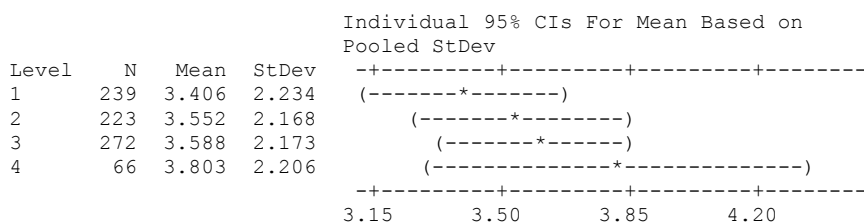


Pooled StDev = 2.037

One-way ANOVA: outsidePE versus type.school

Source	DF	SS	MS	F	P
type.school	3	9.53	3.18	0.66	0.576
Error	796	3827.11	4.81		
Total	799	3836.64			

S = 2.193 R-Sq = 0.25% R-Sq(adj) = 0.00%

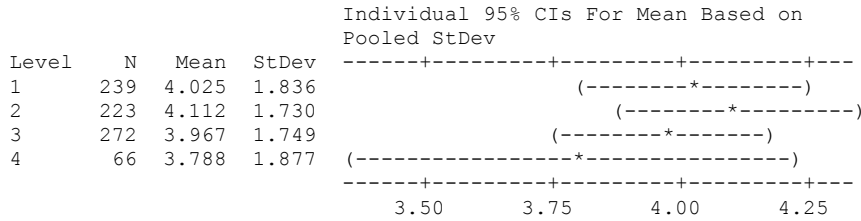


Pooled StDev = 2.193

One-way ANOVA: played.other versus type.school

Source	DF	SS	MS	F	P
type.school	3	6.14	2.05	0.65	0.586
Error	796	2523.78	3.17		
Total	799	2529.92			

S = 1.781 R-Sq = 0.24% R-Sq(adj) = 0.00%

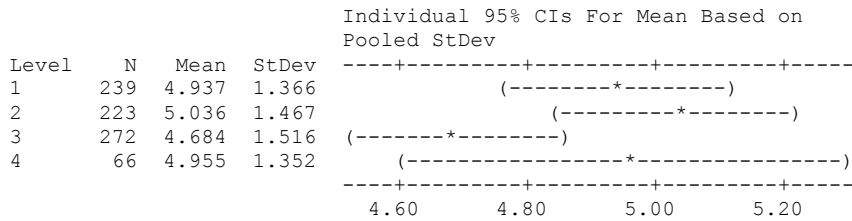


Pooled StDev = 1.781

One-way ANOVA: sociable versus type.school

Source	DF	SS	MS	F	P
type.school	3	17.04	5.68	2.72	0.044
Error	796	1663.44	2.09		
Total	799	1680.48			

S = 1.446 R-Sq = 1.01% R-Sq(adj) = 0.64%

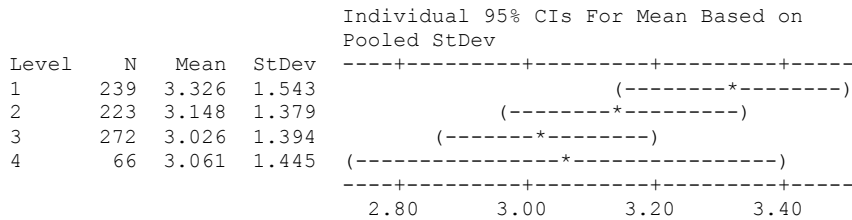


Pooled StDev = 1.446

One-way ANOVA: winner versus type.school

Source	DF	SS	MS	F	P
type.school	3	12.16	4.05	1.95	0.120
Error	796	1651.24	2.07		
Total	799	1663.40			

S = 1.440 R-Sq = 0.73% R-Sq(adj) = 0.36%

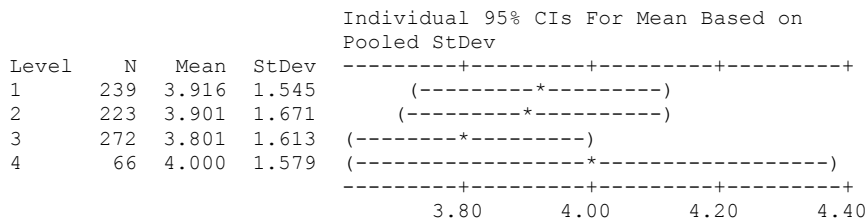


Pooled StDev = 1.440

One-way ANOVA: compete.friends versus type.school

Source	DF	SS	MS	F	P
type.school	3	3.04	1.01	0.39	0.758
Error	796	2055.44	2.58		
Total	799	2058.48			

S = 1.607 R-Sq = 0.15% R-Sq(adj) = 0.00%

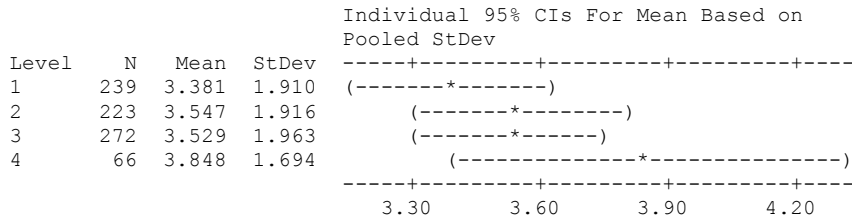


Pooled StDev = 1.607

One-way ANOVA: sport.clubs versus type.school

Source	DF	SS	MS	F	P
type.school	3	11.93	3.98	1.09	0.354
Error	796	2913.86	3.66		
Total	799	2925.79			

S = 1.913 R-Sq = 0.41% R-Sq(adj) = 0.03%

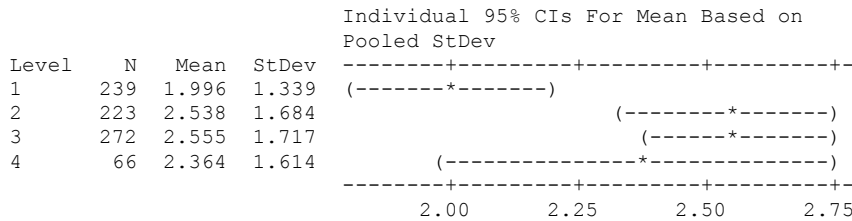


Pooled StDev = 1.913

One-way ANOVA: hated.reading versus type.school

Source	DF	SS	MS	F	P
type.school	3	49.09	16.36	6.43	0.000
Error	796	2024.87	2.54		
Total	799	2073.96			

S = 1.595 R-Sq = 2.37% R-Sq(adj) = 2.00%

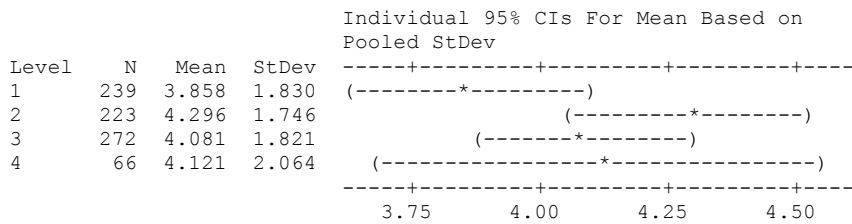


Pooled StDev = 1.595

One-way ANOVA: active.pastimes versus type.school

Source	DF	SS	MS	F	P
type.school	3	22.31	7.44	2.24	0.083
Error	796	2648.88	3.33		
Total	799	2671.20			

S = 1.824 R-Sq = 0.84% R-Sq(adj) = 0.46%

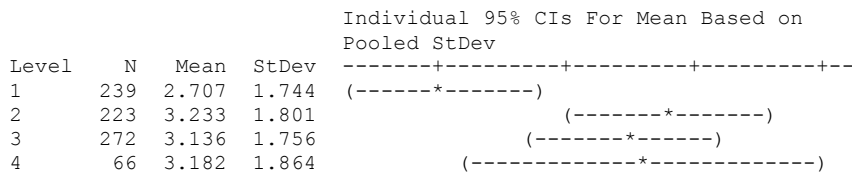


Pooled StDev = 1.824

One-way ANOVA: no.library versus type.school

Source	DF	SS	MS	F	P
type.school	3	38.64	12.88	4.09	0.007
Error	796	2505.16	3.15		
Total	799	2543.80			

S = 1.774 R-Sq = 1.52% R-Sq(adj) = 1.15%

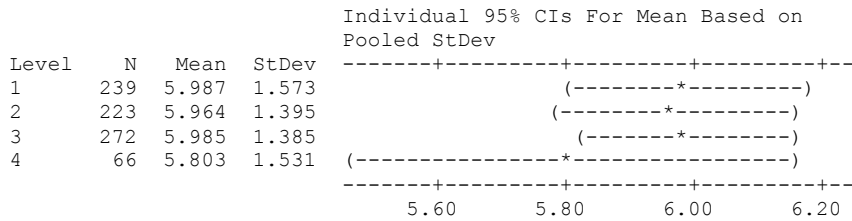


Pooled StDev = 1.774

One-way ANOVA: never.diETING versus type.school

Source	DF	SS	MS	F	P
type.school	3	1.96	0.65	0.31	0.820
Error	796	1693.06	2.13		
Total	799	1695.02			

S = 1.458 R-Sq = 0.12% R-Sq(adj) = 0.00%

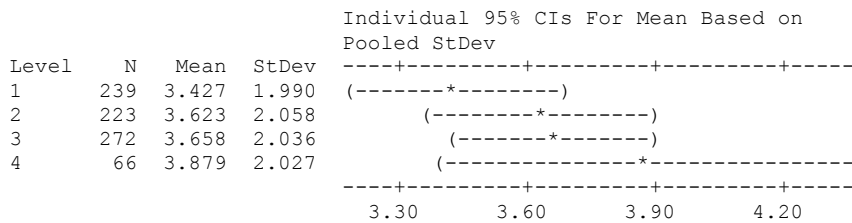


Pooled StDev = 1.458

One-way ANOVA: active.not.club versus type.school

Source	DF	SS	MS	F	P
type.school	3	13.34	4.45	1.08	0.356
Error	796	3273.06	4.11		
Total	799	3286.39			

S = 2.028 R-Sq = 0.41% R-Sq(adj) = 0.03%



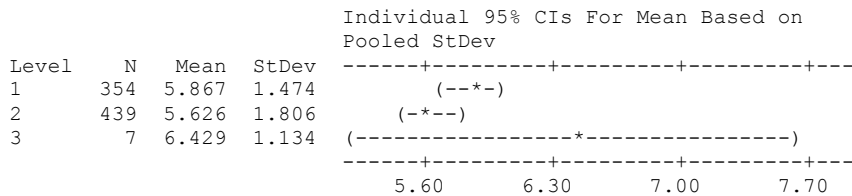
Pooled StDev = 2.028

ANOVA home v. m/f

One-way ANOVA: mum.dadIovedme versus gender

Source	DF	SS	MS	F	P
gender	2	14.71	7.36	2.66	0.070
Error	797	2203.21	2.76		
Total	799	2217.92			

S = 1.663 R-Sq = 0.66% R-Sq(adj) = 0.41%



Pooled StDev = 1.663

One-way ANOVA: compliment versus gender

Source	DF	SS	MS	F	P
gender	2	48.85	24.43	7.53	0.001
Error	797	2584.74	3.24		
Total	799	2633.60			

S = 1.801 R-Sq = 1.86% R-Sq(adj) = 1.61%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	CI Lower	CI Upper
1	354	5.398	1.532	4.90	5.89
2	439	4.918	1.993	4.90	5.93
3	7	5.857	1.676	4.90	6.81

Pooled StDev = 1.801

One-way ANOVA: support versus gender

Source	DF	SS	MS	F	P
gender	2	27.30	13.65	4.45	0.012
Error	797	2444.09	3.07		
Total	799	2471.39			

S = 1.751 R-Sq = 1.10% R-Sq(adj) = 0.86%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	CI Lower	CI Upper
1	354	5.588	1.541	4.90	6.27
2	439	5.232	1.903	4.90	5.57
3	7	6.000	1.826	4.90	7.10

Pooled StDev = 1.751

One-way ANOVA: nofinancial.struggle versus gender

Source	DF	SS	MS	F	P
gender	2	8.54	4.27	1.27	0.282
Error	797	2686.34	3.37		
Total	799	2694.88			

S = 1.836 R-Sq = 0.32% R-Sq(adj) = 0.07%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	CI Lower	CI Upper
1	354	3.325	1.800	3.50	3.15
2	439	3.376	1.872	3.50	3.25
3	7	4.429	1.134	3.50	5.35

Pooled StDev = 1.83

One-way ANOVA: right.food versus gender

Source	DF	SS	MS	F	P
gender	2	4.72	2.36	1.03	0.356
Error	797	1821.24	2.29		
Total	799	1825.97			

S = 1.512 R-Sq = 0.26% R-Sq(adj) = 0.01%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev	CI Lower	CI Upper
1	354	5.525	1.432	5.40	5.65
2	439	5.478	1.577	5.40	5.55
3	7	6.286	1.113	5.40	7.08

Pooled StDev = 1.512

One-way ANOVA: siblings versus gender

Source	DF	SS	MS	F	P
gender	2	12.28	6.14	2.41	0.091
Error	797	2032.57	2.55		
Total	799	2044.85			

S = 1.597 R-Sq = 0.60% R-Sq(adj) = 0.35%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	354	5.121	1.566
2	439	4.884	1.615
3	7	4.571	1.988

Pooled StDev = 1.597

One-way ANOVA: explore.world versus gender

Source	DF	SS	MS	F	P
gender	2	50.28	25.14	7.45	0.001
Error	797	2688.31	3.37		
Total	799	2738.59			

S = 1.837 R-Sq = 1.84% R-Sq(adj) = 1.59%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	354	4.667	1.714
2	439	4.180	1.930
3	7	5.143	1.864

Pooled StDev = 1.837

One-way ANOVA: not.authoritarian versus gender

Source	DF	SS	MS	F	P
gender	2	49.27	24.64	8.93	0.000
Error	797	2199.32	2.76		
Total	799	2248.59			

S = 1.661 R-Sq = 2.19% R-Sq(adj) = 1.95%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	354	3.492	1.677
2	439	3.005	1.646
3	7	3.857	1.864

Pooled StDev = 1.661

One-way ANOVA: not.overprotected versus gender

Source	DF	SS	MS	F	P
gender	2	2.49	1.25	0.45	0.636
Error	797	2196.85	2.76		
Total	799	2199.34			

S = 1.660 R-Sq = 0.11% R-Sq(adj) = 0.00%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	354	4.534	1.579
2	439	4.421	1.723
3	7	4.429	1.618

Pooled StDev = 1.660

One-way ANOVA: encouragePA versus gender

Source	DF	SS	MS	F	P
gender	2	38.75	19.38	7.09	0.001
Error	797	2176.97	2.73		
Total	799	2215.72			

S = 1.653 R-Sq = 1.75% R-Sq(adj) = 1.50%

Individual 95% CIs For Mean Based on Pooled StDev

Level	N	Mean	StDev
1	354	4.534	1.579
2	439	4.421	1.723
3	7	4.429	1.618

Appendix 14. Study 2 - Post hoc Dukey test results

support versus C93 Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.929	A
2	587	5.3509	B
3	82	5.049	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.578	0.205	(-1.058, -0.097)	-2.81	0.014
3 - 1	-0.880	0.273	(-1.520, -0.240)	-3.22	0.004
3 - 2	-0.302	0.208	(-0.788, 0.184)	-1.46	0.313

Individual confidence level = 98.05%

no.seconds versus C93 Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
3	82	4.415	A
2	587	4.0852	A
1	84	3.500	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.585	0.206	(0.104, 1.066)	2.85	0.012
3 - 1	0.915	0.274	(0.274, 1.555)	3.34	0.002
3 - 2	0.329	0.208	(-0.157, 0.816)	1.59	0.252

Individual confidence level = 98.05%

mum.dadlovedme versus C93 Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	6.298	A
2	587	5.6695	B
3	82	5.524	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.628	0.194	(-1.081, -0.175)	-3.25	0.003
3 - 1	-0.773	0.258	(-1.376, -0.170)	-3.00	0.008
3 - 2	-0.145	0.196	(-0.603, 0.313)	-0.74	0.738

Individual confidence level = 98.05%

compliment versus C93 Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
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1	84	5.655	A
2	587	5.1107	B
3	82	4.683	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.544	0.211	(-1.037, -0.051)	-2.58	0.027
3 - 1	-0.972	0.280	(-1.628, -0.315)	-3.46	0.002
3 - 2	-0.428	0.213	(-0.926, 0.071)	-2.01	0.110

Individual confidence level = 98.05%

**parents.played versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	3.155	A
2	587	2.8024	A
3	82	2.171	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.352	0.207	(-0.837, 0.132)	-1.70	0.205
3 - 1	-0.984	0.276	(-1.629, -0.339)	-3.57	0.001
3 - 2	-0.632	0.209	(-1.122, -0.142)	-3.02	0.007

Individual confidence level = 98.05%

**parents.played versus C9
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	3.155	A
2	587	2.8024	A
3	82	2.171	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.352	0.207	(-0.837, 0.132)	-1.70	0.205
3 - 1	-0.984	0.276	(-1.629, -0.339)	-3.57	0.001
3 - 2	-0.632	0.209	(-1.122, -0.142)	-3.02	0.007

Individual confidence level = 98.05%

**workhard.ok versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.083	A
2	587	4.5877	B
3	82	4.329	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.496	0.191	(-0.943, -0.048)	-2.59	0.026

3 - 1	-0.754	0.255	(-1.350, -0.158)	-2.96	0.009
3 - 2	-0.258	0.193	(-0.711, 0.194)	-1.34	0.375

Individual confidence level = 98.05%

**goodwithfailure versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.595	A
2	587	3.9353	B
3	82	3.805	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.660	0.207	(-1.145, -0.175)	-3.19	0.004
3 - 1	-0.790	0.276	(-1.436, -0.145)	-2.87	0.012
3 - 2	-0.130	0.209	(-0.620, 0.360)	-0.62	0.808

Individual confidence level = 98.05%

**good.teach.impress versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.250	A
2	587	4.9233	A
3	82	4.524	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.327	0.156	(-0.693, 0.039)	-2.09	0.092
3 - 1	-0.726	0.208	(-1.213, -0.239)	-3.49	0.001
3 - 2	-0.399	0.158	(-0.769, -0.029)	-2.52	0.031

Individual confidence level = 98.05%

**competitive versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.345	A
2	587	3.9796	A
3	82	3.439	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.366	0.194	(-0.819, 0.088)	-1.89	0.142
3 - 1	-0.906	0.258	(-1.509, -0.303)	-3.52	0.001
3 - 2	-0.541	0.196	(-0.999, -0.082)	-2.76	0.016

Individual confidence level = 98.05%

**perfectionist versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.167	A
2	587	4.0716	A
3	82	3.439	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.095	0.178	(-0.512, 0.322)	-0.53	0.855
3 - 1	-0.728	0.237	(-1.283, -0.172)	-3.07	0.006
3 - 2	-0.633	0.180	(-1.054, -0.211)	-3.51	0.001

Individual confidence level = 98.05%

**not.daydreamer versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.702	A
2	587	3.7513	B
3	82	3.646	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.951	0.222	(-1.472, -0.431)	-4.28	0.000
3 - 1	-1.056	0.296	(-1.749, -0.363)	-3.57	0.001
3 - 2	-0.105	0.225	(-0.631, 0.421)	-0.47	0.887

Individual confidence level = 98.05%

**maths.hard versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
3	82	4.707	A
2	587	3.8705	B
1	84	3.690	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.180	0.236	(-0.373, 0.733)	0.76	0.726
3 - 1	1.017	0.314	(0.281, 1.752)	3.24	0.003
3 - 2	0.837	0.239	(0.278, 1.395)	3.51	0.001

Individual confidence level = 98.05%

**bad.grades versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
3	82	4.012	A
2	587	3.4651	B
1	84	3.238	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
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of Levels	of Means	Difference	95% CI	T-Value	P-Value
2 - 1	0.227	0.199	(-0.238, 0.692)	1.14	0.488
3 - 1	0.774	0.264	(0.155, 1.393)	2.93	0.010
3 - 2	0.547	0.201	(0.077, 1.017)	2.73	0.018

Individual confidence level = 98.05%

hated.reading versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	2.631	A
2	587	2.3646	A B
3	82	1.939	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.266	0.186	(-0.702, 0.169)	-1.43	0.325
3 - 1	-0.692	0.248	(-1.272, -0.112)	-2.79	0.014
3 - 2	-0.426	0.188	(-0.866, 0.015)	-2.26	0.061

Individual confidence level = 98.05%

didPAwherever versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.440	A
2	587	4.0750	A
3	82	3.488	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.366	0.205	(-0.845, 0.114)	-1.79	0.174
3 - 1	-0.953	0.272	(-1.590, -0.315)	-3.50	0.001
3 - 2	-0.587	0.207	(-1.071, -0.103)	-2.84	0.013

Individual confidence level = 98.05%

played.others versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.702	A
2	587	3.9489	B
3	82	3.476	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.753	0.204	(-1.232, -0.275)	-3.68	0.001
3 - 1	-1.227	0.272	(-1.864, -0.590)	-4.51	0.000
3 - 2	-0.473	0.207	(-0.957, 0.010)	-2.29	0.057

Individual confidence level = 98.05%

happy.child versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.952	A
2	587	5.0698	B
3	82	4.695	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.883	0.198	(-1.345, -0.420)	-4.47	0.000
3 - 1	-1.257	0.263	(-1.873, -0.642)	-4.78	0.000
3 - 2	-0.375	0.200	(-0.842, 0.093)	-1.88	0.145

Individual confidence level = 98.05%

sociable versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.548	A
2	587	4.8245	B
3	82	4.390	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.723	0.167	(-1.114, -0.332)	-4.33	0.000
3 - 1	-1.157	0.222	(-1.678, -0.637)	-5.20	0.000
3 - 2	-0.434	0.169	(-0.830, -0.039)	-2.57	0.027

Individual confidence level = 98.05%

never.lied versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
3	82	4.951	A
2	587	4.2743	B
1	84	3.512	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.762	0.183	(0.334, 1.190)	4.17	0.000
3 - 1	1.439	0.243	(0.870, 2.009)	5.91	0.000
3 - 2	0.677	0.185	(0.244, 1.110)	3.66	0.001

Individual confidence level = 98.05%

bodyshape.unconscious versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.286	A
2	587	4.1210	B
3	82	3.732	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.165	0.215	(-1.668, -0.661)	-5.41	0.000
3 - 1	-1.554	0.286	(-2.224, -0.884)	-5.43	0.000
3 - 2	-0.389	0.217	(-0.898, 0.120)	-1.79	0.173

Individual confidence level = 98.05%

loved.school versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.750	A
2	587	3.9097	B
3	82	2.988	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.840	0.217	(-1.349, -0.331)	-3.86	0.000
3 - 1	-1.762	0.289	(-2.440, -1.085)	-6.09	0.000
3 - 2	-0.922	0.220	(-1.436, -0.407)	-4.19	0.000

Individual confidence level = 98.05%

moreconfidentPA versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.286	A
2	587	4.0221	B
3	82	3.951	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.264	0.201	(-1.733, -0.794)	-6.30	0.000
3 - 1	-1.334	0.267	(-1.959, -0.710)	-5.00	0.000
3 - 2	-0.071	0.203	(-0.545, 0.403)	-0.35	0.935

Individual confidence level = 98.05%

not.lazy versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.893	A
2	587	4.8126	B
3	82	4.122	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
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2 - 1	-1.080	0.194	(-1.535, -0.626)	-5.57	0.000
3 - 1	-1.771	0.258	(-2.375, -1.166)	-6.86	0.000
3 - 2	-0.691	0.196	(-1.150, -0.232)	-3.52	0.001

Individual confidence level = 98.05%

**winner versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.000	A
2	587	3.1516	B
3	82	2.280	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.848	0.162	(-1.227, -0.470)	-5.24	0.000
3 - 1	-1.720	0.215	(-2.224, -1.215)	-7.98	0.000
3 - 2	-0.871	0.164	(-1.254, -0.488)	-5.33	0.000

Individual confidence level = 98.05%

**thrived.competition versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.893	A
2	587	3.6576	B
3	82	2.439	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.235	0.194	(-1.689, -0.782)	-6.38	0.000
3 - 1	-2.454	0.258	(-3.057, -1.850)	-9.52	0.000
3 - 2	-1.219	0.196	(-1.677, -0.760)	-6.22	0.000

Individual confidence level = 98.05%

**not.bootcamp versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.762	A
2	587	4.1175	B
3	82	2.939	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.644	0.224	(-2.169, -1.120)	-7.33	0.000
3 - 1	-2.823	0.298	(-3.521, -2.124)	-9.46	0.000
3 - 2	-1.179	0.227	(-1.709, -0.648)	-5.20	0.000

Individual confidence level = 98.05%

picked.team versus C93

Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	6.083	A
2	587	4.2266	B
3	82	3.146	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.857	0.222	(-2.377, -1.336)	-8.35	0.000
3 - 1	-2.937	0.296	(-3.630, -2.244)	-9.92	0.000
3 - 2	-1.080	0.225	(-1.606, -0.554)	-4.81	0.000

Individual confidence level = 98.05%

PEteacher.got.on versus C93 Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	6.155	A
2	587	4.4123	B
3	82	3.451	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.742	0.196	(-2.200, -1.285)	-8.91	0.000
3 - 1	-2.704	0.260	(-3.313, -2.094)	-10.38	0.000
3 - 2	-0.961	0.198	(-1.424, -0.498)	-4.86	0.000

Individual confidence level = 98.05%

team.captain versus C93 Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.714	A
2	587	2.6780	B
3	82	1.500	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-2.036	0.204	(-2.514, -1.559)	-9.98	0.000
3 - 1	-3.214	0.272	(-3.850, -2.579)	-11.83	0.000
3 - 2	-1.178	0.206	(-1.661, -0.695)	-5.71	0.000

Individual confidence level = 98.05%

outsidePE versus C93 Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.964	A
2	587	3.4668	B
3	82	1.707	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-2.498	0.227	(-3.029, -1.966)	-10.99	0.000
3 - 1	-4.257	0.302	(-4.965, -3.549)	-14.08	0.000
3 - 2	-1.759	0.230	(-2.297, -1.222)	-7.66	0.000

Individual confidence level = 98.05%

lovedPE versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	6.167	A
2	587	3.6661	B
3	82	1.756	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-2.501	0.214	(-3.002, -1.999)	-11.68	0.000
3 - 1	-4.411	0.285	(-5.078, -3.744)	-15.48	0.000
3 - 2	-1.910	0.216	(-2.417, -1.403)	-8.83	0.000

Individual confidence level = 98.05%

Pefun versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	6.202	A
2	587	3.7973	B
3	82	1.768	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-2.405	0.212	(-2.901, -1.910)	-11.36	0.000
3 - 1	-4.434	0.282	(-5.094, -3.775)	-15.74	0.000
3 - 2	-2.029	0.214	(-2.530, -1.528)	-9.48	0.000

Individual confidence level = 98.05%

good.at.PE versus C9
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	6.167	A
2	587	3.7649	B
3	82	1.805	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-2.402	0.198	(-2.864, -1.939)	-12.15	0.000
3 - 1	-4.362	0.263	(-4.978, -3.746)	-16.58	0.000
3 - 2	-1.960	0.200	(-2.428, -1.492)	-9.81	0.000

Individual confidence level = 98.05%

**active.pastimes versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.333	A
2	587	4.0256	B
3	82	3.232	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.308	0.206	(-1.789, -0.826)	-6.36	0.000
3 - 1	-2.102	0.274	(-2.743, -1.461)	-7.67	0.000
3 - 2	-0.794	0.208	(-1.281, -0.307)	-3.82	0.000

Individual confidence level = 98.05%

**encouragePA versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.738	A
2	587	4.4821	B
3	82	3.512	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.256	0.185	(-1.689, -0.823)	-6.78	0.000
3 - 1	-2.226	0.246	(-2.803, -1.649)	-9.03	0.000
3 - 2	-0.970	0.187	(-1.408, -0.532)	-5.18	0.000

Individual confidence level = 98.05%

**sport.clubs versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.893	A
2	587	3.4702	B
3	82	2.268	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.423	0.212	(-1.918, -0.927)	-6.72	0.000
3 - 1	-2.625	0.282	(-3.284, -1.965)	-9.32	0.000
3 - 2	-1.202	0.214	(-1.702, -0.701)	-5.62	0.000

Individual confidence level = 98.05%

**compete.friends versus C93
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	4.917	A

2	587	3.8978	B
3	82	2.622	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.019	0.178	(-1.436, -0.602)	-5.72	0.000
3 - 1	-2.295	0.237	(-2.849, -1.740)	-9.68	0.000
3 - 2	-1.276	0.180	(-1.697, -0.855)	-7.09	0.000

Individual confidence level = 98.05%

ignore.pain versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.631	A
2	587	4.5094	B
3	82	2.817	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-1.122	0.186	(-1.558, -0.686)	-6.02	0.000
3 - 1	-2.814	0.248	(-3.394, -2.234)	-11.35	0.000
3 - 2	-1.692	0.188	(-2.133, -1.252)	-8.99	0.000

Individual confidence level = 98.05%

active.not.club versus C93
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

C93	N	Mean	Grouping
1	84	5.607	A
2	587	3.5520	B
3	82	1.976	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-2.055	0.214	(-2.556, -1.555)	-9.61	0.000
3 - 1	-3.632	0.285	(-4.297, -2.966)	-12.76	0.000
3 - 2	-1.576	0.216	(-2.082, -1.071)	-7.30	0.000

Individual confidence level = 98.05%

nofinancial.struggle versus type.school
Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
4	65	4.185	A
1	221	3.448	B
3	259	3.378	B
2	208	3.038	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	Adjusted P-Value
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of Levels	of Means	Difference	95% CI	T-Value	P-Value
2 - 1	-0.410	0.177	(-0.864, 0.045)	-2.31	0.095
3 - 1	-0.070	0.168	(-0.501, 0.361)	-0.41	0.976
4 - 1	0.737	0.259	(0.072, 1.401)	2.85	0.023
3 - 2	0.340	0.171	(-0.098, 0.778)	1.99	0.191
4 - 2	1.146	0.261	(0.477, 1.815)	4.40	0.000
4 - 3	0.806	0.254	(0.153, 1.459)	3.17	0.008

Individual confidence level = 98.95%

explore.world versus type.school Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
4	65	4.985	A
1	221	4.543	A B
3	259	4.332	A B
2	208	4.154	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.389	0.177	(-0.844, 0.066)	-2.20	0.125
3 - 1	-0.211	0.168	(-0.642, 0.220)	-1.26	0.592
4 - 1	0.442	0.259	(-0.223, 1.106)	1.71	0.321
3 - 2	0.178	0.171	(-0.260, 0.617)	1.04	0.724
4 - 2	0.831	0.261	(0.161, 1.500)	3.19	0.008
4 - 3	0.653	0.255	(-0.001, 1.306)	2.56	0.051

Individual confidence level = 98.95%

walk.school versus type.school Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
2	208	6.0625	A
3	259	5.795	A
1	221	5.167	B
4	65	4.400	C

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.895	0.174	(0.449, 1.341)	5.15	0.000
3 - 1	0.628	0.165	(0.205, 1.051)	3.81	0.001
4 - 1	-0.767	0.254	(-1.419, -0.116)	-3.03	0.013
3 - 2	-0.267	0.167	(-0.697, 0.163)	-1.60	0.381
4 - 2	-1.662	0.255	(-2.318, -1.007)	-6.51	0.000
4 - 3	-1.395	0.249	(-2.036, -0.755)	-5.59	0.000

Individual confidence level = 98.95%

moreconfidentPA versus type.school Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
2	208	4.317	A
3	259	4.251	A
1	221	3.955	A
4	65	3.938	A

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.363	0.170	(-0.074, 0.799)	2.13	0.142
3 - 1	0.296	0.161	(-0.117, 0.710)	1.84	0.255
4 - 1	-0.016	0.248	(-0.653, 0.621)	-0.07	1.000
3 - 2	-0.066	0.164	(-0.487, 0.354)	-0.41	0.978
4 - 2	-0.379	0.250	(-1.020, 0.263)	-1.52	0.428
4 - 3	-0.313	0.244	(-0.939, 0.314)	-1.28	0.575

Individual confidence level = 98.95%

workhard.ok versus type.school Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
1	221	4.833	A
2	208	4.611	A
4	65	4.554	A
3	259	4.448	A

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.222	0.159	(-0.630, 0.186)	-1.40	0.501
3 - 1	-0.385	0.151	(-0.771, 0.002)	-2.56	0.052
4 - 1	-0.279	0.232	(-0.874, 0.317)	-1.20	0.626
3 - 2	-0.163	0.153	(-0.556, 0.230)	-1.06	0.712
4 - 2	-0.057	0.234	(-0.656, 0.543)	-0.24	0.995
4 - 3	0.106	0.228	(-0.479, 0.691)	0.46	0.967

Individual confidence level = 98.95%

maths.hard versus type.school Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
2	208	4.337	A
3	259	3.946	A B
1	221	3.683	B
4	65	3.538	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.653	0.196	(0.151, 1.155)	3.34	0.005
3 - 1	0.263	0.185	(-0.213, 0.739)	1.42	0.489
4 - 1	-0.145	0.286	(-0.878, 0.589)	-0.51	0.958
3 - 2	-0.391	0.189	(-0.875, 0.093)	-2.07	0.162
4 - 2	-0.798	0.288	(-1.537, -0.059)	-2.77	0.028
4 - 3	-0.407	0.281	(-1.129, 0.314)	-1.45	0.468

Individual confidence level = 98.95%

english.hard versus type.school Tukey Pairwise Comparisons

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
3	259	3.042	A
2	208	2.942	A
4	65	2.862	A B
1	221	2.4977	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.445	0.158	(0.039, 0.850)	2.81	0.025
3 - 1	0.545	0.150	(0.160, 0.929)	3.63	0.002
4 - 1	0.364	0.231	(-0.229, 0.957)	1.58	0.393
3 - 2	0.100	0.152	(-0.291, 0.491)	0.66	0.913
4 - 2	-0.081	0.233	(-0.678, 0.516)	-0.35	0.986
4 - 3	-0.181	0.227	(-0.764, 0.402)	-0.80	0.856

Individual confidence level = 98.95%

**hated.reading versus type.school
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
2	208	2.553	A
3	259	2.529	A
4	65	2.354	A B
1	221	1.9412	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.612	0.153	(0.219, 1.004)	4.00	0.000
3 - 1	0.588	0.145	(0.216, 0.960)	4.05	0.000
4 - 1	0.413	0.223	(-0.161, 0.986)	1.85	0.251
3 - 2	-0.024	0.147	(-0.402, 0.354)	-0.16	0.998
4 - 2	-0.199	0.225	(-0.776, 0.378)	-0.88	0.813
4 - 3	-0.175	0.220	(-0.739, 0.389)	-0.80	0.856

Individual confidence level = 98.95%

**no.library versus type.school
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

type.school	N	Mean	Grouping
2	208	3.207	A
4	65	3.154	A B
3	259	3.112	A B
1	221	2.706	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	0.501	0.171	(0.061, 0.941)	2.92	0.018
3 - 1	0.406	0.162	(-0.011, 0.823)	2.50	0.060
4 - 1	0.448	0.250	(-0.194, 1.090)	1.79	0.278
3 - 2	-0.095	0.165	(-0.519, 0.329)	-0.57	0.940
4 - 2	-0.053	0.252	(-0.700, 0.594)	-0.21	0.997
4 - 3	0.042	0.246	(-0.590, 0.673)	0.17	0.998

Individual confidence level = 98.95%

**compliment versus gender
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

gender	N	Mean	Grouping
3	6	5.667	A B
1	332	5.3614	A
2	415	4.9277	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.434	0.133	(-0.745, -0.122)	-3.26	0.003
3 - 1	0.305	0.745	(-1.438, 2.048)	0.41	0.912
3 - 2	0.739	0.743	(-1.001, 2.479)	0.99	0.581

Individual confidence level = 98.05%

**support versus gender
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

gender	N	Mean	Grouping
3	6	5.833	A B
1	332	5.5542	A
2	415	5.2386	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.316	0.130	(-0.620, -0.011)	-2.43	0.040
3 - 1	0.279	0.728	(-1.424, 1.982)	0.38	0.922
3 - 2	0.595	0.726	(-1.105, 2.295)	0.82	0.691

Individual confidence level = 98.05%

**explore.world versus gender
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

gender	N	Mean	Grouping
3	6	4.833	A B
1	332	4.6386	A
2	415	4.2048	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.434	0.135	(-0.750, -0.117)	-3.21	0.004
3 - 1	0.195	0.756	(-1.575, 1.964)	0.26	0.964
3 - 2	0.629	0.755	(-1.138, 2.395)	0.83	0.683

Individual confidence level = 98.05%

**encouragePA versus gender
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

gender	N	Mean	Grouping
1	332	4.7349	A
3	6	4.500	A B
2	415	4.3422	B

Means that do not share a letter are significantly different.

Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.393	0.122	(-0.679, -0.106)	-3.21	0.004
3 - 1	-0.235	0.684	(-1.836, 1.367)	-0.34	0.937
3 - 2	0.158	0.683	(-1.441, 1.757)	0.23	0.971

Individual confidence level = 98.05%

**not.authoritarian versus gender
Tukey Pairwise Comparisons**

Grouping Information Using the Tukey Method and 95% Confidence

gender	N	Mean	Grouping
3	6	4.333	A B
1	332	3.5301	A
2	415	2.9807	B

Means that do not share a letter are significantly different.

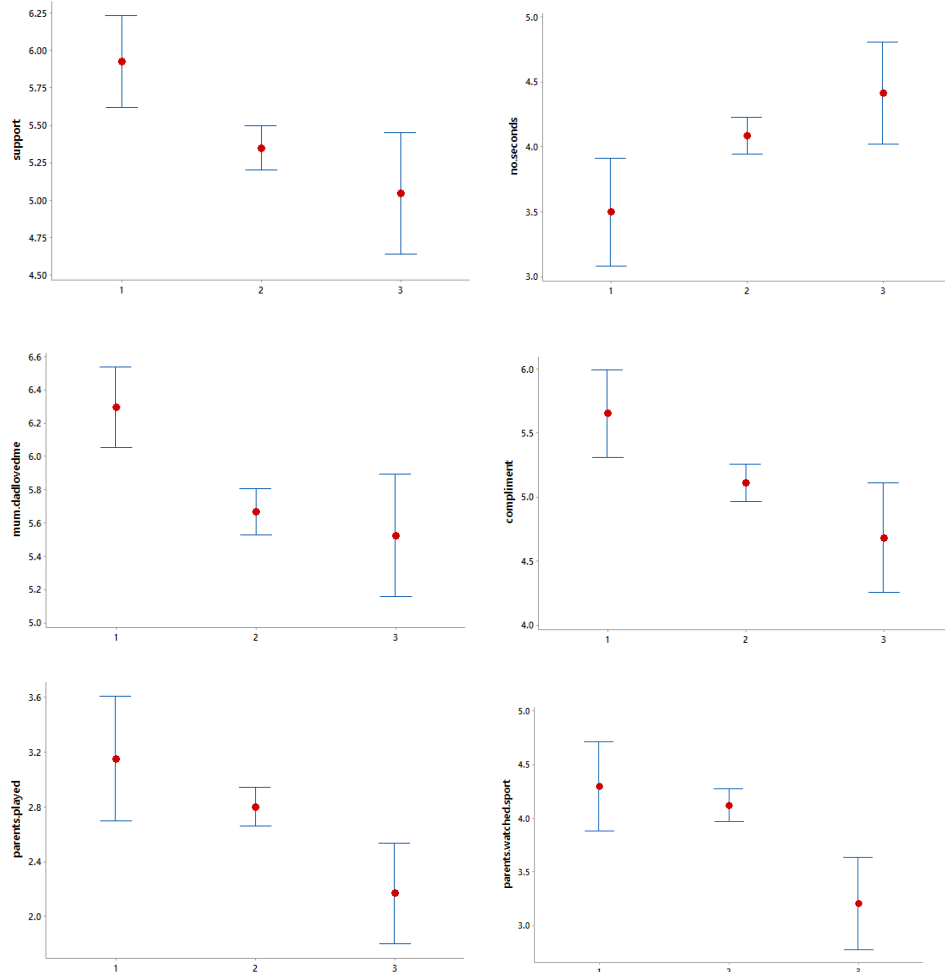
Tukey Simultaneous Tests for Differences of Means

Difference of Levels	Difference of Means	SE of Difference	95% CI	T-Value	Adjusted P-Value
2 - 1	-0.549	0.122	(-0.836, -0.263)	-4.49	0.000
3 - 1	0.803	0.685	(-0.799, 2.406)	1.17	0.469
3 - 2	1.353	0.683	(-0.247, 2.952)	1.98	0.117

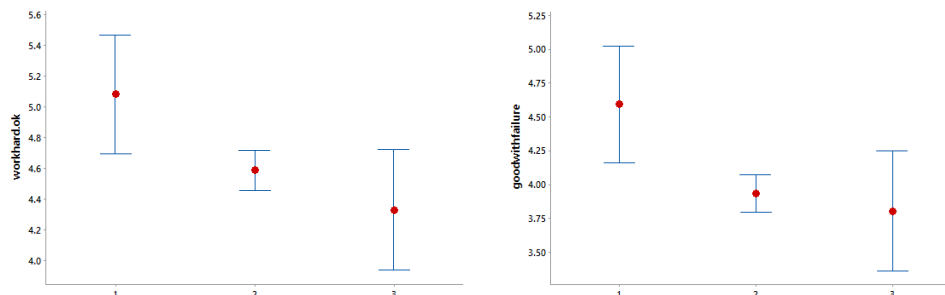
Individual confidence level = 98.05%

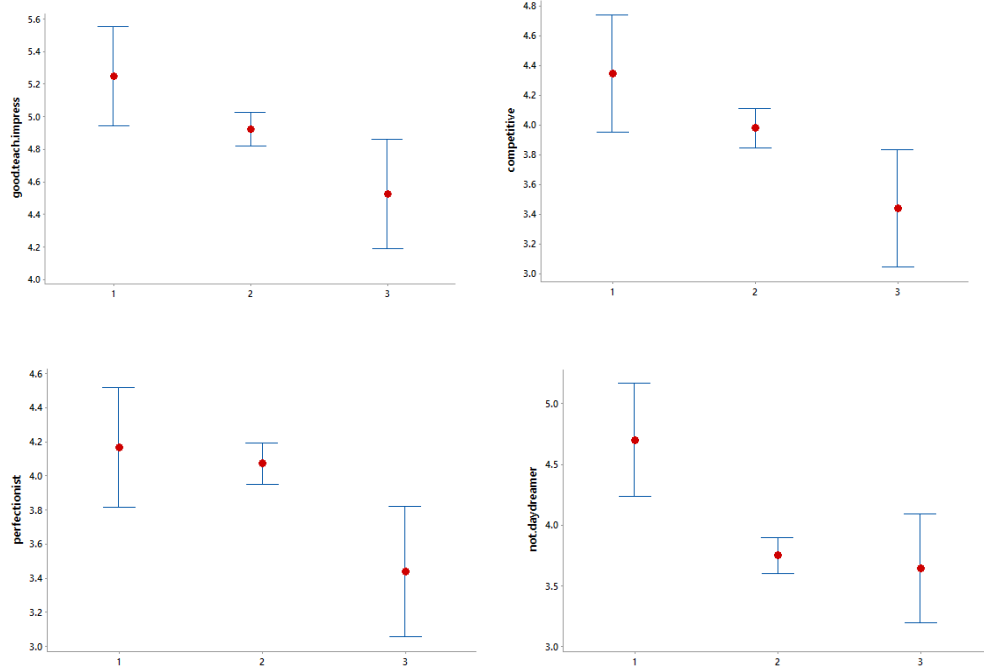
Appendix 15. Study 2 – Interval plots of all variables

Variables showing small difference

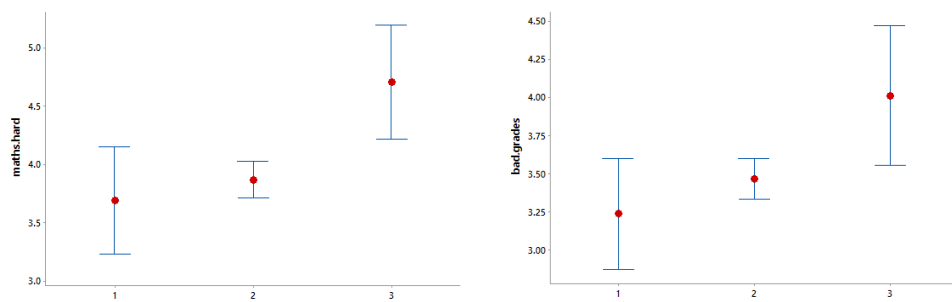


Interval plots of support, no.seconds, num.dadlovedme, compliment, parents.played, parents.watched.sport

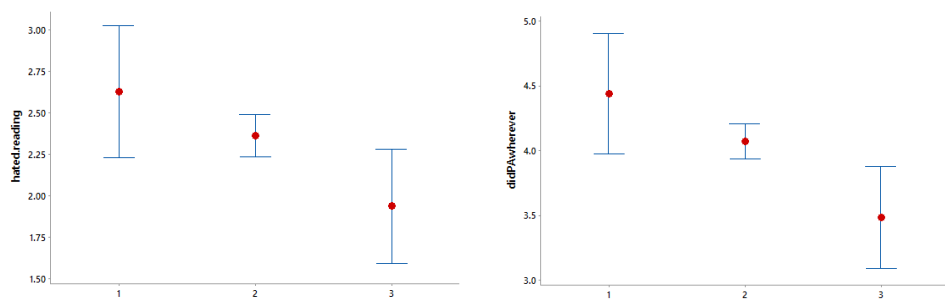




Interval plots of workhard.ok, goodwithfailure, goodteach.impress, competitive, perfectionist, not.daydreamer

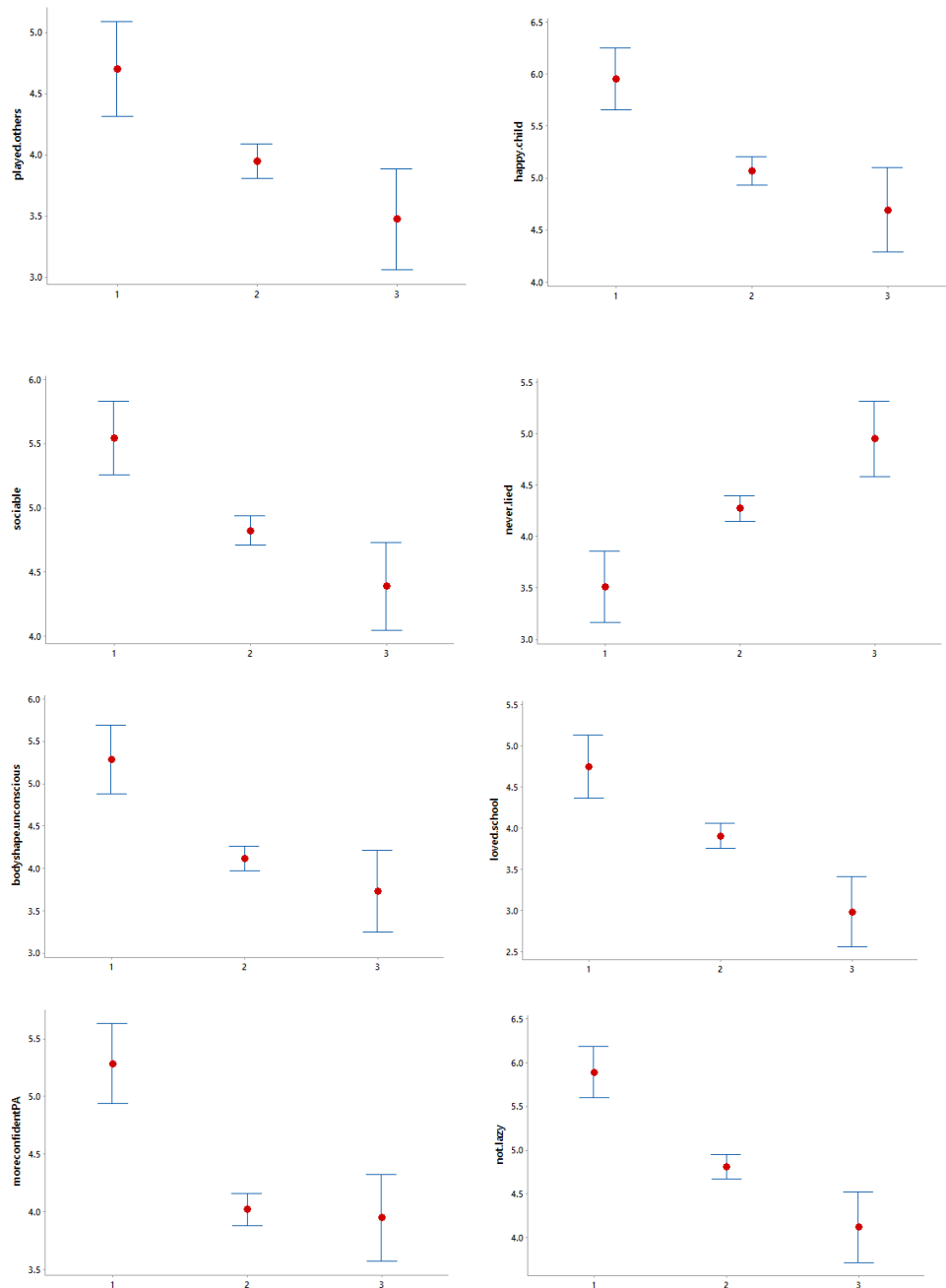


Interval plots of maths.hard, bad.grades



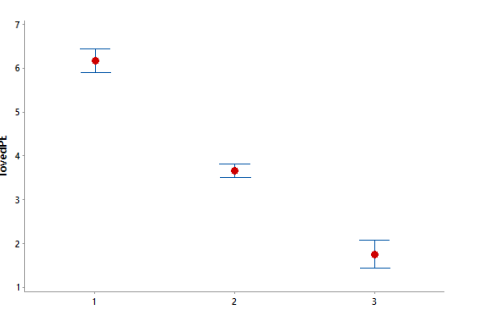
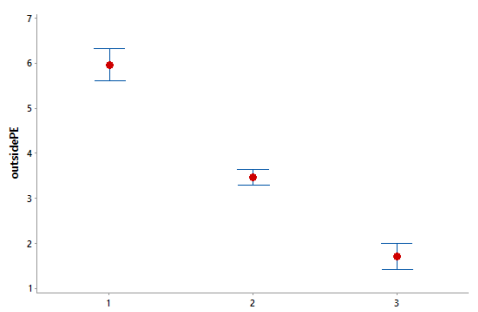
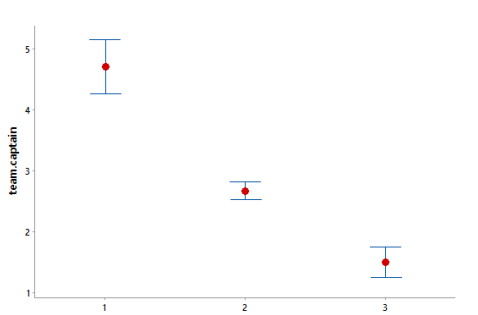
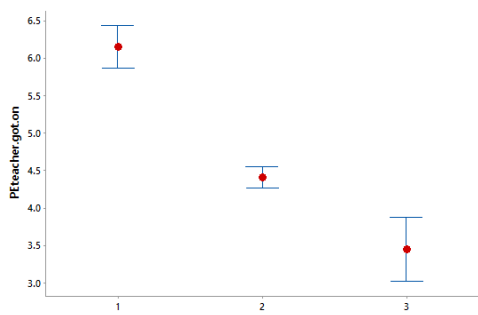
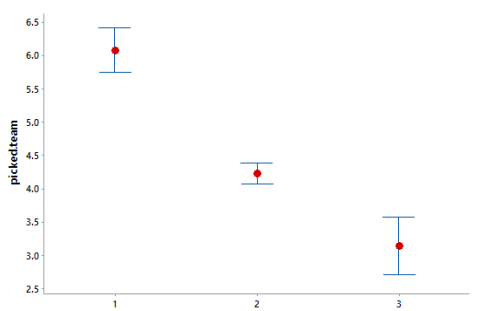
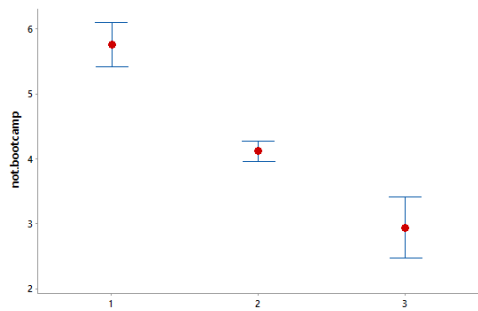
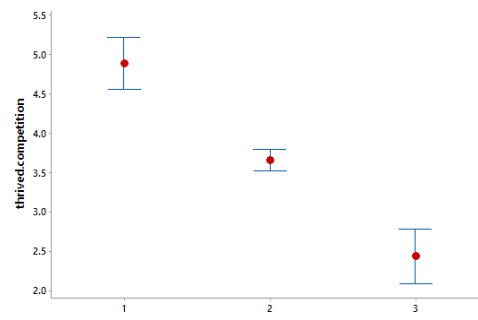
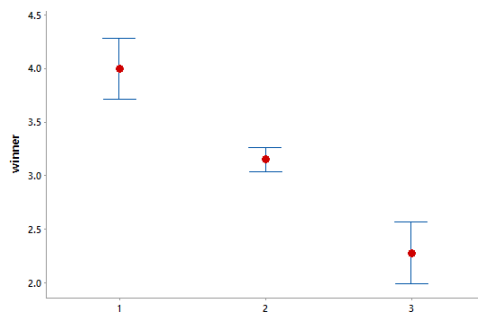
Interval plots of hated reading, didPAwherever

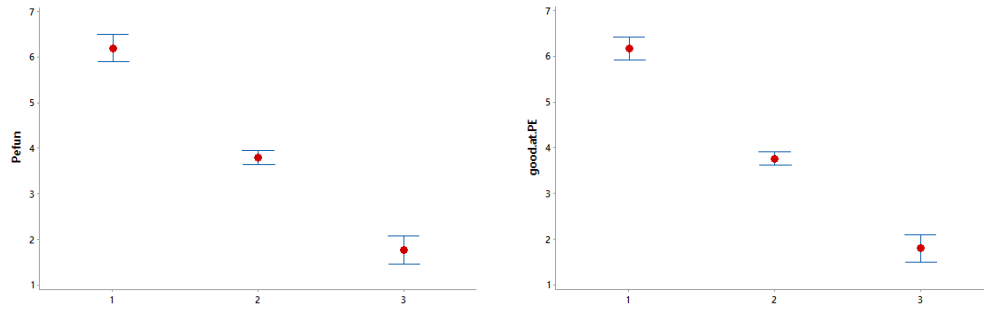
Variables showing moderate difference



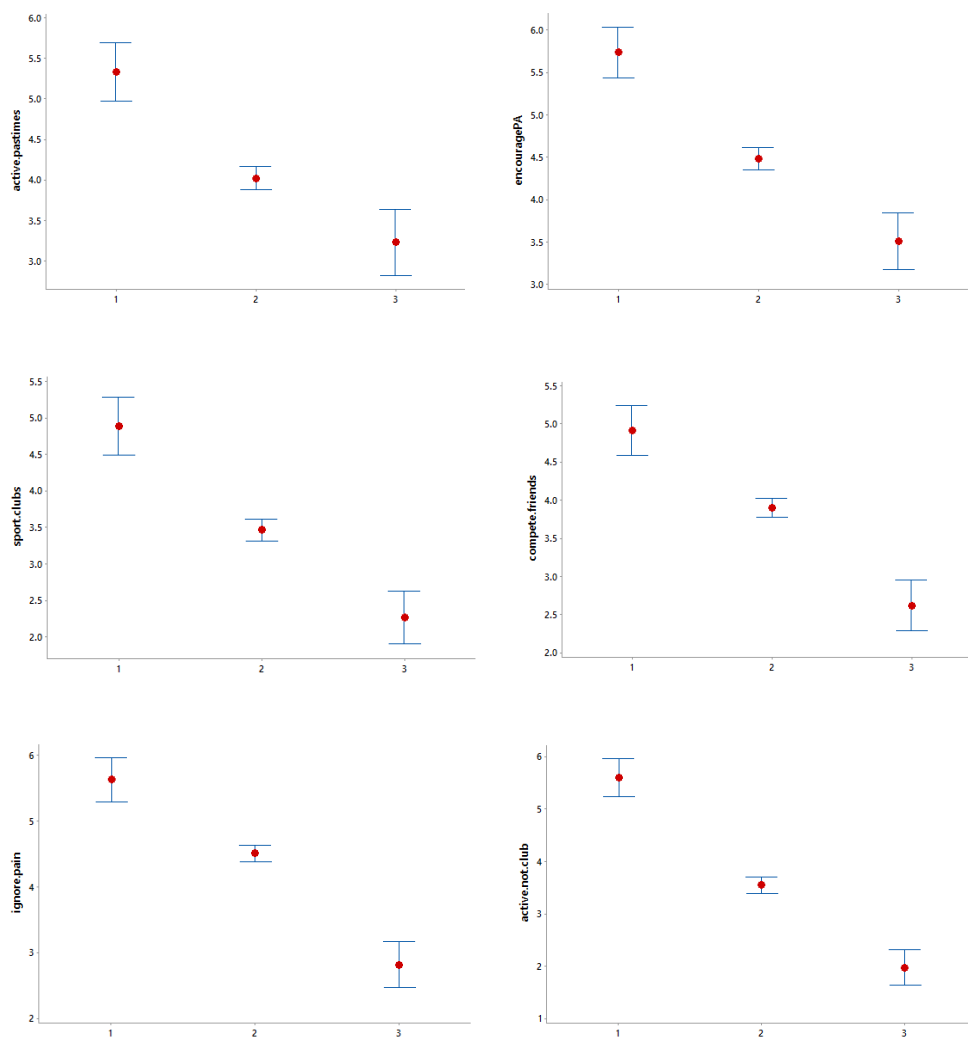
Interval plots of played.others, happy.child, sociable, never.lied, bodyshape.unconscious, loved.school, moreconfidentPA, not.lazy

Variables that show strong difference





Interval plots of winner, thrived.competition, not.bootcamp, picked.team, PEteacher.got.on, team.captain, outsidePE, lovedPE, Pefun, good.at.PE



Interval plots of active.pastimes, encouragePA, sport.clubs, compete.friends, ignore.pain, active.not.club

Appendix 16. Study 3 - Narrative interview information email

Participant information sheet and consent form sent to interviewees by email.

Dear XXX,

I am contacting you, because you recently filled in an online survey about physical activity and you kindly said you would be happy to take part in a telephone interview. I have attached an information sheet about the research that should answer any questions you have.

I will be calling you within the next 7 days but if there are suitable times for you, please email me and if I am free, I will call you at your chosen time. The interview will last about 30 minutes and will be recorded and you will be asked to give your informed consent to take part at the beginning.

I would like to thank you again for agreeing to participate. If you no longer wish to participate that's fine. If you could email me to tell me and I will not contact you again.

kind regards

Anne Elliott

Appendix 17. Study 3 - Sample transcript

Transcription of telephone interview

A. Hello XXXX you took part in a survey about physical activity recently and very kindly said you would be happy to take part in a telephone interview. Are you still happy to take part? It'll be about 20 minutes and anything you say you will remain anonymous. I am recording it so I don't lose any of the information you give me. The study is part of my PhD. I think that's all the relevant information. Are you happy to go ahead with it?

M. I am yes

A. Lovely. So what I'm calling about and I really want you to tell me all about your thoughts, experiences and views about physical activity through your whole life between school and now.

M. To be honest I haven't done much physical activity. The last time I think I was probably at school to be honest.

A. Well let's start there then

M. Well I used to love playing football, then I started smoking, so that puts it out the window sort of thing, no I just used to like playing football. Well if it was playing cricket or rugby I used to wag lessons sort of thing.

A. Why was that?

M. I just didn't like playing rugby or cricket. It were boring for me.

A. And what about going in the gym?

M. I've always been skinny so I've never bothered, I've never had nought to turn into muscle. I was good at football but like I said I started smoking and I started driving scooters I just forgot about it all and didn't really have time but used to have a kickabout now and again.

A. Where you in the school team

M. I was for a while. I used to play outside school in our own football team Grammas Avenue and we used to play against another team from up another avenue every week. I used to love playing football

A. How old were you at this point?

M. Right from 12 up to 16.

A. When did you decide that physical activity wasn't for you?

M. Well it was my smoking the decided for me, I couldn't keep my breath and things like that.

A. How old were you when you started smoking?

M. I were 15 1/2. It's not just that I got into scooters and things like that and I didn't really have much time for it.

A. Was there anything at school that you were really good at?

M. No only football and English and art. I used to like art. I didn't like maths. I never went to none of the maths lessons at all in the last year.

A. What about the teachers. I'm particularly interested in the PE teachers?

M. I can't from high school but I can remember more from middle school to be honest, as I said when I were in high school I hardly did any PE in the last year, I used the wag it. So I can't really remember PE teachers from high school but I can remember them from middle school. One of them were my class teacher as well, they were okay and I had another one, funnily enough he were disabled because he'd had an accident playing rugby, and he got brain damage. He walked funny but he used to carry on teaching us telling us tips and things like this but he were more of a rugby man than football.

A. So lets go on to the scooters that you mentioned

M. 6.12 I were into punk rock to start off with, I just saw all the scooters going up road when I were getting paper for my dad once, and I thought I want one of them, and I ended up getting one. And I still got them now to be honest. I just used to make with all lads around town and go on rallies and runs and still do it now. It's something I've never grown out of. In fact I don't think I've grown up to be honest.

A. To go back a second why didn't the teachers try and keep you in the team?

M. I'm not sure, I just never used to turn up the training and things like that they would have the word and I would say no I just couldn't be bothered, I had something else on, just used to make excuses.

A. What would have kept you there

M. Probably if I hadn't started smoking and got into scooters. Because then I still had plenty of time.

A. 7.44 Lets move on to your early 20's What's important? What about sport in general, are you doing any?

M. No just watching now. Just watching football, live football. I mean watching live off me laptop. Live streaming.

A. I mean in your 20s

M. Same as it is now I used to go and watch Newcastle United and Barnsley with my dad. They were rubbish and I really didn't want to go but I didn't want to hurt his feelings. We didn't have season tickets just used to go to every home match and most of the away matches if they were fairly local. Sometimes when we went on scooter rallies if there were a pitch nearby we

used to camp out on pitches and all sorts, or even kick about on beach, that's were the only time I got to play football after

A. Were your mates sporty?

M. I think they were the same as me, riding scooters and that became the lifestyle, I also met my ex partner I think I was 21, and then even scooters got put on the backburner for a bit

A. How long were you together?

M. 21 years. Yeah I have three kids,

A. Have you encourage them to do physical activity?

M. Well yes I used to do my youngest son used to play for the football team well he played for quite a few football teams locally but he just packed it in. He'll have been 15. He doesn't smoke or he's not into scooters he said he didn't have time for it, with doing his exams and studying sort of thing. No just football. I did used to kickabout in the garden with him now and again if it were summer, and I weren't working I used to encourage him, I used to take him to his football matches. I re did my scooter when I split with my ex-partner eight years ago. While I stopped riding it but I used to go on day trips when there were a rally with the family and then I met my wife who I just split from her as well in November and she loved the scootering as well, eight years ago I got back on road, she were 21 years younger than me, but she used the love the scooter thing and going on rallies, I think to her it were a good piss up and get drunk thing but she enjoyed it.

A.12.27 Lets go back to when your kids are youngish. Whats going on with you in terms of physical activity?

M. Well when I had sky sports I used to watch a lot. If it were some, if I weren't at work, I'd kick around in the garden with them, it were only a small garden, so it weren't too much physical. Very rarely sometimes we go walking to water park that were it. The kids learned to swim at school, no me wife who I've just split with now used to take me youngest son when we were on holiday and whatever but us, I've never liked water in baths, with that chlorine in it, it gives me headaches and makes me feel sick so what never bothered with baths. I was taught to swim at school like but as I said I hated water and so I don't mind swimming in sea, but not in proper swimming baths.

A.14.05 Is there anything we haven't covered in your 30's?

M. No not really

A. Well lets move on to your 40's what going on

M. o nothing is different. I just got back on my scooter just watching football still when it live, I live stream, very rarely play it now, in fact it's eight years since I last kicked a football.

A. Do you think you are fit and healthy?

M. No not really in it diet not very good. I've got osteoarthritis at the base of my spine so that doesn't help now, smoking still that doesn't help, it's when I start bending down too much or turning from side to side too much then it starts giving me bad pains in my back, well it's like a toothache. I still watch football every Saturday.

A. Did you watch any of the Olympics

M. No I didn't actually. I didn't really get much, I'm not particularly interested in it this time

M. Why are you not interested

I'm not sure really I used to like watching athletics when Daley Thompson and all them were about, a long time ago and Linford Christie I just lost interest, I don't know why to be honest.

A. What would make you interested again?

M. I'm not sure, I'm really not sure about that one

16.21 A. The governments telling all of us to get fit and healthy. What do you think about that?

M. Well I'm still slim I'm just not healthy with my back, it could be an insult to some people, well saying fit and healthy, it's presuming that some people are unfit and unhealthy in my opinion.

A. Do you think we are fit and healthy nation?

M. No not to be honest I'm not sure but they keep going on about this obesity and things like that, bad diets and whatever, no looking around, it's hard to say to be honest, I don't think we are a healthy and fit country, too much junk food nowadays.

I can see what they're saying but like I said it can be seen as an insult to these people in particular. Well when I see people around me, most people my age or whatever are not very healthy and not very fit, I suppose younger ones might be, but when they're saying as a nation in a whole it could be insulting

A. And do people get insulted?

M. No not really I don't think people pay too much attention to it. And you think that

A. Do most people understand the connection between lifestyle and health?

M. I don't think they do to be honest it's not something they tell you so much about, well I'm not sure about newspapers any more, I once put two and two

together and thought overweight can cause heart disease but do the rest of the country know that. I'm saying I don't know. Obviously not.

A. Why don't people do physical activity?

M. That's a good question, probably through being idle or things like that, unless they are like me, they got no interest, they've moved on and found other hobbies and activities. I've been interested in watching football but not playing it. As I said when I started with scooters and smoking I lost all interest in playing football.

A. Are there any themes running through your life?

M. No just scooters and music and yeah like I said I've always been thin and smoked since I was 15 1/2, it's not been very good for me, exercise wise, and I tried jogging but I don't get very far without coughing or wheezing. If I had been someone who put on weight more easily I probably have done more about it. If I done any more exercise you wouldn't have been able to see me behind a lamppost I've always being thin, if you know what I mean I'm thin. but if I done much exercise I would have ended up thinner. The children are all like me, thin fit and healthy, they don't smoke in fact me daughter's a schoolteacher now, and me son has just started an engineering apprenticeship and me other son is a trainer in a warehouse well they've all done a lot better than me.

A. Will they be fit and healthy in their lives?

M. I'm not sure well my daughter she is very very thin, she doesn't do much physical activity and me oldest son he used to play football regularly, he used to go up to the Astroturf every Wednesday but since he's had a child a baby last year he's just stopped going. And like I said my youngest son he's stopped going when he was about 15 and he's not showing any interest in going back again.

23.20 Like I said I've not done much.

A. I know I forgot to ask, did your family play sport?

M. Yes me dad was a keen footballer, a keen athlete, me grandad used to play football for Yorkshire. But that were going back a long time, before the war, he used to do a shift down pit, come back up and play football sort of thing. People used to tell me he were a very good footballer, he used to do a shift down pit come up and play football not like them nowadays all this overpaid, rest days this and rest days that,

A. Where you influenced by your mum and dad?

not really. I think me dad did encourage me, boxing when I were about 13, me mam stopped me going, she said it were dangerous, no one of his mates at pit were amateur boxer like, so he took me down to his gym started to get

me doing it that way but me mum stopped me doing it because it was dangerous. There was nothing better than getting punched with your lights are out.

A. Is there anything we haven't covered that you'd like to say?

M. No I don't think so

A. Thank you so much for you time.

Appendix 18. Study 3 – Narrative comparison grid

	IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Parents	No interest No encouragement	Dad keen footballer and granddad played for Yorkshire. Father keen for him to box but Mum stopped him	No interest, No encouragement	Elderly. No encouragement	Kicked a ball round in street. Interest didn't come from parents	Thought all children were active after school	Mother never exercised but walked to work every day	Father big football fan. Watched match of the day with him from age 5
School PE	Not very good at it. Decided not for him aged 12	Last time he did PA. loved playing football started smoking	Hated it and couldn't do it. Decided not for her aged 11	Hated it. No confidence. Played a little netball Lessons regimented	Loved it. Played in basketball and football team and a good runner and swimmer. Decided he was good aged 14	Loved it. In every school team. Was good at it	Did all sports except netball. Walked or cycled to school. Cycling was main transport and main 'free' exercise	Liked PE. Played all team sports. Particularly netball
PE teachers	Saw him as a 'dead loss'. Only interested in sporty pupils. 1 teacher hit them	Has been rugby played but was brain damaged in sports injury	Insisted on making her do things she couldn't	"Horrible, sadistic, picked on her"	Was Alan Walters – elite rugby player. Was his idol. Invited him to tryout for Colts. Hit pupils if misbehaved	Good but hard taskmasters. They favoured sporty pupils and only tolerated others		Got on well with teachers
Other pupils in class	1/3 were good, 1/3 liked it but had no talent, 1/3 no interest like him	Started smoking aged 14 peer pressure. Stopped him doing sport	Friends similar to her	Hid behind the pupils that could do it	Others brought notes or made excuses	Nobody thought about the feelings of the fat lad who was self conscious and dreaded being there	All friends had bicycles	Teachers were hard on pupils who struggled

	IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Marriage	Wife didn't like sailing so he stopped it	Met 1 st wife through scooter gang. Divorced. Met 2 nd wife through scooter gang. She was party animal. Split 8 mths ago	Married	Married. Husband quite active and tried to encourage her to follow a fitness regime	Met his girlfriend at club. Married. Wife became rugby widow. In late middle age, divorced came out as homosexual, lives with partner	Met girlfriend at club	Married a man who was lazy. Exercise became sporadic. Became unwell and lethargic. Divorced	Moved with husband's job. Found new netball club. He was also PA
Child rearing years	No PA. His sons are very active because of good school PE experiences	3 children whom he encouraged to play football. Wife took them swimming	Thinks she encouraged them. Took them to karate and swimming. She didn't join in	No children. Cared for parents. Occasional Pilates class but too far away	Didn't encourage his children to do PA. Didn't do enough.	Doesn't mention marriage or children at all - emphasis	No children	2 children by caecerean. Stopped her playing for season. Had independent sporting activities whilst other babysat. Have fostered active home environment
Early middle life	45 – took up cycling, stopped due to chronic illness	Watched Sky Sports a lot. Had bad diet.		After parents died did no PA.	Deselection from 1 st team was hard. Played in veteran team for 10 yrs for pleasure and social	Didn't become sport official after accident but continued to watch.	When husband took up running so did she. Didn't like it	Works in Primary school. Did Zumba when P/T but less when F/T
Recent past	Daily strolls. Local Authority health check and joined gym with wife. Doesn't like it.	Started going on scooter rallies again. Not healthy – has osteoporosis and has smoked since school.		No exercise, Called herself lazy. Would only start if GP told her to.	Doesn't participate but sat on committee and watches every game.	Has put on weight and walks but this makes him still an exerciser.	Current partner is active and encouraged her to be once again. Walks every lunchtime and for leisure.	Husband only watches football now. Still plays netball and family walks in rural setting.

	IM1 Roy	IM2 Fred	IF1 Sue	IF2 Jan	AM1 Tom	AM2 Guy	AF1 Pat	AF2 Tina
Personal perspective – close to	Exercise is formal activity, not ACL's	People don't do exercise because they are lazy	"you put in a lot of effort into PA and there is no reward for it"	People who like PA are taking it to extremes		Exercise has to be cardio. Non exerciser has to be totally inactive	Reach point in mid age when action needs to be taken. Sees children learning bad habits from parents	'Find something you'll enjoy, then you'll want to do it'. Winning and losing isn't important – enjoyment is
Personal perspective – far from		Didn't watch Olympics. Too much junk food and not enough education about lifestyle	Should concentrate on diets not exercise. People need to make up their own mind to participate	Thinks there are already a lot of people doing exercise		Disagrees with way school no longer encourage competition	Life has got physically much easier and people have got lazier.	80 yr mother has improved health by taking up walking. Obese children/families at school don't blame their lifestyle