



MENTAL TOUGHNESS QUESTIONNAIRE

A USER GUIDE

July 2025

MTQPlus

MTQLite

MTQ4Cs

MTQ48



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MTQ User Guide – Version 4.02

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Introduction to Mental Toughness and MTQ

The original mental toughness psychometric measure (MTQ48), which is now available commercially, was developed in collaboration between Peter Clough, Professor of Applied Psychology at The University of Huddersfield and Dr Keith Earle, Senior Lecturer, The University of Hull, and Doug Strycharczyk, Managing Director, AQR International.

Published in 2002, the mental toughness model and the MTQ48 measure have proved to be an important insight into a key aspect of personality with application across the whole range of human endeavour.

An impressive and growing body of evidence has emerged to show that it has value wherever performance, behaviour and wellbeing is an issue. Case studies and research papers are published and updated regularly.

What is Mental Toughness?

Two main definitions have emerged over time. Both say the same thing. The different language simply reflects the different audiences to which these are offered. The most recent definition is the definition which is now the most widely used.

“The capacity for an individual to deal effectively with stressors, pressures and challenge and perform to the best of their abilities, irrespective of the circumstances in which they find themselves”.
(Clough & Earle 2002)

“Mental Toughness is a personality trait which determines, in large part, how people respond to challenge, stress and pressure, irrespective of their circumstances”.
(Clough & Strycharczyk 2012)

Understanding the term “Mental Toughness”

Although widely accepted in the sports world, when the term “mental toughness” was first introduced into the occupational, social and health worlds, the reaction of many was to take a dislike to the term and seek to replace it with resilience or character. As we have seen, it is a wider and more useful idea than resilience alone. Character is very poorly defined, it can mean different things to different people.

Most of the negative response was to the word “toughness” with its connotation of being “macho” and for some, conveying a sense of aggression and being domineering.

Toughness here is about being strong, rebounding and being capable of accepting that life can be difficult but that it is full of opportunities as well as threats. Professor Clough often describes it as “being comfortable in your own skin” – having that inner strength to deal with whatever life throws at you.

It is also useful to perceive it as a significant factor in “being the best that you can” which links it well with Maslow’s theory of motivation – particularly the key to self-actualisation. And, of course, this is the sense that Loehr identified.

During the London Olympics, the BBC hired Michael Johnson, one of the world’s greatest athletes to be one of the main sports commentators. He spoke daily about mental toughness and its importance but did so in an interesting way.

He would focus attention on athletes who perhaps had not reached a final and who had not won a medal. He drew attention to the fact that they were achieving their own “personal best” and he linked that to their mental toughness. Unlike many commentators, who only recognise the gold medalist as a winner, Johnson reminded everyone that all those who achieved their personal best were also winners.

This is what we mean by mental toughness. In our work we talk about the 4 fallacies:

Mental toughness is a macho, male-dominated concept.	That is not the case. Studies show that males and females show similar patterns of mental toughness.
Mentally tough people are uncaring and self-centred.	Not so. Studies show a close relationship with emotional intelligence.
Mental toughness is all about winning.	As we see above, everyone can be a winner.
Everyone should be mentally tough.	Whereas the mentally tough may achieve more and enjoy better wellbeing, diversity is important. The mentally sensitive also bring a lot to the party.

Why not Mental Strength?

Mental Toughness and Mental Strength are two phrases which are often used interchangeably. However, it is important to be careful about how we describe Mental Toughness for several reasons.

Firstly, the opposite of Mental Toughness is Mental Sensitivity. The opposite of Mental Strength is Mental Weakness. These are not the same thing. Mental Toughness will broadly equate to Mental Strength; however, Mental Sensitivity generally does not equate to Mental Weakness.

Research shows that generally, the Mentally Tough benefit from an advantage – they tend to achieve more, enjoy better well-being, are more positive and even earn more. On the other hand, the Mentally Sensitive find the road through life and work more challenging – they can feel every bump on the road with the consequences that it brings.

Nevertheless, it is also the case that there are Mentally Sensitive people who are successful and achieve great things. Equally, some Mentally Tough individuals fail and experience frustration.

The key is self-awareness. Whether you are Mentally Tough or Mentally Sensitive, the key to utilising your bundle of qualities is to be aware of who you are and why you think about things in a particular way.

Secondly, it is important to be careful about the description of Mental Toughness because there are potential strengths and weaknesses across the Mental Toughness spectrum. Although the potential disadvantages that a Mentally Sensitive person might be open to seem fairly obvious, studies are indicating that they also possess qualities which would be described as strengths.

The Mentally Sensitive are often more aware of potential overload and burnout, which can be valuable in team settings. They can be more co-operative – they tend to have lower levels of goal orientation, which means they can be effective followers. It is less likely that there is a misalignment of their goals with yours if you are a leader. They are often creative in a useful and different way – because they see and think about the world from a different perspective and bring that to their work. Think of artists and musicians!

Similarly, the Mentally Tough can have potential weaknesses. Having a high level of Control can mean they think “I can do it, why can’t you?” which is not always useful. They can overcommit and burn out, failing to recognise the warning signs of fatigue. They can excessively take on challenges, eventually taking too many risks and sometimes being enticed by the next “new” thing before they sort out the thing they are working on. They can be overconfident about their abilities and can drown out the contributions of others, in extreme cases emerging as “verbal bullies”.

It might seem a paradox, but Mental Toughness awareness is as important for the Mentally Tough as it is for the Mentally Sensitive. So, self-awareness, reflection and focused development are important for all.

Why is Mental Toughness Important?

Studies in the occupational, educational, health and sports worlds consistently show that mental toughness is directly related to:

■ **Performance:**

Individuals perform more effectively in terms of volume and quality of work.

In education, we see a clear correlation between mental toughness and performance in examinations and tests at all levels of education. These studies consistently show that around 25% of the variation in a person's performance in exams is explained by their mental toughness.

In the workplace, studies in call centres, managerial groups etc. show similar patterns.

Moreover, when aggregated, we can observe similar patterns between the overall mental toughness of groups and organisations and their measured performance. Mental toughness is an organisational and cultural issue too.

■ **Positive Behaviour:**

The higher the level of mental toughness, the more the individual demonstrates positive behaviours.

They will adopt a "can do" attitude and there is clear evidence that the higher the level of mental toughness, the more likely the individual will engage in activities with which they are associated (asking questions, engaging in discussion, volunteering to carry out tasks, etc). They are more likely to volunteer for things, to welcome change, to see the positives where others see the negatives and are more accepting of responsibility.

■ **Wellbeing:**

The greater the level of mental toughness, the greater the sense of wellbeing. This translates into outcomes such as:

- Improved attendance/reduced absenteeism.
- Dealing more effectively with difficult days and adversity.
- Reductions in reported bullying.
- Being able to put setbacks into perspective and recover more quickly.
- Sleeping better.

■ **Aspirations:**

Studies show that mental toughness appears to be positively correlated with career aspirations and aspirations in general. The mentally tough appear more ambitious than the average. For instance, in social work, this can be particularly significant in areas of social and economic deprivation where the prevailing ethos might be one of despair or "helplessness".

■ **Employability:**

There is a clear relationship between an individual's mental toughness and their ability both to get a job and to get the job they want. Higher mentally tough persons are more competitive.

There is evidence to show that programmes in further and higher education which attend to qualifications and skills but not emotional resilience, do not deliver promised results.

This is particularly effective with the use of career guidance tools such as Carrus.

- **Completion/Drop-Out rates:**

Several studies show a strong link between mental toughness and the extent to which a student will stick with a programme of study or work and will see it through to a conclusion.

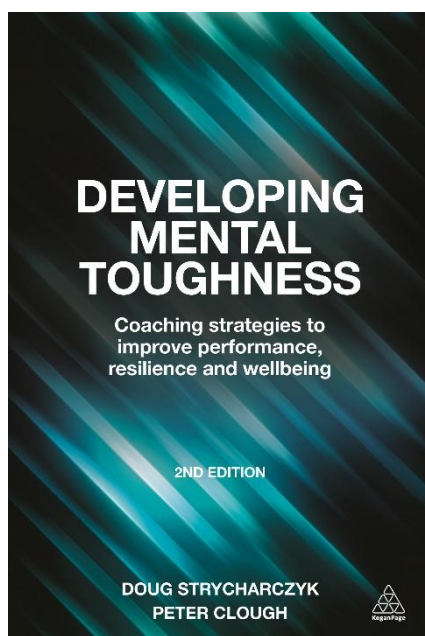
This applies to project work in the workplace – mentally tough persons are more likely to complete a project on time and on target.

- **Life Skills:**

Developing psychological or emotional resilience and mental toughness is a very important life skill. As one Director of Children's Services put, "not only can we, in many cases, enhance a young person's performance, these particular skills are useful for just about everything else that person is going to have to do in life".

It is important to add that tests such as MTQ48 should never be used in isolation. It is most effective when coaches, trainers, managers, teachers, tutors and counsellors use it with other sources of information to make the best assessment of the person in front of them.

An excellent guide to the mental toughness model and measure can be found in
["Developing Mental Toughness" D Strycharczyk & P Clough \(Kogan Page 2016\).](#)



Mental Toughness – The Origins of the Concept

If asked to participate in a discussion about mental toughness without having an agreed definition in front of you, most people would be able to do so. Mental toughness is a concept we all seem to understand and the name does convey some sense of what the subject may be about. However, until 2002 it was a concept that had never been properly articulated or operationalised.

It is the result of bringing together the work of academics and practitioners which gives the concept a great deal of potency. Practitioners now have a better theoretical underpinning to their work.

Practitioners have generally focused on developing interventions, tools and techniques which seem to work without necessarily understanding fully why they work. Adding this kind of understanding helps everyone to apply what they do more effectively and more efficiently.

Evolution

Although our modern understanding of Mental Toughness begins approximately 50 years ago, the origins of the issue go back further than that.

Most of us are aware of the “fight or flight response”. We developed a response to stressful situations, such as generating adrenalin, which helped us to respond quickly and run away from a threat or gear ourselves up to take the threat on.

As time went by, these types of threats lessened but our response to what we perceive as stressors haven't. Today we can still generate a response, although the stressors differ.

Philosophy

One of the earliest references to Mental Toughness is from Plato. It dates back to 400 BC – two and a half thousand years ago. Plato identified what he called his four Cardinal Virtues. He saw these as fundamentally important in natural morality.

One of those virtues is Fortitude which he defined as “having emotional power and the ability to withstand adversity”. He saw well-being (eudaimonia) as the highest aim of (moral) thought and conduct. When examining Fortitude more closely, you can see that Plato is almost describing what we call Mental Toughness today.

Plato's work is enduring. The four virtues now appear as fundamental ideas within many religious practise today.

The Theoretical Roots

There are two main theoretical roots, both emerging from health psychology:

- Resilience - Commitment, control – a passive concept.
- Hardiness (Kobasa) – Commitment, control, challenge – who developed the idea of Hardiness, introducing a more positive and proactive element to the idea of resilience.

Resilience

Most commonly defined as: “The ability to recover quickly from change, setback or misfortune”

Researchers have found resilience to be a function of the individual’s:

- Accuracy of assessing events.
- Ability to identify options and their flexibility in response.
- Internal drive to complete tasks on time and on target.

People could develop resilience by:

- Thinking positively about the problem or challenge – despite adversity “I can still do it”.
- Focusing on what can be controlled rather than what cannot.

Resilience seems to be a function of what we know as Control and Commitment.

In a sense, it is a “passive” response. “Something unwanted or adverse has happened, I don’t like it and it is not what was expected but I can still achieve most or all of what I set out to do.”

Hardiness

Defined by Kobasa as “The ability to bear difficult conditions”.

In her research on Resilience in the 1970s, Suzanne Kobasa made several important observations. She called this concept Hardiness. Hardy individuals appeared to mentally transform stressors into something less threatening. She also speculated that Hardiness could be developed in individuals through carefully directed training.

- Firstly, she realised that there are significant individual differences in the way that people respond to stress. One study showed measurable differences among company executives’ ability to deal with pressure – despite having comparable responsibilities, economic status and physical health, etc.
- Some individuals seem to cope better than others. These individuals, who she describes as hardy, were those whose cognitive strategies are better suited to dealing with stress. E.g. a hardy person was better at identifying the symptoms of stress and therefore was better able to work out what to do.
- She also noted that some people seemed to thrive on adversity and challenge. This was resilience+.

Hardiness is a much less passive concept than resilience. It is an “active” response. This describes people who can also see adversity, difficulty and challenge as an opportunity to show what they can do. Kobasa’s work specifically suggested that it was related to Challenge, Control and Commitment.

Three key players in the development of Mental Toughness

Richard Dientsbier

Dientsbier is a significant figure. He is a North American Health psychologist who used the great outdoors to test out several hypotheses about the way people develop.

He demonstrated that **Physiological Toughening** often led to **Psychological Toughening**. He found that exposure to (physical) challenges could lead to emotional stability and immune system enhancement.

Dientsbier saw that some level of stressful stimulation is needed for optimal performance. He found that stressful situations that are challenging but not overwhelming, may contribute to better physical and psychological health. In other words, facing up to challenge helps you to *deal* with challenge.

Dientsbier uses the term "toughening" to describe what happens when challenging situations require active coping and problem-solving. People who are stressed, but learn to adaptively work their way out of the problem, show a distinct psychobiological pattern. Overwhelming stress overtaxes the nervous system and leads to a variety of unwanted effects, including high blood pressure, sleep disorders, gastrointestinal problems, chronic anxiety, or depression.

However, individuals who learn to deal effectively with such crises - that is, develop good coping and mastery skills - show a more efficient and adaptive nervous system response that only lasts for the specific period of stress, and returns promptly to normal when the crisis is over.

Dientsbier showed that as an individual learns to cope with challenges adaptively, a positive spiral develops. More effective coping leads to a smoother psychobiological stress response; the more this happens, the more the person learns to have faith in his or her own coping abilities, and so the stress response becomes even more adaptive and less disruptive.

Tough people are able to cope adaptively with adverse situations and are therefore less likely to succumb to stress-related illnesses. Dientsbier found that you could toughen up many individuals by exposing them to challenge, particularly by gently stretching their ability to cope with challenge and adversity!

This challenged so-called "stress-management" programmes that rely mainly on relaxation or arousal-reduction techniques. He argued that using these techniques and therapies exclusively may actually work against developing true adaptive toughness. By portraying stress as something to be reduced or avoided at all costs, these approaches inhibit the learning of adaptive coping skills to deal with life's challenges.

Dientsbier carried out several interesting experiments both in the outdoors and in the laboratory. For instance, he would expose volunteers to ice-cold baths for progressively longer and longer periods, whilst asking them to complete simple cognitive ability tests. Over time the test results would go up!

Overall, Dientsbier makes an important contribution because he points to the possibility that mental toughness is capable of being developed where necessary.

Jim Loehr Ed.D

Loehr, a leading sports psychologist, produced the first popular use of the term mental toughness.

He defined it as: *“The ability to consistently perform towards the upper range of your capabilities, regardless of competitive circumstances” (1982).*

He linked the concept of mental toughness with performance on the sports field. He identified four key notions and created a simple questionnaire. The notions were:

- Emotional Flexibility
- Emotional Responsiveness
- Emotional Strength
- Emotional Resilience

He suggested that mental toughness was an essential quality which existed in the minds of winners.

He also believed that it could be learned. Loehr worked with hundreds of elite athletes, many of whom became world champions under his tutelage. Very quickly, his ideas were picked up by the sports community all over the world. By the year 2000, we see regular reference to the notion of mental toughness on the sports pages of newspapers, but very little reference on the business pages.

Nevertheless, even in the sports arena, mental toughness became something to which there was frequent reference but is rarely defined. After Loehr, we see several attempts to define mental toughness, including:

- “Ability to rebound from failure”
- “Acquisition of superior mental skills”
- “Ability to cope with pressure, stress and adversity”
- “Insensitivity to severe pressure”

All of these ideas contribute to a theme but do not really pin down the notion. Mental toughness was poorly defined and provided a confusing picture. It was often quoted, especially in sport, to explain why less talented teams and individuals outperform more talented opponents. People knew the concept mattered but few could explain why.

Professor Peter Clough PhD,

A sports and occupational psychologist, Clough found himself researching mental toughness in sport.

Working with golfers, soccer players and rugby players, he was particularly interested in the performance of placekickers in both Rugby codes. The placekicker has disproportionate value in a rugby team. Commonly they will score as many points as the rest of the team put together. They can be crucial to the success of the team. A sterling team performance can be undone by an “off day” for the placekicker.

On the face of it, converting a placekick is a straightforward technical task. With training and practice, many kickers can be very effective on the practice field. It is performing on the day of the match where things run less straightforward. Any rugby fan will confirm that when a placekicker misses a kick, he will often miss the next kick. The converse applies too.

The same thing applies in many other sports – penalties in soccer, sinking a key 6-foot putt in golf, attempting a high jump record, etc. Clough found that the prevailing concepts of resilience and hardiness

and mental toughness did not quite explain what he was observing. He hypothesised that “confidence” was also a factor in mental toughness.

Together with a colleague, Keith Earle, Clough developed a short 18-item measure to test his hypothesis. The results were encouraging. Clough and Earle set about developing a longer version of the questionnaire.

At the same time, Clough was working with Doug Strycharczyk on a programme for the HM Customs and Excise (C&E) in the UK which involved assessing more than 700 senior managers using a range of tests, exercises and data which was comparatively clean and consistent. HM C&E agreed that they could gather data about the participants in the development centre programme, and asked participants to complete the new extended mental toughness measure. Several other large organisations also provided equivalent data. To this was added data from testing students.

The result was that the researchers were able to:

- Confirm the relevance of the confidence component.
- Create and articulate a more complete picture of mental toughness.
- Develop a reliable and valid questionnaire – MTQ48.
- Begin to assess practical applications and apply a developmental approach.

Now, almost 20 years since the launch of the 4Cs concept of Mental Toughness, there are almost 250 independent research papers which have explored the applications of Mental Toughness and its grounding in psychological theories and principles.

Work with colleagues in a range of sectors has allowed us to build up a considerable body of knowledge, but it has also raised some key questions – particularly around the nature of the commitment and challenge components.

In 2017, Doug Strycharczyk led a research programme, in collaboration with Professor Peter Clough and Dr John Perry to examine these questions. They were able to achieve several important goals which were key development of the concept:

The four constructs, supported by eight independent factors – two to each construct. This enabled:

- The ability to assess and understand mental responses to a much greater degree than ever before.
- Despite the MTQ48 already possessing an impressive level of reliability, the programme has been able to improve the reliability of the Mental Toughness Questionnaire, now the MTQPlus.
- A deeper understanding of the constructs and their applications. As well as adding factors, the research was able to clarify and add to the understanding of the Emotional Control factor.
- Importantly, confirmation that Mental Toughness is a universal concept and that it is multi-dimensional. It consists of eight factors and in the hands of a competent practitioner, it can make a real difference for individuals, organisations and society.

Understanding the Mental Toughness model – the 4Cs

The following pages provide information to help users to understand the mental toughness model and the scales. When first using the measure, it is useful to refer to this section regularly to guide the user in interpreting the output from the MTQ measure and in working with the test taker to help them understand what the results might mean.

The next section includes:

- A description of the 4Cs.
- Interpretive information for the 4Cs.
- Examples of commonly observed behaviours for a high and a low scores on each of the 4Cs.



Description of the 4Cs

The mental toughness questionnaire (MTQPlus) is a 73-item instrument comprising four subscales, measuring different elements of performance-related characteristics. The four subscales are:



Defined: Control is the extent to which a person feels they are in control of their life. Some individuals believe that they can exert considerable influence over their working environment, that they can make a difference and change things. In contrast, others feel that the outcome of events is outside their personal control and they are unable to exert any influence over themselves or others.

Applied: This means for example that, at one end of the scale, individuals feel their input really matters and are motivated to make a full contribution.

At the other end, they may feel that their contribution is of little importance and hence may not play as full a part as they could. An implication may be that one can handle lots of things at the same time and the other cannot.

Ongoing development has enabled the identification of 2 subscales to this scale:

Emotional Control - Individuals scoring highly on this scale are better able to control their emotions. They are able to keep anxieties in check and are less likely to reveal their emotional state to other people.

Life Control - Those scoring highly on this scale are more likely to believe they control their lives. They feel that their plans will not be thwarted and that they can make a difference.



Defined: This subscale measures the extent to which an individual is likely to persist with a goal or work task. Individuals differ in the degree with which they remain focused on their goals. Some may be easily distracted, bored or divert their attention to competing goals, whereas, others may be more likely to persist.

Applied: An individual who scores at the high end of the scale will be able to handle and achieve things when faced with tough and unyielding deadlines. An individual at the other end will need to be free from those types of demands to handle work.

Ongoing development has enabled the identification of 2 subscales to this scale:

Goal Orientation - Individuals scoring highly on this scale are orientated towards setting goals and targets for activities. They are likely to be effective at prioritising, planning and organising.

Achievement Orientation - Those scoring highly on this scale are more likely to deliver that to which they are committed. They are likely to “do what it takes” and gain satisfaction (and perhaps relief) from achievement.



Defined: Individuals differ in their approach to challenge. Some consider challenges and problems to be opportunities, whereas others may be more likely to consider a challenging situation as a threat.

This construct measures the extent to which an individual is likely to view a challenge as an opportunity. Those scoring highly on this scale may have a tendency to actively seek out such situations for self-development, whereas low scorers may avoid challenging situations for fear of failure or aversion to effort.

Applied: So, for example, at one end of the scale, we find those who thrive in continually changing environments. At the other end, we find those who prefer to minimise exposure to change and the problems that come with that, and will strongly prefer to work in stable environments.

Ongoing development has enabled the identification of 2 subscales to this scale:

Risk Orientation - Individuals scoring highly will be open to change and new experience. They are open to learning and are prepared to manage risk.

Learning Orientation - Those scoring highly on this scale will see all outcomes as having a positive element. They will see opportunity where others will see threat and will not be deterred by setbacks.



Defined: Individuals high in confidence have the self-belief to successfully complete tasks that may be considered too difficult by individuals with similar abilities but lower confidence.

Applied: For example, individuals at one end of the scale will be able to take setbacks (externally or self-generated) in their stride. They keep their heads when things go wrong, and it may even strengthen their resolve to do something. At the other end, individuals will be unsettled by setbacks and will feel undermined by these. Their heads are said to "drop".

Again, continuing research has identified two sub-scales for this component.

Confidence (Abilities) - Individuals scoring highly on this scale are more likely to believe that they are a truly worthwhile person. They are less dependent on external validation and tend to be more optimistic about life in general.

Confidence (Interpersonal) - Individuals scoring highly on this scale tend to be more assertive. They are less likely to be intimidated in social settings and are more likely to promote themselves in groups. They are also better able to handle difficult or awkward people.

MTQ Interpretive Information

The following pages provide general descriptions of the characteristics of people scoring above average, around the average and below average on each scale. The descriptions relate to those in the lower 16% (stems 1-2-3), the middle 68% (stems 4-5-6-7) and the top 16% (stems 8-9-10) of the adult working population.

Each description attempts to capture the typical and distinctive characteristics of people in each group. However, there will be considerable variation within each of these groups.

For example, those with very low or high scores (e.g., stems of 1 or 10) will tend to show more extreme or pronounced patterns of the characteristics described for their respective groups (i.e. the 1-2-3 or 8-9-10 groups).

Similarly, there will be variation between those with stems of 4 and those with stems of 7, the former tending to show a balance of characteristics more like that of the low scoring group, and the latter more like those of the high scoring group.

The descriptions produced by the MTQ software make finer distinctions between the score levels than those given here.

The following descriptions are provided for guidance only. Users are reminded of the need to base selection criteria on an appropriate job analysis and to base selection decisions on a systematic appraisal of a range of relevant sources of information about the applicants – not solely on the results of MTQ.

Overall Mental Toughness

Stems 8-9-10

This individual has the capability to withstand a significant amount of pressure. They have confidence in their abilities and are often willing to take on demanding tasks, believing they will succeed. They can usually shrug off criticism and not take others' comments to heart. They are likely to speak their mind when working in groups and are usually comfortable in many different social and work contexts.

They are normally committed to the task in hand. They tend to be tenacious and resolute and likely to complete what they start. They can deal with unforeseen circumstances without undue stress. When problems arise, they are unlikely to give up and, typically, view such events as challenges and opportunities for personal development, rather than threats to their security.

They believe that they are in control of their life. They feel that they are responsible for their own destiny and that they are influential in their own environment. They tend to be in control of their emotions and can cope with difficult events. They are usually calm and stable under pressure.

Stems 4-5-6-7

These individuals are able to cope with most of life's challenges, although, when facing some difficult circumstances, they may feel nervous and a little threatened. They are quite confident in their abilities, but their self-belief may be affected by others' criticism. When development opportunities present themselves, they are likely to accept the challenge, although the potential for failure may concern them. They are likely to be comfortable in most social situations and will usually contribute to group activities.

They will usually achieve their goals, although they may become distracted when facing difficult circumstances. They are likely to feel in control in most situations and feel they have some power to influence what goes on around them. However, they may occasionally feel that events overtake them.

Under normal circumstances, they are in control of their emotions. They tend to be fairly calm and stable but they may, on occasions, feel anxious and worried.

Stens 1-2-3

These individuals may find it difficult to cope with stressful and really demanding environments and, on some occasions, suffer from a lack of self-belief. They may find it hard to deal with criticisms and will probably take others' comments too much to heart. In addition, they may be overly self-critical at times. They may not be willing to push themselves forward enough, possibly as a result of worrying that they will not succeed.

On occasions, they may not speak their mind, even when they feel strongly about a particular issue. They may be slightly uncomfortable in groups and they may be a little apprehensive in social settings.

When facing problems and difficult circumstances, they may feel nervous and threatened. They may avoid some challenging situations for fear of failure and hence may not take all their opportunities for personal development. They may worry about things unduly, sometimes getting problems out of perspective. Unexpected events may completely throw them on occasions.



Sten 8-9-10

These individuals will tend to feel in overall control of their lives and believe that they can make things happen. Their overall control orientation has two distinct areas: Life Control and Emotional Control.

In the workplace, they may typically be seen as unflappable and believe that they can always make a difference. However, there are occasionally situations where the organisation or events do not allow this to happen. Often, these individuals will not recognise this is occurring and will become frustrated – “knocking their heads against a brick wall” or they will simply react negatively to the obstruction.

Sten 4-5-6-7

These individuals are likely to feel in control in most situations, although they may occasionally feel that events are overtaking them. Their control orientation can be split into two distinct areas: Life Control and Emotional Control.

Typically, in the workplace, these are people who might work steadily for long periods with significant success but who will occasionally appear to reach an impasse. For the most part, they can cope with work and with life but can be worn down. The solution often lies in rebuilding their feeling of control.

Sten 1-2-3

These individuals may feel they are not really in control of their destiny but are more at the mercy of the things and the people around them. Their control orientation can be split into two distinct areas: Life Control and Emotional Control.

Typically, in the workplace, these individuals will be tense and anxious – and may demonstrate that to others. They may unsettle others around them if their anxiety takes over. They may often undervalue their contribution to the organisation and dismiss their achievements

Life Control

Sten 8-9-10

They will normally feel that they can have a major influence on their environment. They rarely feel that they are just 'going through the motions', believing that what they do makes a real difference.

Sten 4-5-6-7

They believe that what they do will make a difference much of the time, but may, on occasions, see themselves as "going through the motions".

Sten 1-2-3

They may not believe what they do really makes a difference, sometimes feeling that they are simply "going through the motions".

Emotional Control

Sten 8,9,10

They are not prone to undue worrying and tend to be able to control their anxieties. They tend to be poised and are unlikely to "lose their cool", even in stressful situations. They may not show their true feelings to other people.

Sten 4-5-6-7

Whilst they may worry about important aspects of their lives, it is not usually taken out of proportion. They will normally remain cool, calm and collected but from time to time they may have difficulty in controlling their emotions.

Sten 1-2-3

They are quite anxious individuals and may worry unduly. They may often find it quite hard to relax. They may find it a little difficult to control their feelings and will reveal their emotional states to other people. They tend to be anxious and more easily upset than others.



Sten 8-9-10

These individuals will usually complete their tasks even under difficult conditions, finding different ways to motivate themselves. They will have high levels of internal resources, which allow them to sustain high levels of effort.

They are resilient and tenacious. Once these people have begun a task, they will usually see it through to the end, tending to deal with obstacles that are blocking the achievement of their end goal.

Typically, in the workplace, these are the kinds of people to whom you would be likely to entrust a key project. There may be occasions where the high degree of focus may mean that others may be bruised by these individuals' commitment to achieving – particularly where weaknesses are ruthlessly criticised and strengths and achievements taken for granted.

Whilst this behaviour may be acceptable for the "crisis" assignment, sometimes these individuals do this for all assignments – and may acquire a reputation for being "hard". In this circumstance, others will increasingly seek to avoid working with this individual because the experience is unpleasant.

Sten 4-5-6-7

Whilst these individuals will normally stick to their task, they may, on occasions, become distracted. This may mean that they, occasionally, do not achieve their goals in the most efficient way, or fail to reach the endpoint.

They are relatively resilient and will normally be enthusiastic and motivated, but under extreme pressure, their enthusiasm for a particular task may wax and wane. They are usually quite optimistic in outlook, believing that they will succeed.

Sten 1-2-3

These individuals may become easily diverted from the task at hand. They may find it difficult to complete tasks when facing significant adverse circumstances and may consequently give up too easily.

They may become unwilling to sustain effort if they believe that they cannot overcome the obstacles in their way. In general, they may find it hard to summon up enthusiasm for some tasks.

In the workplace, this may manifest itself in uncompleted tasks and increasing levels of stress where individuals become more and more de-motivated - particularly when the unexpected happens. They may “stop in their tracks” and may not seek help or support.

These individuals may offer apparently plausible excuses for why things don’t happen – they will overemphasise the negatives of a situation. They can convince themselves that something is not achievable – when it is achievable.

Goal Orientation

Sten 8,9,10

These individuals are very goal orientated. When taking on tasks and activities they will have a good idea of what a successful outcome will be. These are an important source of motivation for them – they can visualise success and often imagine what that success feels like. Generally, this person likes to know what is expected of them.

Sten 4-5-6-7

This person is fairly comfortable working towards goals and targets, and will sometimes identify these for themselves. Generally, they like to know what’s expected of them.

Sometimes goals provide a source of motivation for them. They can visualise success and often imagine what that success feels like. At other times, they may feel they are too stretching and their motivation may suffer. They may hesitate at times when asked to set goals.

Sten 1-2-3

These individuals can often feel intimidated by the pressure that working to goals might bring. When taking on tasks and activities they may have a good idea of what a successful outcome will be but they may also visualise too readily the problems associated with achieving the goal and especially with the consequences of not achieving the goal.

Working to goals can demotivate them, especially where they feel that they need support or they feel it is not achievable. They may more readily identify why a goal cannot be achieved rather than how it can be achieved.

Achievement Orientation

Sten 8,9,10

These individuals will generally do whatever it takes to achieve their goals, whether they are set by themselves or by others. They get great satisfaction from completing tasks.

They will often work hard and will not be easily distracted from their goals, even to the point of being self-sacrificing to achieve those goals. Others are likely to see them as conscientiousness and reliable even when they have a lot of things to do.

Sten 4-5-6-7

This individual will generally make an effort to achieve their goals, whether they are set by themselves or by others. However, they can also give up more easily than many, especially when tired or facing too many setbacks and too much pressure.

They will not be easily distracted from their goals although this can happen. Others are likely to see this person as reasonably conscientious and reliable. They tend to like being seen as committed and try to be tenacious.

Pressure and setbacks can, on occasion, stop them from achieving - sometimes when they are tired. They are capable of maintaining reasonable levels of mental efforts for moderate lengths of time.

Sten 1-2-3

This individual will generally give up more easily than most when given tasks and activities, especially where there are setbacks or fairly high levels of pressure.

They may find it difficult to maintain concentration and to maintain mental concentration for more than a short period. They can often feel tired after a moderate amount of effort.

Achieving things is unlikely to be a major source of satisfaction for this person.



Stens 8-9-10

These individuals will tend to see a challenge as an opportunity rather than a threat, often using it as a way to achieve personal development.

They are not intimidated by changes in their routine and may be actively drawn to fast-moving, challenging environments. They will tend to be “quick on their feet”, having an ability to quickly deal with unexpected events.

They may become quickly bored by repetitive tasks, becoming frustrated by what they see as mundane. They will probably appreciate an unstructured environment that allows them scope to be flexible.

Examples in the workplace might include taking on too many tasks or projects because each one seems interesting. In turn, this might mean that some work is not completed properly or is forgotten.

Sten 4-5-6-7

These individuals will be able to cope effectively with most of life's challenges and may use these as a way of enhancing their personal development. They may at times seek "change for change's sake", but are reasonably accepting of a degree of routine.

They will be most comfortable in an environment that provides them with a balance of predictability and flexibility, but they will usually be able to react quickly to the unexpected when necessary.

Occasionally, these individuals may take on more challenges than they can handle, which might mean that they struggle to complete tasks assigned to them.

Sten 1-2-3

These individuals may feel a little daunted when facing challenging situations. They will tend to be uncomfortable in unstable environments and are likely to try to minimise their exposure to change.

They may prefer to work with established routines and they will probably perform best in this type of environment. They have quite a strong preference for the predictable over the unpredictable and may be quite slow to react to unexpected changes.

Typically, in the workplace, this might mean that the individual is reluctant to take on new work or challenges, particularly where it upsets the status quo. This response can be seen as obstructive.

Risk Orientation

Sten 8,9,10

These individuals enjoy a challenge. They are prepared to try new things, carry out new activities, meet new people, etc. especially when it exposes them to new and different experiences.

They are quite happy to take risks and attempt things that others may find too challenging. Things that might scare them or others, don't stop this individual trying them. They are alert to opportunities and will try them when they come along sometimes taking on too many.

Easily bored with routine.

Sten 4-5-6-7

This individual will often deal well with challenge, change and variety when it exposes them to new and different experiences. However, they will also appreciate a significant amount of stability in their lives and their work.

Too much change and too many setbacks might wear them out and they may retreat into their comfort zone. They can often just as easily see the threat as well as the opportunity in a situation.

Sten 1-2-3

These individuals prefer to live and work in a stable and predictable environment. Challenge, change and variety of most types can be unsettling. They prefer to operate within their comfort zone. If told something is difficult or impossible, they will accept that and may avoid doing it.

This individual is likely to avoid most forms of risk even when it might be needed to achieve something. Often identifying the threat long before they might see opportunity.

Learning Orientation

Sten 8,9,10

These individuals are likely to respond positively to challenge, change and opportunity because these provide an opportunity for personal development – acquiring new knowledge, skills, etc. They will often welcome these and can look forward to, and even volunteer for, changes in their routines and to new experiences.

They adapt well to unexpected changes. Although these may carry a threat, they will worry less than most about this and they are equally likely to see opportunity in these challenges.

In reviewing setbacks and failures, they are likely to extract the learning to be gained from these. They may also respond by wanting to try again where others will want to walk away.

Sten 4-5-6-7

These individuals respond positively some of the time to challenge, change and opportunity. Although they will be likely to see opportunity in these challenges, this individual will be just as aware that they carry a threat. They might see the threat as more significant than the opportunity in many situations.

They might not always recognise the lessons to be learned from a setback, finding the experience to be unpleasant. Major setbacks might throw them and they might need time to recover.

Sten 1-2-3

This individual is more likely to see the threat and the downsides than they would the opportunity in experiences that bring challenge, change and variety.

Where they are exposed to change and where things go wrong, there are difficulties or there are setbacks they are more likely to feel uncomfortable about the consequences. This individual's preference would be to not do it again. The learning might be not to expose yourself again, rather than identifying what positive messages can emerge.



Sten 8-9-10

These individuals have high levels of self-confidence and are self-assured. Typically, in the workplace, these are seen as high achievers and will often succeed where others will give up or fail - but they may “go for it” when this is not really warranted. They can be determined to try to succeed even when the task is unachievable.

Sten 4-5-6-7

These individuals are reasonably self-assured, having moderate levels of self-confidence. Typically, these are people who can be relied upon to deliver satisfactorily most of the time. However, if subjected to a run of setbacks, their confidence and inner belief will diminish – and they may underperform even though they clearly still possess the ability.

Sten 1-2-3

These individuals are not particularly confident and may lack a degree of self-belief. Often, in the workplace, these will be people with skills and qualities who underachieve and will avoid putting themselves forward for tasks and responsibility.

They may blindly carry out work to the issued instruction but will not always communicate problems along the way, which might mean that the work will not be completed satisfactorily. They may wait to be told what to do next.

Confidence in Abilities

Sten 8-9-10

These individuals will typically have the self-belief to attempt tasks that may be considered too difficult by individuals with similar abilities but lower confidence. They have a genuine feeling that they are a worthwhile person. They will tend to accept new and difficult assignments and will expect to be successful. They have a generally positive view of life and don't allow mistakes to get them down.

Sten 4-5-6-7

These individuals will usually have the self-belief to attempt most tasks but may, on occasions, fail to tackle challenges they are in reality capable of handling. They will normally believe that things will work out in the end, but they may become overly self-critical at times, allowing mistakes to prey on their mind.

Sten 1,2,3

These individuals lack a degree of confidence in their own abilities. They may often expect things to go wrong and this may lead them to avoid difficult tasks. Mistakes may be taken out of proportion, worrying about them for a considerable period.

They may tend to be overly self-critical, allowing negative self-talk to dominate their thoughts.

Interpersonal Confidence

Sten 8,9,10

These individuals are likely to speak out in groups and feel sufficiently confident to argue with others when they feel they are in the right. In general, they will speak their mind and will be willing to take charge of the situation if they feel this is appropriate. They will tend to make their presence felt.

Sten 4-5-6-7

These individuals will tend to feel comfortable in groups, but may not always speak their mind when they have something to say. They will sometimes be willing to take charge of a situation, but on some occasions, they may fail to behave proactively. Normally, they will play a significant role when working with other people.

Sten 1-2-3

These individuals may be slightly intimidated when working in groups and will sometimes back down in arguments, even when they believe strongly in something. They will not seek to take the lead, preferring a more "back-seat" role. This may mean that their skills and ideas are not fully appreciated by others.

Mental Toughness - Typical Behaviours

The tables below show typical behaviours which may be observed at the high (8-10) and low (1-3) end of the spectrum for each scale. They prove useful for preparation for feedback and discussion.



Measures how we deal with complexity and multitasking, particularly when others are watching us. This scale has two component sub-scales:

Emotional Control

Measures the extent to which we control our anxieties and our emotions and reveal our emotional states to others.

Lower scores	Higher scores
Feel things happen to them. Show emotions when provoked or challenged. Anxious. Show a reaction when criticised. Show anger or annoyance when things don't go their way. Show discomfort when others "have a go at them". Deal poorly with provocation. Respond poorly to poor marks or the prospect of poor performance.	Feel they shape what happens. Good at controlling emotions. Difficult to provoke or annoy. Do not appear anxious. Impassive when others make comments which could upset or annoy. Can be insensitive to others remarks.

Life Control

A measure of self-worth. Indicates the extent to which we believe we shape what happens to us...or the other way around.

Lower scores	Higher scores
Believe things happen to them. Find it hard to do more than one thing at a time. Will tend to respond to the last person who pressures them. Freezes when overloaded. Can feel stretched with modest workloads – poor at time management. Will tend to blame outside factors for preventing success. May panic when given assignments.	Believe they can make a difference. Comfortable when asked to do several things at a time. Good at planning and time management. Good at prioritising. Prepared to work hard to clear blockages. Happy to take on multiple commitments and know how to deal with them. Tend to see others as problems...which can be handled.



Measures how we respond to working towards specific goals and targets.

Goal Orientation – Making promises

Lower scores	Higher scores
Intimidated by goals and measures. May feel inadequate or “stupid” when asked to do something. Will include terms such as “if...” and “but...” in their response to be asked to do something. May lack a sense of purpose – they can think “win-lose”. Goals appear overpowering. May resent the imposition of goals and targets. More likely to be late for things. Find reasons to miss the target. “I can’t do...Maths”. May try self-sabotage to get out of doing something. Will default to a life experience which provides an excuse to blame someone else for failure – “I couldn’t do this because my parents...”.	Like goals and measures – these describe what success looks like. Goals are translated in their heads into something achievable. Tend to be more objective about things. Like the repeated opportunity to measure and prove themselves. Accept responsibility. Set high standards for self and others. Like being judged or assessed. Won’t let others down. May deliver too quickly at times. Have a sense of purpose – will think “win-win”. Like ownership, acceptance and responsibility. Like being judged or assessed. Like the objectivity of goals and measures – avoids being subject to others opinions.

Achievement Orientation – Keeping Promises

Lower scores	Higher scores
Unwilling to make an effort or give up something less important. Allow themselves to be easily distracted. Adopt a minimalist approach – will do the absolute minimum. Will skip meetings or classes. More likely to be late for things. Attendance can be poor. Find reasons to miss the target. “I can’t do...Maths” May try self-sabotage to get out of doing something. Will default to a life experience which provides an excuse to blame someone else for failure – “I couldn’t do this because my parents...” Can feel unlucky – it's not my day. Find working to a goal stressful.	Will break things down into manageable chunks. Prepared to do what it takes - Will work long and hard if needed. Maintain focus. Diligent about projects – deliver on time. Tenacious. Will prioritise effort & activities. Will do things even if they don’t like it. (hyper-) Active. May overachieve (may overwork too). May deliver too quickly at times. Have a sense of purpose – will often think “win-win”. Have a strong sense of conscientiousness. Like celebrating success – own as well as others successes. Find working to a goal exhilarating.



Measures how we see challenge and change. Do we perceive it is an opportunity...even exciting? Or do we see it as a threat?

Risk Orientation – attitude towards change and new experiences

Lower scores	Higher scores
Don't like sudden changes. Don't like shocks. Fear of failure. Avoid effort. Intimidated by challenges. Dislike being in new situations – new colleagues, new bosses, new premises etc. Prefer routine. Avoid risk (particularly, of failure). Uncomfortable with competitive settings. Worry about the views of others.	Like challenge. Easily bored – will seek change. Provoke change. Like problem-solving. Work hard. Happy to commit to projects, studies etc. Volunteer self and others for projects. Enjoy competition and show it. Not always be content with daily life & routines. “Addicted” to adrenalin. May have little regard for the impact of their ideas or activities on others.

Learning Orientation – good and bad

Lower scores	Higher scores
Tend to achieve minimum standards. Respond poorly to competitive people. See failure and setback as terminal. Poor or negative outcomes switch them off from learning. Stressful situations and failure make them more likely to avoid risk again. May take things out of perspective.	See the positive in most outcomes. Enjoy learning. Motivated to apply what they know to the next challenge. Aspirational - would like to have another go and do it better next time. Can be competitive.



Measures the extent to which we have the self-belief to see through to a conclusion difficult task which can be beset with setbacks. This scale has two component subscales:

Confidence in Abilities

A measure of self-esteem, identifying the extent to which you feel worthwhile and in need of external validation.

Low scores	High scores
Low self-belief. Not confident that they know your subject matter even when they do. Produce minimal responses when asked. Will be reluctant to express a view in discussion or debate. Will be reluctant to ask questions “in case it makes me look stupid”. Reluctant to do presentations or oral work. Inner belief missing - need others to build that. Unsure whether they have grasped a subject or not - feel you are still missing something.	Can believe they are right...even when they are wrong. Little or no need for external validation. Happy to ask questions. Happy to provide full responses to questions and in exams.

Interpersonal Confidence

Measures the extent to which we are prepared to assert ourselves and our preparedness to deal with challenge or ridicule.

Low scores	High scores
Easily intimidated. Won't express themselves in class/debate even when they know they are right. Lack the confidence to express what they know in writing – will understate a position. Won't ask questions– low engagement. Will accept criticism and ridicule even when not warranted. Will back down quickly when challenged. Will allow others to dominate debates – even when they are more knowledgeable. Will have difficulty dealing with assertive people.	Will stand their ground. Will face down criticism etc. Will easily engage in class and group activity. Will use this quality to argue down others more knowledgeable. Can be aggressive.

The Independent Evidence

AQR International and Professor Clough regularly work with academic researchers in Universities all over the world in examining the model and its application in a wide range of settings. This is important – the MTQ48 is now recognised as a high quality and well-evidenced measure. Two universities; the University of Western Ontario in Canada and the University of Basel in Switzerland have carried out independent factor analyses and confirm the reliability of the measure.

There are now more than 40 research papers on MTQ48 published in peer-reviewed journals - many can be found on www.aqrinternational.co.uk.

In 2008 and 2010, two major studies, one in Canada and one in Italy, provided some unique and valuable support for the MTQ48 model and measure.

University of Western Ontario 2008

Mental Toughness study on monozygotic and dizygotic twins

Vanessa A. Horsburgh, Julie Aitken Schermer, Livia Veselka, Philip A. Vernon

The researchers carried out a study on a significant sample of monozygotic (identical) and dizygotic (non-identical twins). These were separated at birth and thus provided an opportunity to assess the impact of environmental factors versus genetic factors.

The team also carried out an independent factor analysis. The study found:

- Peter Clough's model was reliable and valid.
- The 4Cs – the 4 scales –through independent factor analysis.
- It was also suggested that:
 - There is a genetic component in 2 scales – Challenge and Confidence. Some people are born with higher (or lower) levels of mental toughness in terms of those scales.
 - It may be more of a trait than previously thought. The researchers queried to what extent it was possible to change the level of mental toughness.

These behavioural genetic studies indicated that individual differences in mental toughness may be largely attributable to genetic and environmental aspects. At that point, no study had investigated neuro-anatomical links to mental toughness. That changed in 2010.

University of Lincoln

Dr Lee Crust at the University of Lincoln has examined the relationship between Mental Toughness, emotional intelligence and affect intensity.

Affect intensity refers to the extent to which you sense others emotions. Previously, it was thought that the mentally tough may be less emotionally intelligent and that they were in some way insensitive to other people's emotions.

Crust's research has shown that the opposite is more likely. The Mentally Tough are as emotionally literate as anyone else. Mental Toughness correlates positively with emotional intelligence. Evidence has swayed the argument around the other way, discounting the earlier hypothesis.

University of Basel

The team at the University of Basel is one of the most active. They have published several peer-reviewed papers in recent times and are continuing to carry out a huge amount of research on mental toughness.

The research team specialise in adolescent behaviour and wellbeing. Similar to the team at the University of Western Ontario, they carried out an independent factor analysis of the MTQ48 before they used it. They too have independently confirmed that it is a reliable and valid measure.

The research at the University of Basel has shown that there is a relationship between mental toughness and the ability to deal with anxiety. This does not mean that they do not experience anxiety, but that they deal with it better than the mentally sensitive.

Further research from the team showed a link between mental toughness and the ability to sleep soundly. It is well established that the inability to sleep can have an impact on an individual's performance and wellbeing.

Using an experimental group and a control group, the researchers examined the effect of exercise on a large group of young people. They hypothesised that exercise would tire young people and therefore, they would sleep better. The control group did not participate in any particular amount of exercise. Both groups completed the mental toughness questionnaire.

Results showed that exercise had little effect on the ability to sleep, suggesting that if a young person is anxious or worried, then they will remain anxious and worried and potentially sleepless even if they are physically tired.

However, the research showed a clear relationship between the ability to sleep and the individual's level of mental toughness in both the experimental and control groups. Thus, suggesting a connection between mental toughness and wellbeing.

More recently, the research team have carried out a major longitudinal study using over 800 students in their final year of a vocational training programme. This was the most stressful part of the three-year course of study as students approached their final examinations.

Unsurprisingly, the research found that the mentally tough students dealt better with the stress of the final year than did the mentally sensitive students. They also found that the more mentally tough students improved their mental toughness, and the mentally sensitive students become more mentally sensitive (measured by the MTQ48) over the 10 months of the study.

The study aimed to examine the differences in responses between people with high and low levels of mental toughness. No specific mental toughness or resilient development interventions were provided. The findings support the notion that left to their own devices, mentally tough people deal better with stressors and pressures, and they developed their mental toughness as they learned from all of their experiences.

This study has helped to answer the question, ‘Do people succeed because they are mentally tough or do they develop the mental toughness to deal with the pressure they find when they get there?’

The answer appears to be both. Mental Toughness will give you an advantage and the mentally tough tend to respond to whatever they encounter by learning from the experience – developing their mental toughness even further.

This is supported by research conducted by Dr David Marchant and Professor Peter Clough which investigated the relationship between Mental Toughness, age and level in the organisation.

Universities of Parma and Modena & Reggio

MRI Brain Scan study

Samuel Newton, Peita Bruen, Francesca Benuzzi, Simona Gardini, Alexa Huber, Fausta Lui, Annalena Venneri and Peter Clough

MRI images were obtained from 80 participants. Voxel-based morphometry (neuroimaging analysis) was used to regress MTQ48 total scores against the grey matter density values extracted from the participants’ 3D MRI brain images.

The study showed a clear link between scores on all four mental toughness scales and higher grey matter density in specific parts of the brain. These can be summarised as follows:

MTQ48 Scale	Where the study showed a correlation in the brain...	What does this mean...
CONFIDENCE • IN ABILITIES • INTERPERSONAL	Significant correlation with: • Temporal function - associated with spatial awareness. • Occipital function – associated with mental imagery. • Precuneus – associated with a strong sense of “me” and agency (“can do”).	In combination will produce a sense of competence attributable to self. This may lead to an increase in confidence.
CONTROL • OF EMOTION	Significant correlation with: • Precuneus – associated with a strong sense of “me” and agency (“can do”). • Inferior parietal lobule – linked to emotion; perspective-taking of social emotions and processing of happiness specific information.	These, linked to the regulation of emotion and recognition of the emotion of happiness, together with the feeling of agency could explain good control over emotions.
CONTROL • OF LIFE (a broader more encompassing concept)	Correlates with: • Inferior parietal lobule – linked to emotion; perspective-taking of social emotions and processing of happiness specific information.	In combination will produce this sense of life control – particularly good motor skills, spatial awareness and the ability to deal with anxiety and manage one’s emotions.

	• Frontal areas – linked to the processing of motor skills. • Temporal function – associated with spatial awareness. • Occipital function – associated with mental imagery. • Anterior cingulate – control over anxiety.	
CHALLENGE	Significant positive correlation with: • Fusiform gyrus – responsible for the visual word form (written not spoken) and semantic processing and language comprehension.	These play a part in “self-talk” which is known to be a difference between elite and non-elite athletes. “Self-talk” may be the process used to cope with change and to view it as an opportunity rather than a threat.
COMMITMENT	Positive correlation with: Precuneus - associated with a strong sense of “me” and agency (“can do”). Anterior cingulate gyrus – control over anxiety.	High levels of anxiety can be distressing and will deter people from activities which cause this. If anxiety is seen as a facilitator/driver then it won’t deter individuals leading to what is seen as commitment.

In Summary

Mental toughness correlates positively with several brain regions:

PRECUNEUS

- Pervades all components of mental toughness. This suggests that the first-person perspective and the sense of agency (“I can do”) are major factors in mental toughness.
- Linked to an increased sense of responsibility for one’s own life as well as efficacy and coping.

OCCIPITAL AREA

- Increased use of mental imagery and spatial awareness.
- An increased sense of competence.



In Summary, both the Canadian Twins study and the Italian Brain Scan studies indicate that:

- ***Mental toughness is a personality trait (with state characteristics).***
- ***Mental toughness has a basis in biology.***
- ***Mental toughness has a hereditary component.***

Introduction to Psychometrics

A Psychometric tool is an instrument that seeks to make predictions about some aspect of the person completing it. It is important to understand that tests:

- Are statistical tools - with all the limitations this might bring.
- May be capable of interpretation - output needs to be checked carefully.
- Are very dependent on good design.

Personality tests deal with habitual behaviour - how one deals with situations. These tests fall into two distinct categories - ipsative and normative. The critical difference between the two types of test is that they are scored on different scales. **Normative tests** measure person against person, while **ipsative tests** are geared towards identifying the relative strength of individual characteristics within each person.

It is important to understand the concept of norms to be able to use and to explain the MTQ48. This is because it is a normative measure.

This simply means that an individual's results (e.g. from completing the questionnaire) are compared with the results achieved by a "norm" group.

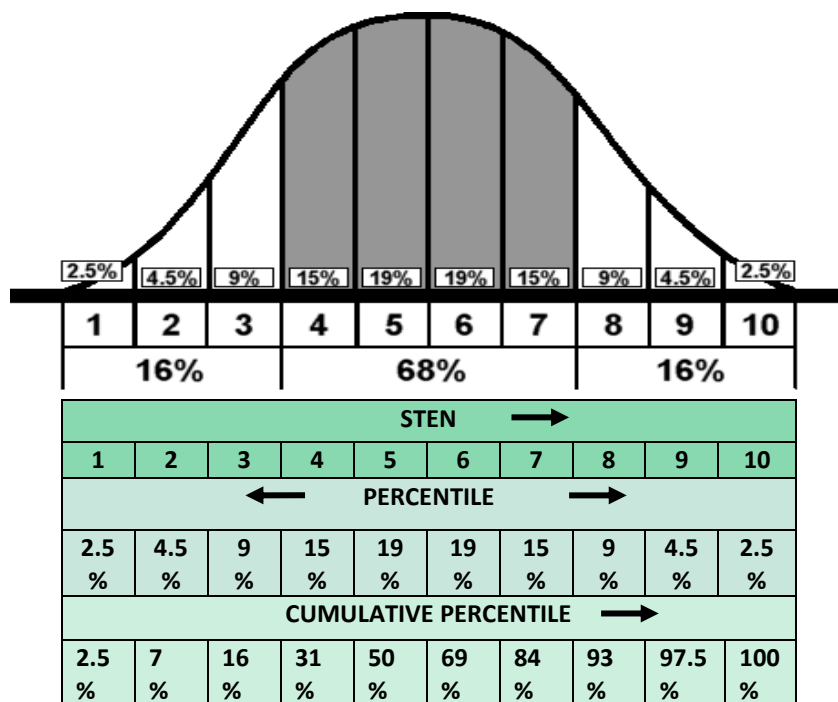
This enables us to take an individual's score and compare it with a particular population. We are then able to conclude, e.g., that an individual's mental toughness score means that they have higher or lower mental toughness than a particular group of people. Please note that this is not the same as concluding that a particular individual is good or bad.

Tests such as MTQ are constructed, in part, by administering the tests to a large representative sample of people. This gives us the "norm" group. Different scoring systems are used in psychometric testing. MTQ uses two of the most common forms - percentiles and stens. They are inter-related.

The Normal Distribution or Bell Curve

In nature, many things are found to be normally distributed. This is represented by a bell curve illustrated below. In psychometrics, people's abilities and qualities are also found to be distributed amongst the population in the same way.

Research shows that mental toughness appears to be distributed in the same pattern.



Most personality scales are bi-polar with each end of the scale representing alternatives or opposites. Consequently, the straight percentile scale should apply.

Percentiles

A percentile score describes the individual's score in relation to a percentage of a population. For instance, if someone's score comes at the 75th percentile then 75 percent of the members of a group (population) score below this point. The 50th percentile is the same as the median (which is one of the common definitions of average).

If you examine the bell curve, beneath it, you will find the percentile scores which equate to different positions along the curve.

Stens

This is a standardised scoring system used in many psychometric measures. MTQ48 uses Stens to report scores. Technically, this converts the respondent's actual or raw scores into a scale with a mean of 5.5 and a standard deviation of 2. In lay person's language, this takes the area under the bell curve or the normal distribution and divides it into 10 equal parts. This can be related to the percentile scores.

If you examine the bell curve above you will find that, for instance, sten 1 represents 2.5% of the population. However, sten 5 represents 19% of the population. Stens make it easier to explain and interpret test results. MTQ48 presents its output data on graphs using sten scales.

Measuring Mental Toughness and its Applications

The MTQ48 was created to meet a very tangible need in the occupational world. It sought to respond to four questions increasingly at the front of the minds of most senior managers:

- *Why is it some people handle stressors, pressure and challenge well and others do not?*
- *Can we measure where people have strengths and weaknesses in these matters?*
- *Can we do something to improve “mental toughness” in people to improve their performance?*
- *Can we evaluate the effectiveness of interventions which are all claimed to be effective?*

More than eight years of careful and innovative research enabled Peter Clough and Keith Earle to emerge with a tool that allowed these questions, and others, to be answered positively and effectively.

Initially, the concept and the measure was applied mainly in the occupational world, looking at developing employees and managers to perform effectively, especially in challenging environments (e.g. emergency services,) and in adverse circumstances, (e.g. the 2008/9 economic downturn). These are obvious applications for mental toughness and MTQ48.

The MTQ48 is a 48-item questionnaire which takes about 10-minutes to complete. It is:

- Extremely easy to use. The questionnaire uses a 5-point Likert scale to capture responses. The test is available in online format or paper and pencil format.
- Accessible. The reading age for the item databank is 9+ years of age. Language in the reports is such that the reports can be read and understood by those who are not trained psychologists.
- Quick. Test results are processed immediately online and expert reports are immediately available.
- Cost-effective. The price structure enables users to be relaxed about frequent use of the measure.
- User-friendly reports. Several expert reports are available to the test user.
- Reliable. A technical term to indicate whether MTQ measures mental toughness consistently. The reliability score for MTQ overall is 0.90, which is generally acknowledged as high.
- Valid. Another key technical term which indicates whether it measures what it claims to measure. The concurrent validity score for MTQ48 overall and its scales range from 0.25 to 0.42, which again is generally acknowledged as high.

This level of reliability and validity means that MTQ48 is widely accepted as a high-quality measure. In 2008, the University of Western Ontario carried out an independent review of MTQ48 that confirmed the MTQ48 description of mental toughness is appropriate and that the measure is valid. This was published in New Scientist in Sept 2009.

- Normative. This means that test results for an individual are compared to test results for a relevant norm group which represents the population at large. It is designed to operate in a normative sense. This provides significant additional value for the user. This means that the measure can be used for:

- Diagnosis – identify what are the factors at play for individuals and groups in each situation.
- Evaluation – to measure progress consistently.
- Research - to assess which interventions are most effective and with which people.

- The default norm is a global norm. Since 2015, the new platform for administering the MTQ48 measure captures test data in such a way that this permits the development of local norms where this is relevant and beneficial. This will allow analysis against the global norm, and where available, the local norm.
- An effective intervention in its own right. Positive feedback to those who score above average often results in a favourable response from the recipient with little further intervention needed.

We now see mental toughness and MTQ48 used in a much wider range of applications. Mental toughness is a concept with a universal application. We now find major applications in Education, Health, Social Work, Sports & Care as well as in occupational settings. The model and measures are in use in more than 80 countries around the world.

The MTQ48 Technical manual provides a significant amount of information about the technical characteristics of the MTQ48 measure. Particularly in terms of reliability, validity and the norm group composition. The technical manual is available to download from the AQR website (www.aqrinternational.co.uk)

2017 and the emergence of a family of Mental Toughness Measures

The MTQ48 is generally described as a 6-factor model (two scales each for Control and Confidence and one for each for Commitment and Challenge). 2017 saw the completion of a major research programme to review and extend the understanding of the mental toughness concept.

Combining 15 years of carefully observed practice with academic rigour has led to a major leap forward in understanding the concept and its importance for practitioners.

Almost 100 peer-reviewed research papers, an analysis of 100s of thousands of applications and a major review over 24 months now means we have:

- An 8-factor concept.
- Improved reliability (from an already impressive level).
- A deeper understanding of the constructs and their applications.
- Confirmation that it is a universal concept.

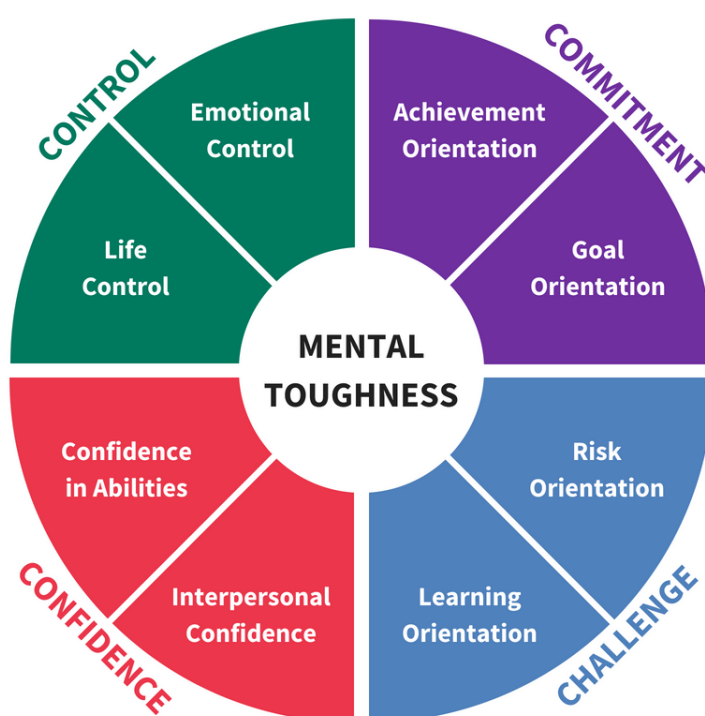
The programme was initiated by Doug Strycharczyk, CEO for AQR International who together with Professor Peter Clough (Head of Psychology, Huddersfield University) and Dr John Perry (St Mary Immaculate College, Limerick, Ireland) carried out the study.

The factors which emerged were:

Mental Toughness Construct	What this means...what does MTQ48 assess
	The 8 factors
CONTROL	<i>Life Control</i> – I really believe I can do it
	<i>Emotional Control</i> – I can manage my emotions and the emotions of others
COMMITMENT	<i>Goal Orientation</i> – I promise to do it – I like working to goals
	<i>Achievement Orientation</i> – I’ll do what it takes to keep my promises and achieve my goals
CHALLENGE	<i>Risk Orientation</i> – I will push myself – I am driven to succeed
	<i>Learning (Orientation) from Experience</i> – even setbacks are opportunities for learning
CONFIDENCE	<i>In Abilities</i> – I believe I have the ability to do it – or can acquire the ability
	<i>Interpersonal Confidence</i> – I can influence others – I can stand my ground if needed

An important product of this research was the emergence of a 68-item questionnaire which could reliably assess individuals across all 8-factors. It embraces and builds on much of what is contained in the MTQ48, although the Emotional Control scale has been reconstructed.

This measure is called MTQPLUS.



At the same time, the data gathered enabled the team to create a shortened version of a mental toughness questionnaire which reliably measures overall mental toughness and the 4 constructs – the 4Cs.

Finally, work led by Dr Kostas Papageorgiou, Psychology Department, Queens University Belfast, enabled the development of a reliable 11-item version which provides a measure of overall mental toughness.

The family of measures can be summarised as follows:

Measure	Description	Purpose
MTQ ^{Lite}	An 10-item measure which provides a reliable score for overall mental toughness.	Predominantly for research.
MTQ ^{4Cs}	A shorter (24-item) measure which provides reliable scores for: - Overall mental toughness - The 4Cs	Research. A survey tool for large-scale applications (e.g. assessing mental toughness of a whole workforce). Possibly an entry-level measure.
MTQ ⁴⁸	The original 48-item measure providing scores for: - Overall mental toughness - The 4Cs and 4Subscales/Factors	Assessing Staff – all levels. Largely used in education. Coaching.
MTQ ^{Plus}	A 63-item measure which provides scores for: - Overall mental toughness - The 4 Cs 8 scales/factors	Assessing Staff – all levels. Coaching.

Test Administration

It is imperative that individuals completing the MTQPlus are briefed properly prior to the administration. While formal instructions for completing the MTQPlus are included at the beginning of the assessment, these instructions are generic and do not brief the respondents on how the MTQPlus is being used in specific contexts as this will be different for everyone.

It is important to ensure that the candidate knows what to expect. The administrator should explain to the candidate why the test has been selected as an appropriate measure and how the data is to be used.

Candidates should be encouraged to complete the questionnaire in a quiet room, free from interruptions and distractions. This is highly important for those candidates completing the measure remotely. If working with large groups of young people, it is useful to supervise the completion. The administrator should provide the candidate with sufficient time to complete the measure.

Inevitably, candidates may wish to ask questions about some of the items. This is more common with young people than it is for mature adults. AQR International provides an alternative description for each of the items in the questionnaire which useful for dealing with questions.

Administration Options

There are options for test administration.

1. Online – This is the preferred option which provides full online instructions for ease.
2. Paper and pencil – This can be printed and completed anywhere. The data, however, needs to be entered online in order to be processed.

Test Platform

The mental toughness questionnaires are operated through a platform (www.aqrtest.com) which enables all activities including inviting candidates to complete the questionnaire, the test completion, data processing, report generation as well as database management and managing clients and sub-users. An administration online training programme (www.aqrinternational.co.uk/e-learning/admin-training) which contains bitesize tutorial videos and a user manual are available to help users to navigate the test platform.

MTQ Report Types

The Standard Versions

The mental toughness questionnaires will generate up to five different reports from the candidate data using an expert report system. Users and candidates should read the introduction to each report carefully to ensure that they use the report properly.

Development Report

This is an enhancement of the original Candidate Report. This provides the individual's scores and an explanation of what they mean, together with an indication of possible implications.

With each of the four component scales, development suggestions are provided to enable the candidate to think about modifying behaviour should the situation require this.

Assessment Report

This report provides an interpretation of the individual's scores and identifies some potential implications for the workplace. The narrative is provided for the overall measure and each of the four component scales.

With each narrative, a list of suggested questions is provided to enable a Manager to probe the area. The questions are designed to be open and to be behaviourally orientated to generate the fullest responses. They may need amending by the manager to ensure that they are appropriate to their specific situation.

Coaching Report

This report provides an interpretation of the individual's scores and identifies some of the potential implications for the workplace.

With each narrative comes a list of suggested coaching or development actions that the manager or coach can consider for application with the candidate. It is important that the candidate accepts and agrees with any action to be taken.

Distance Travelled Report

This is a comparison report based on a current and a previous assessment for an individual. This will identify areas in which an individual's sten scores have changed or remained the same after a period of time and/or a period of training and development.

This report is widely used in training, development and coaching programmes to assess differences arising from the intervention. Hence this is very valuable in ROI (return on investment) studies.



Organisation Development (or Group) Report

This report is created from data gathered from individuals who form a particular group. The report takes the form of histograms of the patterns of scores for individuals who form the selected group.

For example, that group can be a specific team, or it could be the entire management cohort of an organisation. It shows the pattern of results for each scale as a histogram of the total number of people who achieve a particular sten score within that group.

This report is useful in identifying trends and patterns within a group and may be an indicator of cultural issues within an organisation.

The Young Person's Version

The version normally used within secondary education, further education and youth work generate:

- **A Coaching Report** – reporting the scores, what they mean, and offering general coaching suggestions and suggested interview questions to explore.
- **A Development Report** - reporting the scores what they mean, and offering general development suggestions, which can be used in conjunction with the coaching report to encourage the candidate to think about modifying behaviour where required.
- **A Group Analysis report** – which creates histograms of the patterns of scores for selected groups.

The questionnaire includes a feature activated by hovering over a question which provides an additional explanation of the item where the client doesn't immediately understand the question.

It is generally not recommended that users provide copies of reports to young persons. Young persons (usually up to secondary school level) will often misunderstand reports focusing on the score rather than the explanation. It is more effective to provide verbal feedback which is correlated with other information and data.

JMTi – An Early Years Version

In response to a growing demand for an early year's version of the mental toughness questionnaire, we have developed a questionnaire that takes the form of a 360-style assessment to be completed by teachers, teaching assistants and possibly parents/guardians.

Features include:

- **Online questionnaires** based on behaviour statements.
- **Abbreviated questionnaire** (24-30 items).
- **Format designed for easy completion** by teachers/school staff who may have to complete several assessments at the same time.
- **Combined Coaching and Development Reports** reporting scores, narrative descriptions and suggestions for feedback and intervention.
- **A Group Analysis report** – which creates histograms of the patterns of scores for selected groups.



Giving and Handling Feedback

Introduction

It is generally recommended practice to provide candidates who have completed a psychometric measure with some degree of feedback on the output from the measure.

This not just a matter of “good manners”, discussing the results with the candidate provides the test administrator with an opportunity to add useful perspectives and information to the data generated.

MTQ48 and its related products are uniquely designed to facilitate providing feedback at two levels.

Firstly, one of the reports that can be automatically generated is the Development Report, which sets out to provide some degree of analysis to the candidate. This includes:

- The **candidate's** scores set out on a sten graph.
- For each scale in the test, a short narrative describing what the candidate's scores mean.

One key advantage is that it can be produced within minutes of completion of the test and enables the candidate to understand what is being examined if it is subsequently covered in interview or discussion.

For many candidates, this level of feedback may be sufficient and its promptness is usually appreciated.

Secondly, there are circumstances where more detailed feedback may be needed. MTQ can also be used in a counselling situation, where some closer discussion is needed.

Some candidates may “challenge” the output and will need a further explanation to understand the reports. Similarly, a very small number of people find the process worrying (even distressing). It is important to be able to handle this kind of situation sensitively.

Finally, many more candidates are genuinely interested in the test and the insights it can provide. Not unnaturally they will want to get the most out of participation in the exercise.

Again, MTQ has some unique features that can assist this feedback process. Amongst the most important of these are the three reports that can also be generated.

The Assessor Report offers sample interview questions to probe the candidate's results further. The Coaching Report identifies implications for behaviour or performance in the workplace and provides the manager/coach possible coaching or development suggestions. Finally, the Development Report reflects the information in the coaching report and can be used by the individual as part of their personal development.

Equally important is the comprehensive description of the MTQ scales, which is found in the Technical Manual supplied with the Installation Kit and also in the Appendix of this Step by Step Guide.

Understanding the MTQ package fully will support you in handling feedback. A few feedback suggestions are offered on the following pages.

Feedback – Good Practice

When handling feedback, it is useful to keep in mind the following few key points:

- Understand Mental Toughness – it is important to read and understand the relevant sections of the user manual and the technical manual.
- Personnel should be skilled and/or trained in handling feedback.
- MTQ is only one source of information – albeit a very important and reliable source. Good practice in people management will draw together information from several sources.
- MTQ's are self-report questionnaires. Results can vary according to the way the test is administered – hence the importance of consistent and standardised administration.
- Results can vary, to some extent, dependent on the candidate's feelings and disposition at the time of test. Results can change according to mood and circumstance.
- MTQs are normative measure. The candidate's responses are scored and then compared with the responses of a large sample of people drawn from the work place.
- Robust tests and questionnaires like the MTQ family are a much more reliable and valid means of generating information about people than almost any other method of doing so. However, they are not infallible and must be approached intelligently with caution, with understanding and with careful exploration.

Data Privacy and Confidentiality

All MTQ data must be treated with strict privacy and confidentiality. Digital data should be stored securely on password-protected devices, and any printed materials must be kept in secure locations, ensuring they are not accessible to unauthorised individuals.

MTQ data is personal and belongs to the individual. While many participants are comfortable sharing their results, others may view this information as sensitive. Therefore, it is essential to handle all data with respect and care.

It is best practice to inform participants, prior to completing the MTQ, about:

- The purpose of the assessment
- How their data will be used
- Who will have access to their results

Although participants provide consent during the registration process, reinforcing this information enhances transparency and builds trust. Clarify whether data will be shared with managers, colleagues, or used in an aggregate form for group analysis.

Group and Team Applications

In team or group settings, individual data should be handled with the same level of care. If any individual prefers that their results not be shared with others, their wishes must be respected.

During team discussions involving MTQ results:

- Ensure the environment remains respectful and non-judgmental

- Avoid comments that could cause offence or discomfort
- Encourage open, supportive dialogue, where team members feel safe to share and to listen to others' perspectives

By maintaining these standards, you help create a psychologically safe space that supports learning, development, and mutual respect.

General Preparation

Feedback should only be handled by Test Users who:

- Understand MT - they should have read and understood the relevant sections of the user manual and the technical manual.
- Are skilled and/or trained in handling feedback.

AQR International recommends that, as a minimum requirement, users complete the basic administration course. It is further recommended that where feedback and counselling will be a regular activity those test users should complete both the BPS Certificates of Competence in addition to the basic administration course.

Prior to the Feedback Session

- Plan your time to ensure that the candidate is given adequate time – do not rush the session.
- Read the relevant reports thoroughly and construct an outline plan to provide feedback.
- Identify ways of illustrating what you wish to say.
- Arrange for the feedback discussion to take place in a comfortable room that is free from distractions and interruptions.
- Make sure mobiles and phones are switched off and/or diverted.
- If possible, provide the candidate with a copy of the Development Report with sufficient time to read it before the discussion.

During the Session

- DO avoid the use of jargon – use simple everyday language.
- DON'T give results in stens – explain that the results are compared with a large norm group and use this as the framework, e.g. "Your score on...suggests that it is above average for the UK working population."
- DO provide a basic explanation of the scales as you go along.
- DO use "cautious" language. For example, results *indicate, suggest, are similar to*. Avoid being definite.
- DO check understanding regularly. Ask the candidate for views/comments.
- If challenged about a specific result, use open, behaviourally based questions to probe the area (the Assessor Report may provide some of these).
- DON'T reject a candidate's challenge or query out of hand. Ask them to restate their point differently if possible. Feedback your understanding of their point before responding. Try to isolate the point they are raising and respond specifically to that point.

- DON'T rattle through the feedback as if it were a checklist. Try to relate scales with one another.
- At the end, check that the candidate feels that all the points made have received attention (they may still be unhappy about an answer) and that they have no other points to raise.
- Always thank the candidate for their time, their effort and the data provided. Assure them that the data will be handled properly.
- DO make notes during the session.

Following the Session

- Review and draw conclusions promptly after the discussion – excessive delay can lead to forgetting key bits of information.
- Keep a written file note of conclusions and of the points raised.
- Where practical and where appropriate, call the candidate and check that they are now comfortable with the feedback.

Mental Toughness Development

It is perfectly possible to develop mental toughness or to enable mentally sensitive to respond in a more mentally tough manner when needed. Over the past 15 years, AQR International has identified a number of tools and techniques and, importantly, an underlying approach which consistently produces positive results. The mental toughness development toolkit is an array of experiential exercises which can be run with individuals and/or small and large groups. It works well with outdoor experiential exercises.

What is Mental Toughness – what can we assess and develop?



Mental toughness is a moderately plastic personality *trait* which determines in large part how individuals respond mentally to stress, pressure, opportunity and challenge. Research shows that mental toughness scores correlate closely with performance; well-being; positive behaviour and aspirations. It has a significant impact on most key outcomes in the world of work. It applies to leaders and staff, and has universal benefits.

As a concept, mental toughness embraces other well-known concepts and ideas such as resilience, grit,

mindset, learned optimism and learned pessimism, as well as most definitions of character. Research shows that mental toughness has four elements often called the 4 Cs (described earlier).

We are able to assess mental toughness in terms of these components in individuals and groups through a unique 48 item high-quality psychometric measure called MTQ48. It is normative which enables users to assess mental toughness before and after a programme of interventions. There is also a version of MTQ48 available for use with secondary school and university students.

Can we develop Mental Toughness in Individuals?

Instinctively the answer is “we can”. Sports psychologists and sports coaches would argue that they have been doing this for many years with significant evidence of success. More practically, the answer still appears to be “yes we can”.

One key question is “are we changing someone’s mental toughness? Or can we simply equip someone with tools and techniques that enable them to behave like a mentally tough person might behave?”

The answer appears to be that, where the individual wants to change or develop, it is possible to change one’s core mental toughness. We are not suggesting that anyone must develop their mental toughness. For those who see a benefit in their life or their work, there may be a good reason for developing mental toughness without necessarily becoming very mentally tough. There does seem to be some valuable advantages in life and work for those who are more mentally tough than most.

The value of the model and the MTQ48 measure is that it can help to identify which aspects of one’s mental toughness are preventing or hindering them from attaining wellbeing or leading a more positive life. Self-awareness is the key here.

How does the toolkit work?

There are two approaches to organising the exercises. One is to focus on the desired outcome – “I wish to improve my mental toughness in terms of the 4 Cs”. The other is to approach it from the perspective of “enablers”. These fall into six broad headings:

- Positive Thinking – Affirmations, Thought Stopping, Self-Talk, etc.
- Visualisation – Guided Imaging, etc.
- Anxiety Control – Controlled Breathing, Relaxation, Distraction, etc.
- Attentional Control – Dealing with Interruptions, Attention Span, etc.
- Goal Setting – SMART Goals, “Eating the Elephant”, Balancing Goals, etc.
- The MTQ48 test – Good feedback and reflection often provokes a positive response.

These all help to develop the capability to deal with stress, pressure and challenge and, where appropriate, to cope with these.

The exercises in this toolkit are organised by the 4Cs. Many can impact more than one of the 4Cs. The tools have been written so that they can be delivered to a group or coaching tools to be used in a one-to-one situation.

Using the Exercises

The start point should be an accurate and realistic assessment of the individual’s mental toughness and their potential development needs ideally based on the use of the MTQ48 measure. This enables the user to direct interventions appropriately.

One useful indicator to examine is an individual’s challenge scores. Individuals who are mentally sensitive on this scale (typically scores of 1 – 3 perhaps 4) are less open to learning than individuals with higher levels of mental toughness. They may require more attention.

Mental Toughness is developed as a result of experiential learning

- Mental toughness is learned – it is not easily taught. It is about developing a mindset. One can’t learn this just because you follow a process.
- For the Individual– they may need to be supported to persevere until they “get it”. Practice is important.
- For the Coach/Tutor – facilitation and coaching skills are important as is trialling and practising these skills.



There is nevertheless an underlying process:

Stage One - Experience

Introduce the exercise to the individual and explain its purpose.

Participants carry out the exercise and assess what difference it makes to their thinking.

Stage Two - Reflection

The absolute key to success. Get individuals to consider:

- What occurred? – What difference was made? – Did they improve performance in some way – was this beneficial?
- How did they feel? Was mood improved, did it boost confidence? Was it enjoyable? Did it make them want to do more? The key is to enable the individual to associate this feeling with their participation in the exercise.
- What did they learn? Can doing things differently be effective? Does approaching things differently work? Does being positive produces surprising results? What could they now do that they didn't think they could before? Where could they now apply this learning to other important areas? – especially at work!

Stage Three – Purposeful Practice

Now the hard bit. Practice what you have learned until it becomes a habit. Then it becomes easier and the benefits will flow.

Coaches' Guidance

Prior to running a mental toughness development, we suggest that all participants are tested with MTQ.

Testing or training as MTQ practitioners can be arranged through AQR. Ongoing use of the measure is delivered via an online assessment platform with a metering system. Pricing for training and meters are available on request.

As part of the preparation for a mental toughness development session, the MTQ Development Report should be printed in respect of each delegate.

Please examine the results of each individual carefully prior to the programme. People with low scores across each of the scales may need some 1:1 support and including them in a programme of this nature could have a detrimental effect on them. This needs to be considered in the context of the group. For example, for a person falling in a mentally sensitive band (1-3) where all other people in that particular cohort are high (7-10s), to work as a whole group would be discouraged.

This is designed to be a flexible toolkit of exercises which can be adapted or applied in a variety of ways. There are two sets of cue cards available in the pack. The coaching cards have been designed for use in one-to-one coaching sessions. The group cue cards have been designed for use by coaching staff when working with a group of individuals.

Many of the exercises can be run several times in different ways, enabling focus on a specific outcome.

Each exercise is supported with a cue card which provides full instructions for use, equipment required and guidance for managing reflection and learning.

Number Grid Concentration Exercise



Running the exercise - Paper and pencil version- run in up to 4 cycles, enabling learning from each cycle to be applied to the next attempt.

1. You need a stopwatch (on your smart phone) and copies of the number grid to enable attendees to complete it 4 times. Students need a pen or pencil.
2. Explain that students will do an exercise which will "test" their ability to focus. They must also follow your instructions closely, and must not cheat.
3. Issue a sheet to each person (say, sheet with Grids A and B). Ask to place the sheet in front of them with Grid B facing upwards.
4. Explain that:

When I say "GO" you can turn the sheet over and work on the Number Grid which is now facing up (Grid A). This avoids people "cheating" by looking ahead.

Turning the sheet over, you need to find 00, cross it off, then 1, cross it off and so on. You must do this strictly in sequence – no cheating – no skipping numbers.

You have 90 seconds. The last number crossed off will obviously be your score.

5. Run one round. Shout "Stop" when time is up. You can use different time intervals - up to 3 minutes works.

Teacher Review

Ask how many scored more than 25 (rare), more than 20, more than 15 and less than 15. Most first time scores are around the 12 – 18 mark.

Ask the students with the highest score how they achieved that. Similarly with the students with the lowest score ask what they found difficult or challenging.

Encourage short discussion so that all learn ideas about improving their scores.

6. Re-run the exercise three more times, each time challenge students to improve their scores.

Teacher Review – after each round

Ask how many have improved and how many have worse scores.

Congratulate those who have improved their scores and ask them to share "What did you do this time that you didn't do before". This shows learning.

Over time everyone should improve on their original score and will be concentrating like mad.

Encourage students to:

- Reflect on what they have done and what they have learned
- Identify what they can do to improve concentration
- Think how they can apply this to coursework, study, reading, etc.



Number Grid Concentration Exercise



Background

This is an exercise which is engaging and illustrates the value of repeated practice as well as concentration. It involves everyone in debate. It has the advantage that it has a built in scoring mechanism which enables progression to be assessed.

Improving Attention Control i.e. the ability to focus longer and to focus better can produce some of the biggest boost to productivity, learning and wellbeing. Studies show that it is possible to improve attention span from an (UK) average of 8 minutes to 45+ minutes. Not only enabling students to be more productive but it takes the stress out of such activities.

Discussion Guides:

Why do students think their score has changed (hopefully up)? Do people feel more positive and more focused?

What difference does this make for them? E.g. when reading or writing?

Why do they think concentration helps performance, wellbeing and behaviour?

Reflection will usually produce a crop of answers around three themes:

1. Techniques – often to do with organising themselves
2. Setting goals and targets and steadily working towards them.
3. Concentrating and blocking out distractions...By the 4th cycle students will often be so focused on the exercise that they fail to notice what anyone else is doing. This illustrates that improving focus can be learned and that most can work it out from themselves or by talking to others. This is experiential learning.

Support Materials & Resources

Pre-printed A4 sheets specially designed for this with double sided grids are available in pads of 50 from www.aqr.co.uk

An on-line version is available on <http://www.salticid.com/concentration.htm>

The grid is automatically refreshed randomly each use.

It is impossible to cheat. You can alter the dimensions of the grid to make it more difficult over time.

It assesses time taken to complete a grid, which makes it useful for developing attention span.

It is useful for students who want to practice learning how to focus better and for longer at home.



Support resources and equipment requirements are listed on each cue card.

The matrix below shows the types of interventions which can make a difference for an individual:

Level	Challenge	Commitment	Control		Confidence	
			Life Control	Emotional Control	Confidence in Abilities	Interpersonal Confidence
Low MT	Attentional Control Positive Thinking Goal Setting Time Management	Positive Thinking Attentional Control Goal Setting Time Management Visualisation Anxiety Control Procrastination	Attentional Control Goal Setting Time Management Visualisation Assertiveness Procrastination	Positive Thinking Anxiety Control Fatigue Management	Positive Thinking Time Management Visualisation Fatigue Management	Positive Thinking Anxiety Control Visualisation Assertiveness
Low & High MT	Controlled Breathing Guided Imaging Progressive Muscular Relaxation Controlled Breathing Self-Hypnosis Fatigue Management Dealing with Procrastination Mindfulness					
High MT	Delegation Empowering Coaching Listening Planning & Organising	Understanding what motivates others – it's not always goals and targets Listening Coaching & Delegation Team Working	Delegation Being aware of others' qualities	Opening up People find this kind of person difficult to read Body language	Learning to say "no" Being aware of the qualities of others Team Working	Listening Team Working Presentation Skills Body Language Transactional Analysis

Mental Toughness Development

The following pages show typical issues arising under each of the mental toughness factors and for each, a sample intervention is offered. There will be a range of interventions that would work for each issue:



Control

▪ Take a positive view of yourself	List 5 things you have been successful at and keep it with you.
▪ Don't worry about what you can't control	Unexpected events are outside of your control but you can make a list of possible unexpected events and develop strategies for dealing with them.
▪ Setbacks are normal occurrences	Examine setbacks and in hindsight identify causes. Use this for learning – identify what you would now do differently.
▪ Remind yourself that what you do does matter	Use visualisation to 'see' yourself as in control and making a difference.
▪ Learn to deal with your anxiousness or nervousness	Practice controlled breathing in moments of panic. Also, concentrate on one thing at a time, don't let yourself become overwhelmed.
▪ Have a compassionate attitude towards your fears and weaknesses	But don't use them as an excuse. Identify which you can work on and resolve and work towards maximising your strengths.
▪ Learn to deal with multiple tasks	If the workload gets too much either delegate or get someone to help you plan your workload. Remember work SMARTER!
▪ Recognise your need to recharge your batteries	Acknowledge your limitations and work around them. For example, identify which time of the day do you work best and build this into your daily planning.



Commitment

▪ Don't give up too early	Give yourself time out to refocus after setbacks but don't let them stop you from achieving your goal. Asking others for help or coaching might help.
▪ Think optimistically	For example, SWOT analysis, 5 Whys, mind mapping.
▪ Develop a clear motivating plan for each task	'If you think you can – you can. If you think you can't – you won't.
▪ Identify what motivates you	Incorporate this into your planning of a task – either as a reward or as an integral part of the task.
▪ Break the task down into manageable chunks	Group similar tasks together and set yourself short term, long term, immediate and daily goals as a way of motivating yourself.
▪ Take time out to analyse how you will achieve the task	For goals to be effective they must be specific, measurable, achievable, relevant and time-bound.



Challenge

▪ See challenge as an opportunity rather than a threat	List benefits of the new challenge, e.g. opportunity to learn new skills
▪ Accept that change is a feature of life	If you can't beat them, join them! Variety is the spice of life!
▪ Think optimistically	Focus on the positives.
▪ Increase your familiarity with change	Change your routine every so often and try new things whenever you can, e.g., make a list of all the things you've ever wanted to try – and do them!
▪ Breakdown work into more manageable chunks	Group similar tasks together. Ask for help you with this if need be.
▪ Develop a structured approach to your work	Plan your day and consider using time management tools and techniques to help you with this, such as labelling and prioritising your tasks.
▪ Learn new ways of relaxing	Find out what works for you and use it, e.g. yoga, sport, PMR, painting, etc.



Confidence

▪ Consciously seek to build up your feelings of self-worth	List 5 positives about yourself and praise yourself when you achieve. Get other people to tell you what your positives are.
▪ Learn to ask questions	It will give you a better understanding of what is going on, increase your involvement in the task and build your confidence in your contribution.
▪ Try to offer suggestions and ideas	Set yourself a target, e.g. one idea per meeting. If need prepare it beforehand and write it down.
▪ Consider assertiveness or confidence training	This can help you increase your confidence in social situations, learn how to present your ideas more successfully, and learn how to say 'no'.
▪ Monitor your self-talk	Be aware how you have negative thoughts or make negative comments about yourself and stop it! Replace each negative thought with an affirmation.
▪ Don't dwell on mistakes	Avoid over generalising – one mistake does not mean that everything is wrong. Mistakes can be a very useful form of feedback – so use it.
▪ Keep things in perspective	Success is not final and failure is not fatal.

Mental Toughness Development Programmes

Designed specifically to help people develop mental toughness, the programme has been developed in conjunction with Professor Peter Clough and practitioners from several different fields. There are now versions of this programme which are suited to specific applications – general occupational work, developing young people, working with carers, etc.

The concept creates an understanding of what are stressors and challenges and how people and groups can best deal with them. It has applications for Peak Performance Development and Stress Management.

The programme is available in two basic formats – delivery as a group workshop or for application on a one-to-one coaching basis. Both formats are supported by a comprehensive workbook, which contains the entire programme content as well as descriptions of tools and techniques.

The content includes:

- Understanding mental toughness
- Putting Stressors & Challenges into context
- Tools & techniques for managing stressors & challenges
- Tools & techniques for coping with stressors & challenges
- Understanding fatigue and its role in managing pressure
- Team toughness – the role of teams in managing stressors & challenges
- Creating plans that work

The programme takes a particularly proactive and applied approach to development. It makes use of:

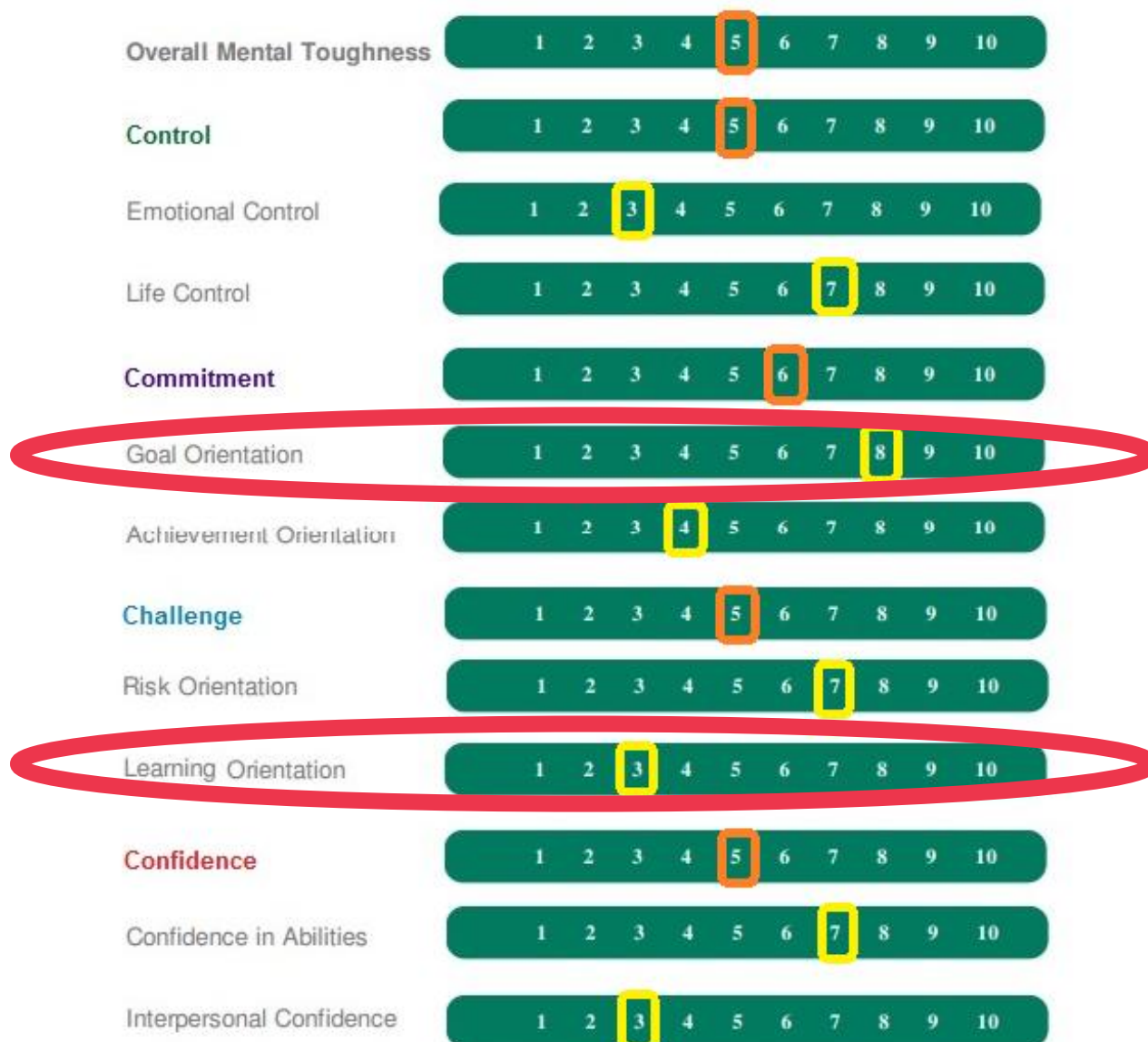
- Mental toughness questionnaires
- Personality models and measures
- Fatigue questionnaires (state and trait)
- Biofeedback equipment and techniques, including Galvanic Skin Response and Alpha/Beta wave meters.

For more information contact headoffice@agr.co.uk

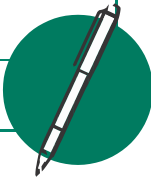
MTQ Exercises - Understanding the 4Cs

Exercise A

What might be the implications of high Goal Orientation combined with low Learning Orientation?

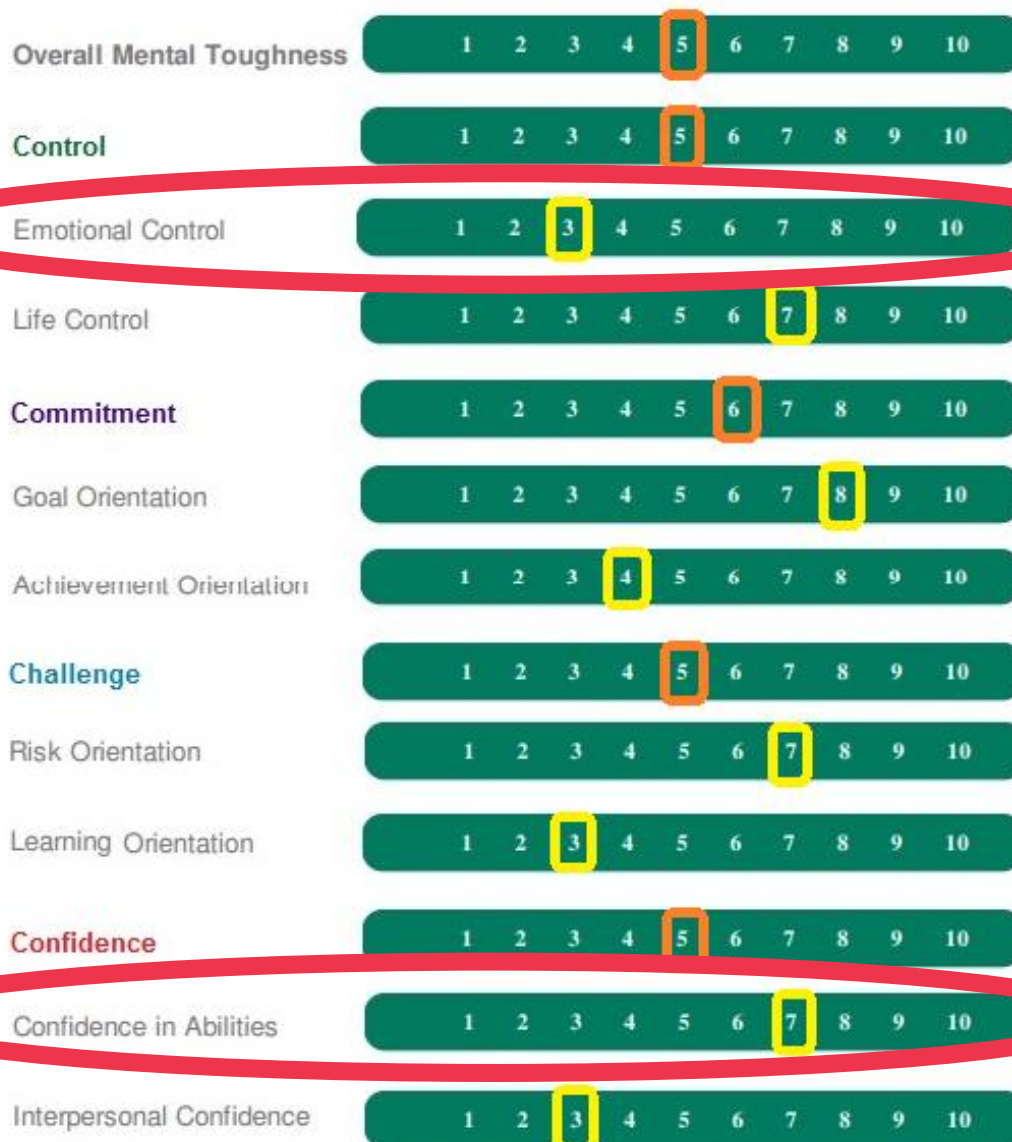


Record your thoughts here:

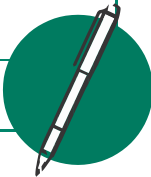


Exercise B

What might be the implications of high Confidence in Abilities combined with low Emotional Control?

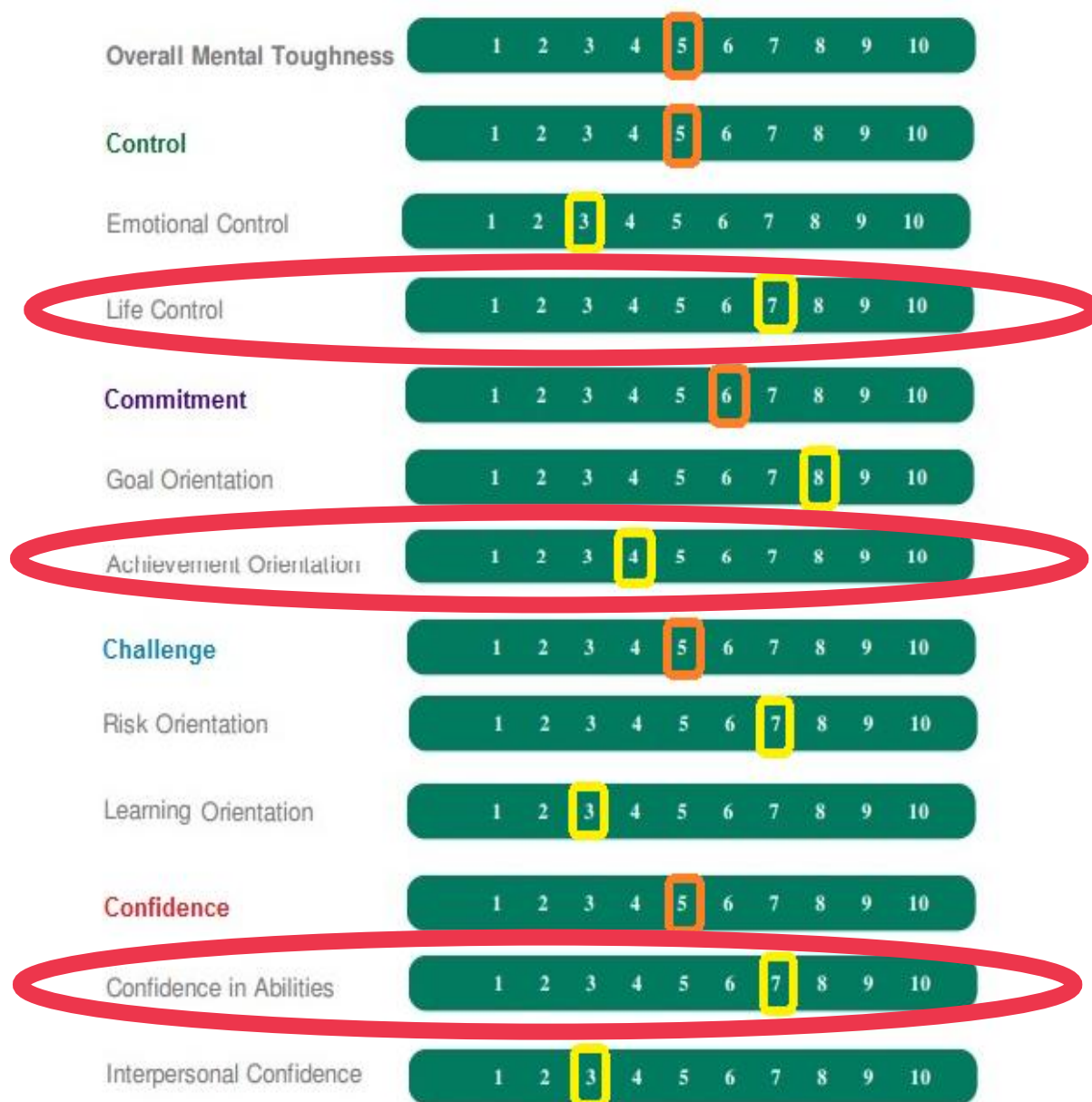


Record your thoughts here:

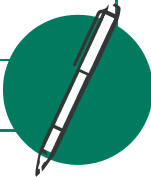


Exercise C

What happens when we look at three scores, combining high Life Control, high Confidence in Abilities with low Achievement Orientation?



Record your thoughts here:

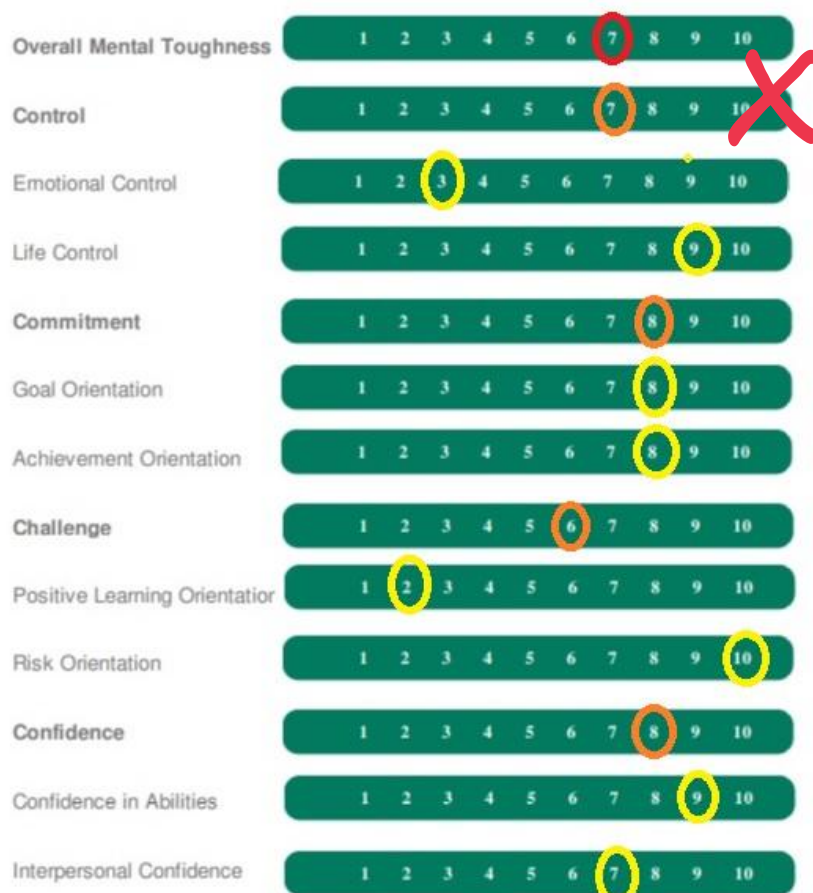


Exercise D

This is a useful exercise which illustrates the importance and value of the eight factors.

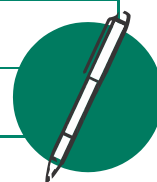
It can often be less useful to focus simply on the overall mental toughness score. Mental Toughness is a summation of eight spectrums – each one representing one of the eight factors. It is possible to be mentally tough in some factors and mentally sensitive in others.

Examining the profile below, is this person Mentally Sensitive or Mentally Tough?



Exercise D

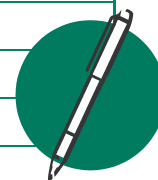
This is a useful exercise that illustrates the importance and value of the eight factors.

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Exercise E

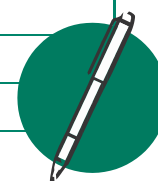
What may somebody with a high level of Emotional Control and a high level of Interpersonal Confidence look like?

Record your thoughts here:



How could that differ from somebody with a high level of Emotional Control and a low level of Interpersonal Confidence?

Record your thoughts here:



Exercise F

Person A

“This person’s Mental Toughness indicates they are able to remain calm and collected in the event of uncertainty. They are likely to maintain poise whilst projecting a can-do attitude.

While they may seldom identify targets themselves, they are likely to work hard when asked to do something, and may not feel overly stressed when tasks pile up.

Although they tend to avoid change and aren’t keen to try new experiences, when these do occur, they are likely to take something away from the experience. This person has a good sense of self-belief, although this may not be visible to those around them, meaning they may be dominated in group situations.”

Person B

“While this person may appear to be difficult to read, when stressed they will tend to hide their emotions. Although this may not be visible, they rarely feel they are in control. They can be good at masking this using their ability to communicate influentially, or by using ‘the gift of the gab’.

Despite their ability to communicate strongly, they may at times struggle with self-belief, doubting their skills

They are adaptable to new situations and tend to like thrills and seek excitement. Although most of the time they are likely to see experiences as opportunities for growth, they can at times be affected adversely by major setbacks.

This person struggles with achieving tasks and goal setting. They generally view most events as a threat and may give up easily when given too many tasks to manage.”

Person C

“This person’s profile indicated that they may at times respond to situations through outbursts, and from time to time they may have difficulty controlling their emotions.

While they have a tendency to approach targets by setting goals and are quite organised in their approach, they struggle with sticking with these targets and completing the tasks.

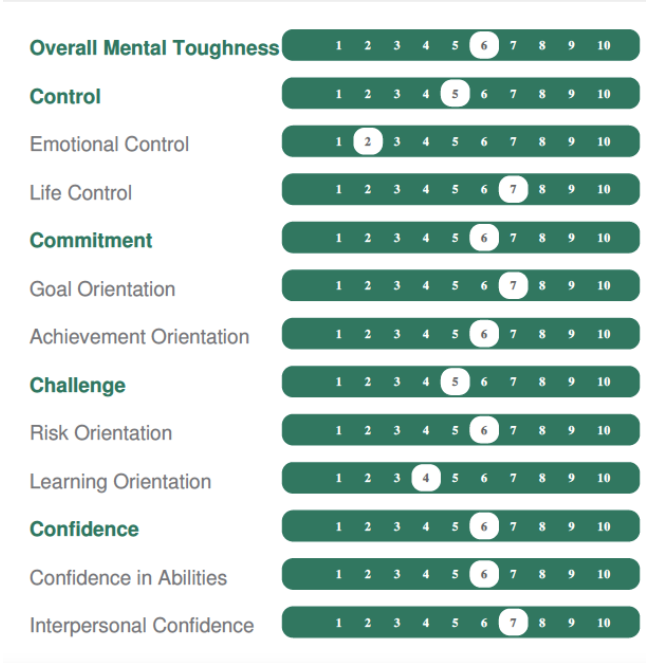
This person is likely to approach change in a positive way, as they are able to apply their previous experiences in managing changes. They are quietly confident.

Although they may at times come across as shy, they believe they have it in them to achieve a task.”

Exercise G

Can you identify which profile belongs to the manager and which to the staff member?

SUMMARY

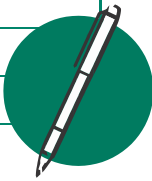


SUMMARY



Examine the profiles and see what might be the cause of the conflict between them.

Record your thoughts here:



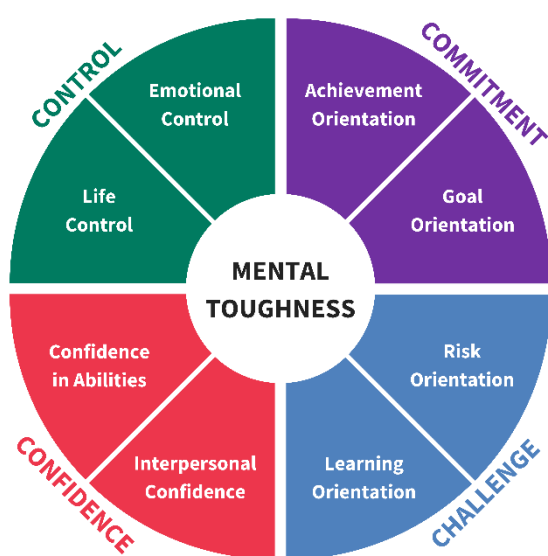
Exercise H

Mental Toughness and Culture

Below you see themes that are often a feature of an organisation's culture. Identify which Mental Toughness factor could be the most significant for each feature.

Cultural Feature	Mental Toughness Factor
(Rational) Decision Making	
Building Capability	
Accountability – A Sense of Self-Worth	
Results Focus	
Purpose (+ Goals and Strategy)	
Care, Communications, Teamworking	
Adaptability/Agility	
Continuous Improvement	

What other cultural features can you think of? How would the mental toughness factors link to those?



A Summary of Research and Publications

This is a current list of research and publications at the time of publication of this manual. However, research is continually ongoing and AQR publish updates on new work via our social media channels so to keep up to date we recommend that you follow us on Linked in (AQR International and/or Twitter @AQR_INT.

Publications

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2. Kalek, N., Gerber, M., Brand, S., **Clough, P. J.**, Lemola, S., Sadeghi Bahmani, D., . . . Holsboer-Trachsler, E. (2017). During early to mid adolescence, moderate to vigorous physical activity is associated with restoring sleep, psychological functioning, mental toughness and male gender. *Jornal of Sport Sciences*.;35:426-434
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Further Information

This User Guide is intended as a tool to get you up and running with using MTQ

Enquiries

All queries should be addressed to AQR Ltd. We are particularly keen to hear from users about their experiences and the direction they would like us to take with development of this tool.

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Other Products

ILM72

The Integrated Leadership Measure is a leading-edge psychometric tool which integrates with all major leadership models. It measures leadership styles and key elements of leadership effectiveness.



The PREVUE Assessment is a unique, Big 5 measure. It measures core Abilities, Motivation & Interests, and Personality in one simple 55-minute test.



The Personality Type Card Sort adopts a Jungian model of personality and has the further advantage of providing individuals with an indication of their personality type. Popular Jungian based models include MBTI*, Insights, JTI & Jigsaw.

CARRUS

Carrus is a unique employability measure which measures key attitudes towards aspects of work plus core ability in 4 areas. It assesses 12 scales around 3 themes: Problem Solving, Motivation and relationships with others.



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