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A case for robustness in cadet training

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This paper explores the idea of 'robustness' and 'resilience' within the context of cadet training within the Irish Defence Forces. The term 'resilience' is commonly used within the Defence Forces, including as a competence during cadet interviews and as metric for scoring cadets during training. However, it is unclear how members of the organisation that use the term or are subject themselves to assessment on it actually understand what it means. This paper suggests that many confuse the term with 'robustness' and argues that this is a more appropriate term to place at the centre of cadet training.

The findings discussed here indicate that there is conceptual overlap amongst members of the Irish Defence Forces in relation to robustness and resilience. Additionally, the findings demonstrate that the main aim of cadet training is to develop robustness, and not resilience as most commonly understood outside the organisation. Structured failures in a supervised training environment can help develop robustness, however the annual intake of cadets makes this difficult to implement correctly. Finally, the study shows that there are different levels of resilience based on one's own experiences, underpinning the difficulty of having resilience as a core tenet of cadet training, as it is so difficult to standardise and assess. In light of this, the paper makes a number of recommendations that emphasise the importance of robustness to cadet training.

The focus of this paper is to recommend the creation of a better training experience for cadets joining the Irish Defence Forces (DF), by focusing training on robustness, rather than on resilience. The argument is not to create an easier training environment, but to correctly align the whole process, which involves correctly understanding the core tenets of cadet training and calibrating this with the selection process. This ensures that the selected candidate put forward for cadet training has the required competence, which is then embraced and enhanced during training, thus providing a progressive training experience applicable for all candidates.

The background for this research is multifaceted. It draws on the author's personal experience as a Class Officer at the DF Cadet School, previous research into Defence Forces (DF) members' understanding of resilience and also from the author's previous role as the DF point of contact to the Independent Review Group which reported on culture issues in the DF in 2023. All of this has led to the question: how can we improve cadet training?

In my role as Class Officer I was struck by a number of things; firstly, it was clear that cadet training was not for everyone who had been selected. This resulted in a large number of cadets struggling with training, and in some cases, looking to withdraw their Cadetship. But given what is deemed to be a 'rigorous selection process', it became apparent to me that there was a disconnect between what the selection board was putting forward, and the candidates' ability to take part in the training. To put it in another way, there was a disparity between what the candidate was expecting training to be, versus the actual reality. At times, this resulted in injury and difficulties completing the training. The second point that struck me was that the syllabus was focused on the term 'resilience', which was also an attribute scored during assessments. But it was evident that there was ambiguity around what the term actually meant, how to measure it and whether or not it can be trained. The difficulty is that resilience lies in the eyes of the beholder, and therefore, is difficult to define, almost impossible to measure and even more difficult to provide scenarios whereby it can be exercised and assessed. Thirdly, what became evident was what exactly the staff and students understood resilience to be was actually robustness. This was on such a scale that it was unfair for both the staff and the cadets, as it created ambiguity in expectations. It was felt that in some cases robustness was the actual underlying meaning, but confused with the term resilience. Therefore, the logical conclusion to the points raised above would be to focus the selection and training of cadets on actually enhancing (as they must show it as a competence to be first selected) robustness, rather than resilience, and this would streamline training and assessments.

In an international context, General Stanley McChrystal is a former commander of the International Security Assistance Force (ISAF) and Joint Special Operations Command (JSOC), and his book, 'Team of Teams', discusses in detail the challenges that the coalition forces faced when fighting against Al Qaeda in Iraq (AQI). He goes to great lengths to outline the resilience that AQI frequently showed against a far superior force, coalition forces. Here he quotes: "education is resilience, training is robust."(McChrystal et al. 2015, p. 115). His contention is that the lived experiences of AQI made them resilient, and this resilience could not be matched by the training of the coalition forces, even the Special Forces soldiers. Their training made them robust, but they could not match the resilience of AQI as the lived experiences and hatred towards the west, due to perceived atrocities carried out in the past by the west, gave them a marked advantage to repeatedly show a superior level of resilience. This begs the question that, if U.S. Special Forces training cannot make their soldiers resilient, then how can Defence Forces cadet training aim for it, and whether a shift towards robustness is more realistic, in line with Gen. McChrystal's comments above.

This paper aims to make a case for replacing resilience as a key tenet in cadet training with robustness (both mental and physical). In order to make this case, the paper asks 'what is robustness in the context of military training'? Additionally, in order to answer this question, it isalso essential to explore what constitutes 'resilience' and to make an argument as to why it is so difficult to train, measure and assess. Examination of these questions will be used to argue that robustness is the most important attribute to ground cadet training in; and to display clearly the benefits that can be derived from focusing the syllabus of training in enhancing cadets' robustness.

The purpose of the research is not to attempt to identify a single definition of robustness and resilience for the DF. This is not deemed practical or achievable on the basis that it is our understanding of the topic, and not a fixed definition of the topic, that holds the true value to this research. Additionally, the research is not aimed at redesigning the Irish syllabus of training, but more importantly displaying why any future iterations should include robustness as the foundation for any objectives or aims.

Relevance of this Paper to the Irish Defence Forces

Cadet training has come under external scrutiny and criticism in recent years. The training syllabus (TS 051/2019), which is the cardinal document for how training is conducted, has been adjusted on numerous occasions to take into account recommendations for reports such as the Independent Monitoring group (IMG) One (2004), Two (2008) and Three (2014). Additionally, the most recent Independent Review Group Report (2023) and the publication of the Meenan Report (2023) were both extremely critical of how cadet training is conducted, and this should ultimately lead to a redesign of how cadet training is conducted in the future, including a new syllabus of training.

Presently, the syllabus of training includes resilience as a key tenet for its training and education objectives, but given the debate that presently exists 'if and how' resilience can be trained, the opportunity exists to progress any future syllabus of training to include robustness as the key tenet of training. This will improve and align competencies associated with the selection process, training objectives and scoring proformas throughout training. This central alignment will potentially allow for improvements in candidate selection and candidate retention. This character attribute is therefore only being enhanced during training from what presently exists in the candidate, rather than trying to inculcate it in an individual where it presently doesn't exist.

PART ONE. Literature Review

The purpose of this study is to make the case for robustness to be a key tenet in cadet training. In order to make this argument this Part will demonstrate the key theories as they pertain to robustness. However, since cadet training presently mainly focuses on developing resilience, this section will also look at the theories that pertain to resilience, so that a balanced view can be formed as to whether maintaining the status quo is the most acceptable outcome, or whether the core tenet of training should be moved to enhancing robustness. The section will explore the confusion that exists between both attributes, and why it is essential to separate both through agreed definitions, including graphs. Finally, it will look at the present syllabus of training for cadets, and how it is conducted; this will include looking at the tenets of the U.S. Army Cadet Syllabus to form a rounded view of the topic. In tandem, this section will also illuminate explored research areas and pinpoint any disparities or voids in knowledge that warrant further investigation. An early discovery in the research process was the identification of a noteworthy challenge, the consensus that exists in relation to the lack of suitable definitions for the personal/military aspects of robustness and resilience (mental and physical).

Definition of Robustness

According to Bradley (1978), 'robustness' came into use in the 1950s in mathematics to evaluate the performance of tests being conducted. In fact, Bradley goes on to describe robustness as a 'highly general phenomenon' and as such it is utilised qualitatively, which ultimately results in authors adapting definitions as they see fit. Robustness derives from the Latin word 'Robus' which means oak and is a symbol of strength (Barabasi 2002). Robustness is predominantly used in fields such as engineering or computer science (Clement et al. 2021), and there appears to be limited extant research focusing on a definition of mental robustness. This is supported by Shahrokni and Feldt (2013) when they outline that in a 'general sense' there are no previous systematic reviews of the definitions of robustness. Therefore, although numerous definitions of robustness can be found, most are relevant to specialist fields, and not necessarily wholly appropriate in comparison to robustness (mental and physical) for cadet training.

In order to garner a greater understanding of robustness, definitions from several different fields will be outlined and a comparison between them will be utilised. From a systems point of view: "robustness is the measure or extent of a system's ability to continue to function despite faults in its subsystems or parts." (Zissis 2019, p. 1); here the author looks at how industrial systems can continue to function when challenged, this is important for industrial systems to keep the supply chain moving and to be robust enough not to have to stop due to faults. The system is robust enough to be able to work within the parameters that the faults are impacting, i.e. not stopping.

When referring to biological systems Crespi et al. (2022, p. 2) states that: "robustness underscores the ability of a biological system to maintain the original state even after encountering perturbations." The Cambridge Dictionary[1] defines perturbations as: "change in the regular movement of an object." In essence, although worded differently, industrial systems and biological systems are similar when it comes to robustness; when both are placed under pressure, the systems continue to function and perform.

Another lens through which to view robustness is that of structures and extreme loads, and here robustness is defined as: "the structure's ability to avoid disproportionate collapse due to an initial damage" (Stochino et al. 2019, p. 1). In essence a building should be robust enough to avoid collapsing (failure) from either a fault in the build design or perturbations.
The linkages from all of the definitions provided for above is that robustness allows a system, structure or organisation to bend without breaking.

Further definitions can also be found when looking at organisational robustness. Van Oss and Van 't Hek (2012, p. 4), define organisational robustness as: "the capacity of an organisation to retain its core characteristics under changing conditions". Here similar sentiment as discussed above is evident; organisations being challenged but maintaining their core characteristics.

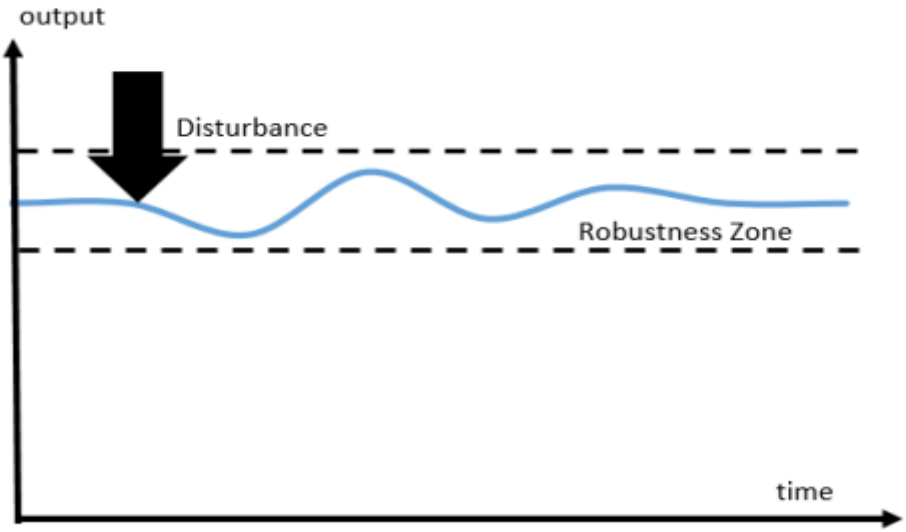
[1] Online source available at
https://dictionary.cambridge.org/dictionary/english/perturbation?q=perturbations.

In human terms Kovacs et al. (2022, p. 7) state that: "robustness defines people with a high level of commitment, control, responsibility, who treat challenges as opportunities for personal development". In essence this statement is exactly what the syllabus of training for cadets should be aiming to develop and reinforces the need for robustness to be the central tenet of the syllabus.

Graphing Robustness

In a paper aimed at identifying definitions and the main similarities and differences between the concepts of resilience and robustness, Clement et al. (2021) conducted a literature review of published literature on both terms between 1975 and 2018. From their analysis of the literature, they were able to provide a graph of robustness, outlining how the concept works.

Figure 1: An illustration of robustness from Clement et al. (2021, p.14)



In the graph the x-axis represents the recovery time, and the y-axis represents output. An alternative view to output, when dealing with individual robustness, is performance. The disturbance arrow represents a form of shock to the system, which is presented as either a fault, perturbation, change of condition or damage. The robustness zone represents the zone in which output/performance changes as a result of the disturbance, but does not fall below the lower line, which would result in failure. Robustness can therefore be viewed as a zone within which fluctuations take place in output/performance from a shock, but the lower tolerance of the zone allows the recovery to take place over time.

What is evident from the graph provided is consistent sentiment among the variously worded definitions provided above. It indicates that when a shock disrupts a system, that fluctuations occur within a tolerance zone, enabling the continued functioning of the system or structure. Just as the robustness of a system or structure prevents failure and safeguards its functionality, a parallel can be drawn to personal robustness. In the context of individuals, disturbances may lead to performance fluctuations, but their robustness ensures the prevention of failure. Individuals can recover over time, returning to an optimal performance level. This process differs distinctively from resilience, which will be discussed in the next section.

Definition of Resilience

In contrast to the lack of extant research on personal robustness, personal resilience has received more attention. However, there is a lack of clarity around what exactly comprises resilience. Tisseron (2007) contends that the term resilience has two distinct origins; the first coming from the French Middle Ages and holds the notion of retracting or leaping back. The second comes from the 17th Century, but this time from the English language, and is a type of post-shock rebound. In fact, the term resilience can be traced back further and it is argued that it is derived from the Latin terms 'resiliere' or 'resilio' for 'bounce' or 'rebound (Alexander 2013). In essence, resilience can be described as a 'phenomenon' (Edward, et al, 2009), and is viewed from a number of different perspectives depending on the academic location. Resilience is primarily used in fields of expertise such as social science and psychology (Clement et al. 2021).

In order to provide an accurate comparison to robustness, definitions below are taken from the same fields as that of robustness but will also include definitions from alternative fields. Beginning in the systems field, Zissis (2019, p. 1) outlines that: "resilience is a system's ability to withstand a major disruption within acceptable degradation parameters and recover within a satisfactory timeframe". A change of language is evident from that of robustness in that here a 'major disruption' is utilised along with the term 'degradation parameters' and a reference to a period for recovery. These are added terms that differ from that of robustness; the event is greater, some form of recovery is required, and it must be achieved within an acceptable period of time.

Defining resilience from the point of view of biological systems: "resilience is the ability of a biological system to return to a previous state or establish a new state after significant perturbations" (Crespi et al. 2022, p. 2). Again, the terminology moves to 'significant perturbations', similar to 'major disruption', and the return to a 'previous state' or 'new state', which means that a significant shift in shape or state must have taken place. One can garner from this that the biological system has all but failed and must recover or adjust to a new state. In order for the recovery to take place the system cannot function as it was designed to do until the recovery takes place in the aftermath of a significant event.

Another view is from the perspective of structures, whereby resilience is quoted as: "the ability of the infrastructure to adapt to and recover from a disturbance or damage during a disaster" (Stochino et al. 2019, p. 1). The change in language is again clear, whereby either an adaptation or recovery is required, and the term disaster is used, signifying a 'major' event. The fact that an adaption or recovery is required, would signify that function (output/performance) is affected and either a change is required, or recovery is required, which will ultimately result in a loss of time for this to take place.

When it comes to 'personal resilience' it is exceptionally difficult to get a consensus on a definition (Ryan, 2021). Even the pre-eminent scholar on Positive Psychology, Martin Seligman, who has published more than 250 scholarly articles and more than 20 books, does not provide a definition of resilience. Additionally, Seligman was one of the key architects on the US Army Master Resilience Training (MRT). The programme aims to provide face to face resilience training for the members in order to have an impact on overall resilience. However,

the programme does not provide a definition of what constitutes personal resilience (Reivich et al. 2011).

There are however some definitions available from other authors which may be utilised. In terms of childhood development, resilience has been defined as a "dynamic process of positive adaptation or development in the context of significant adversity" (Luthar et al. 2000, p. 543). Additionally, Masten (2001, p. 228) contends that youth who show resilience display "good outcomes in spite of serious threats to adaptation or development". The significance of what is outlined by Luthar and Masten is that the disturbance to trigger resilience is 'significant' or 'serious'; this is in line with the definitions provided above for systems and structures.

When referring to mental resilience, Kovacs et al. (2022, p. 2) states that:

> This concept (resilience) emphasises the person's abilities to survive and even develop as a result of the traumatic events to which one was exposed. The concept is of Latin origin (resilience = rebound from a violent physical shock) and refers to the ability to successfully cope with the worst adversities, disasters, traumatic experiences, falls and the negative effects of stress.

In line with all of the other definitions, the disturbance which initiated the resilience is of a far greater severity than that disturbance which engages robustness. Interestingly, Southwick et al. (2014, p. 2) contend that "resilience more likely exists on a continuum that may be present to differing degrees across multiple domains of life". It is important to understand that there is not just one level of resilience, but there are multiple levels of resilience across multiple domains.

DF Leadership Doctrine (2023, p. 50) states that: "resilience may be defined as our ability to successfully adapt to and overcome life's challenges". This definition is at odds with the definitions presented above for resilience; central to this is that 'life's challenges' is not equitable to the terms outlined as 'significant', 'serious threats', 'disaster', 'major events', 'worst adversities' etc.

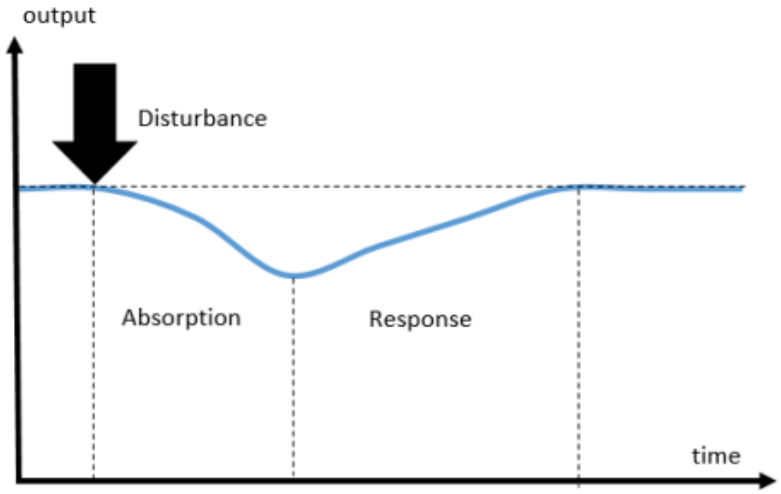
Part of the difficulty that exists with the ambiguity around personal resilience and its qualitative factors is how to measure resilience. Garcia (2018, p. 3) contends that: "given that risk factors inhibit while protective factors promote resilience, it is important when measuring and evaluating resilience that researchers clearly define what aspects of the resilience researchers are evaluating". Given the lack of a consistent definition for resilience, it can be understood how difficult it is for military instructors to be able to measure and evaluate resilience in cadet training, without the appropriate definition. This can lead to ambiguity and inconsistency in marking.

Graphing Resilience

Clement et al. (2021) provide a graph outlining resilience (see figure 2). In this case a dip below the output/performance line is shown, with a period of absorption and response required prior to the output/performance returning to an acceptable level. Absorption is required to understand the gravity of the situation and a response is required to allow for normal function

to return and an improvement to be seen. Of particular note, is that a time period is required whereby output/performance is affected prior to a return to normal function. This differs from the robustness graph, whereby the gravity of the disturbance is not as great, and the system or person has the robustness to prevent the output/performance from dipping below an acceptable level.

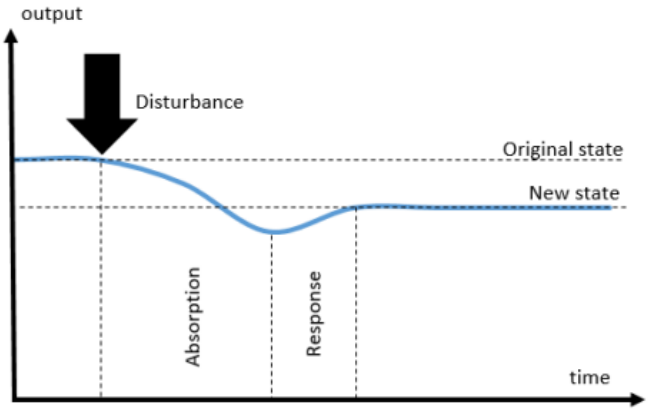
Figure 2: An illustration of resilience from Clement et al. (2021, p.15)



If we were to apply these principles to training, and cadet training in particular, it is evident how employing resilience as a key tenet would require a greater degree of disturbance than desirable. This would be of such a scale that that you would knowingly be impacting a cadets' performance, to the level that it would take a time period to absorb, respond and recover back to an acceptable level. It could be argued that, in a controlled training environment, exposing inductees and vulnerable students to 'serious threats', 'disaster', 'major events' and 'worst adversities' could encroach on breaches of health and safety guidelines and laws.

Interestingly, Clement et al. (2021) provides an additional graph which shows that when the disturbance is applied, the output drops from the original state, but never recovers back to this state, and remains at a new lower state (see figure 3). This results in a lower output/performance level and is deeply worrying when applied to the model of training cadets.

Figure 3: An illustration of resilience – model 2 from Clement et al. (2021, p.15)



Utilising this model, it is therefore clear that if the level of disturbance is too high, or the level of personal resilience is too low for a cadet, that the cadet might never return to the original state of output of performance. The disturbance could either result in an injury or an impact on the cadet's confidence, and the cadet is unable to recover to the original state, leaving the cadet with 'scar tissue'. In that case, the cadet would face being placed on 'probation', a repeat of training, or a withdrawal of Cadetship, as per the syllabus of training.

Confusion between Resilience and Robustness

The literature reveals confusion that clearly exists in the understanding of resilience and robustness. Capano and Woo (2017, p 3) state that: "different literature streams employ resilience and robustness in ways that risk conceptual overlap". However, as displayed above there are core differences between both when analysed. Ukraintseva et al. (2016) agrees that both terms are used in an interchangeable manner, but there is a need to define 'physical resilience' when referring to ageing and health: "it is important to distinguish between the ability to resist deviation from the original state (we will call it "robustness") from the ability to recover after such deviation (resilience per se)". (p. 1). This is important in the context of the overall research, the ability to distinguish between both is just as important in training as it is in health, and as summarised by Ukraintseva et al. (2016), it is the ability to resist (robustness) vs the ability to recover (resilience) which provides the difference. This point is as relevant to ageing and health as it is to structures, and to cognitive behaviours.

Hillmann and Guenther (2021) have undertaken a thorough examination of the concept of organisational resilience in the realm of management research. In line with prior scholars like Burnard and Bhamra (2011), they commence their work by underscoring the absence of a consistent and clear-cut definition for resilience in the context of management research, highlighting the existing disparities in its definitions. Without this clear-cut definition, resilience crossed into the territory of robustness providing confusion and ambiguity.

In their literature review on resilience and robustness, Clement et al. (2021, p. 17) included a column titled 'confusion' in their table, such was the overlap between both topics provided for in the literature. They state that: "the other articles in the row and the column 'confusion' finally correspond to authors giving the same definition for the terms of robustness and resilience but it may have made slight differences". Their paper continues to discuss that out of the total 42 articles (37%), there is no provided definition for either one or both of the terms. In these articles, it remains unclear whether the authors mentioned treat the two terms as a unified concept or if they express a preference for one term in their research.

This 'confusion' is broadly in line with the definition provided for DF Leadership Doctrine (2003, p. 50), which states that: "resilience may be defined as our ability to successfully adapt to and overcome life's challenges". This definition is more akin to that of robustness rather than resilience, given that life's challenges may not be as severe as what is outlined as disturbances for resilience, e.g. 'disaster' and 'major event'. This definition only provides for ambiguity and uncertainty on the topic rather than clarity as to what the DF contends what constitutes resilience. Interestingly, it appears that robustness is the key tenet for levels of German Army leadership training: "structured robustness training sets the

framework for physical and psychological training over a soldier's lifecycle from basic training to retirement." (Krueckel et al. 2019, p. 152) The German Army views robustness as a method to achieving mission success, this also includes the elusive 'Ranger' course, whereby robustness training is a key highlight.

Cadet Training in the Irish Defence Forces

This section will examine resilience as it pertains to cadet training. Initially it will look at the generating document for a Cadetship, the Terms and Conditions to be offered a Cadetship (2023). It will then look at the cardinal document under which cadet training is conducted, the Syllabus of Training. Transitioning from this, the section will investigate the Standing Order Procedure as laid down by the School Commandant of the Cadet School. Finally, the section will discuss recommendations made following an investigation into a Protected Disclosure made to the Minister for Defence (2023).

The over reliance (use) on resilience above robustness continues to be evident across most documents associated with Cadetships and training. This is evident through the competencies that candidates for a Cadetship are expected to display during the selection and interview process. The Terms and Conditions for the 2023 Cadetship outline that a successful candidate must have an ability to demonstrate competence in several areas, including resilience (T&Cs Officer Cadetship, 2023). The Terms and Conditions state that resilience is 'Calmness when faced with conflicting demands and when working under pressure' (2023, p. 8). The definition provided contradicts the understanding outlined in the literature which points to a higher level of disruption required for the candidate to show resilience. This is an example whereby a candidate is showing a subdued, misinterpreted or even lower level of resilience than that with which they may face during cadet training. This disjointedness in candidate selection vs the training environment may be fuelling the issues that cadets face during training.

Cadet training is designed around the Syllabus of Training TS 051/2019. Resilience is mentioned on eight separate occasions. It is referenced from the beginning, where under Training and Education Objectives, the very first objective is to: "develop leadership ability, raise insight, create self-awareness and enhance physical and mental resilience through training and practice in command" (2019, p. 4). The syllabus continues this linkage to resilience when it goes on to state that: "tactical training is also the vehicle through which much of the assessment of leadership ability and resilience is conducted" (p. 12). Understanding what has been outlined previously in relation to resilience and the requirement for time to allow for the absorption and response phase to take place, which ultimately results in a drop in output/performance, and also the risk that the output/performance will 'not' actually recover to the original state, it is therefore arguable that tactical training 'is not' the most appropriate vehicle for the assessment of resilience. Interestingly, robustness is not mentioned in any meaningful way throughout the syllabus, and one could argue that it would be more appropriate for the syllabus to refer to robustness, rather than resilience in all areas, including tactical training, as a robust tactical exercise would allow the cadet to perform within an acceptable tolerance level; but this again is further evidence as to the conceptual confusion and ambiguity that exists between both.

Resilience is deemed a key component of an individual's character by the Cadet School, something which is assessed consistently throughout the training environment. Character assessments can often be difficult to complete as it is difficult to apply specific metrics. Training assessments that produce quantitative results rather than qualitative results are often easier to score. Schools which conduct character assessments on students can be assisted by producing their own Standing Order Procedure (SOPs) to break the assessment down in detail. For cadet training the character assessment is broken down into 21 different headings for assessment (The Cadet School 2020). One of the subheadings, under the heading of character, is 'resilience'. The SOP defines resilience as, 'Mental strength, ability to deal with pressure, criticism and the restrictions inherent to cadet training' (p. 150). Although the definition of resilience provided here can assist in applying a mark, it is certainly open to interpretation on behalf of the assessor, and this would rely on the experiences of the assessor in a training environment to provide an accurate mark. This openness to interpretation based on experiences creates ambiguity and where there is ambiguity there are misunderstandings, as outlined by Jagdish Kaur (2017).

Following a Protected Disclosure to the Minister for Defence in 2020, SC. Meenan conducted an investigation into the Cadet School and her recommendations were published in 2023. Compelling, is that in her recommendations she does not refer to resilience at any stage, but in fact refers to robustness, stating that: "this is notwithstanding the nature of army life and the requirement for robust training" (2023, p. 4). This is aligned with the author's view on the topic but is not consistent with the syllabus of training presently, whichis either incorrect or misunderstands the difference between resilience and robustness, which according to Clement et al., is common.

Comparison to West Point

West Point Military Academy is the U.S. Army Academy where their officers are trained. When their syllabus and training material is critically analysed there is a definite vertical link the whole way through their system for developing their future officers' robustness. This begins at the highest level, with the current Academy Superintendent, Lieutenant General Gilland stating in his opening notes that: "At West Point, Cadets receive a world-class education and robust training to prepare them to serve as Army officers" (Gilland 2023, p.1). This reference to robustness is followed through their course curriculum and catalogue, which is known as 'the Red Book' (2023), noteworthy is that resilience is only mentioned once in the whole catalogue (p. 26), and this is in terms of pre-professional activity, and this is included as 'resilience & adaptability'.

It is evident that the key tenet for the training of cadets in the U.S. Army differs from that in the DF. The vertical linkage in West Point is that of developing their cadets' robustness, whereby in the DF, from selection to training, the aim is to develop resilience. This is an interesting difference to their objectives, and from interpretation there are potentially two reasons for this; (1) There is a fundamental misinterpretation on behalf of the DF as to what exactly constitutes resilience, and in fact the core aim is to develop robustness but the term has been misused due to misunderstanding and this is causing confusion in relation to terminology. This is clearly in line with what has been outlined by Capano and Woo (2017) and Clement et al. (2021) above. (2) When the DF were designing the syllabus of training there was a thorough understanding of the terminology and the conscious decision was made to

have resilience as the key tenet of DF cadet training. In contrast, the U.S. Army, which has large scale experience at operations in conflict, and have completed numerous lessons learned processes from various campaigns, have designed their syllabus to reflect what they feel is most important to the development of their future officers to serve in conflict. It is felt unlikely that the DF would knowingly contradict or differentiate largely from the West Point syllabus, if they actually knew the differences between robustness and resilience, as portrayed above

Gaps and Inconsistencies in the Literature

The gaps and inconsistencies that exist in the literature are evident throughout the review process, and this has been acknowledged by several authors and commenters as discussed previously, along with research previously conducted by this author on the topic (Ryan 2021). Although the work of Clement et al. (2021) is exceptionally detailed and beneficial to this study, it is not replicated or broadened for individual fields. The absence of an agreed definition for militaries and military training in relation to resilience has made the study difficult. Whereby some literature exists that refers to military resilience, this is neither consistent nor in line with what is posited by Clement et al. (2021) in their study. There is even less published about military robustness, and as outlined previously there is a worrying level of crossover between it and resilience, including the definition proposed by the DF Leadership Doctrine (2023). The niche field that this paper focuses on has made it even more difficult to narrow the focus of definitions and to find consistencies in the literature. It has therefore been required to use experience and create linkages between what is currently published in literature and how these fit with cadet training.

PART TWO. Research Methodology

Interviews

Semi structure interview was chosen as the method to elicit the greatest amount of experience from the participants and to ensure that the interviews did not become constraint to rigid and structure questioning. The experience provided by the participants is consistent, due to the nature of their rank and the experience with which they have amassed throughout their career to achieve this rank. Only senior officers (Lt. Col. and above) were selected for interview and 50% of the research participants are at the rank of General, either serving or retired.

Ultimately, the participant's engagement plays a crucial role in determining the quality of the collected data and remaining congruent in the moment during the interview process. This congruence was enhanced through the shared experiences of both the participants and the researcher, given the fact that all have endured the same training, from officer training to Command & Staff Courses and overseas deployments. Although these events took place at different times and different locations, the mutual understanding from these shared experiences ensured that the examples of robustness were understood by all parties in the interview.

Sampling and Participants

Creswell (2016, p. 128) states that utilising the phenomenological approach allows for a “much more narrow range of sampling strategies”, and criterion sampling is appropriate

when all participants involved have encountered the phenomenon. Robustness in cadet training may seem broad from a number of different spectrums and speciality areas, however it was important to find participants that have a broad range of experience with the topic and have worked in areas where they developed others with their robustness; hence, a purposive sampling approach was necessary, involving individuals capable of offering detailed descriptions of their experience with the phenomenon. This is based on their extensive experience of robustness in either the DF, the U.S. Army or U.S. Special Forces at several different levels (tactical, operational and strategic), both on island and overseas. It was deemed essential that the participants understood the content discussed in Part One of this paper, such as robustness in systems, in training, and as part of leadership development. Therefore, the five participants had a massive range of experience in their respective militaries; they included the longest serving Commander of the ISAF (International Security Assistance Force) mission in Afghanistan (Four Star General rank), a U.S. Army Special Forces Brig. Gen, a Brigade Commander from the DF, and former Class Officers and Cadet School Instructors. Given the experience and prestige of the participants, their inputs are invaluable to this research. Therefore, in Part Three, rather than presenting their inputs as sentences without context, their experiences and inputs are presented as larger paragraphs, telling the full story and providing context in their own words. Presenting the inputs in this manner ensures that the qualitative research is true to the participants, as stressed by Sutton and Austin (2015).

It was decided that five participants were required to provide scope, variation, and diversity of experience, with Giorgi (2010) specifying a minimum of three participants is required. Accordingly, in order to provide the depth and scope of knowledge required for the research into a topic such as this, it was deemed appropriate that the participant must be of the rank of Lt. Col. or above and have served in either the Cadet School as an Instructor, a Class Officer, or be of Gen. rank in the U.S. Army or Special Forces. This is to assemble as diverse a sample as possible, one that could offer insights into the shared understanding and meaning of robustness. This diversity was also enhanced by including a female research participant, who could ensure that all experiences were researched appropriately, given that males and females take part in cadet training. This meant that any participant taking part in the research would have a minimum of 23 years' experience in the military, have completed several careers courses, served in the Cadet School in a senior appointment or the U.S. military, be proficient and experienced in several key appointments in the military and hold at least a Level 9 Degree. To enhance diversity across the Senior Officer ranks, where possible it was decided to spread the rank of the participants amongst as many senior ranks as possible, from Lt. Col., Brig. Gen and Four Star General. This rich experience is key to the success of the approach outlined above and ability to add real value to the research. For the purpose of protecting the anonymity of the research participant, identifiers have been included rather than their name.

Identifier	Rank	Length of Service	Service
Participant A	Gen. (Four Star)	40 years	U.S. Army
Participant B	Brig. Gen.	35 years	U.S. Special Forces
Participant C	Brig. Gen.	42 years	DF
Participant D	Lt. Col.	30 years	DF
Participant E	Lt. Col	23 years	DF

Ethical Considerations

The research required the participants to express their experiences and feelings on sensitive topics that surrounded robustness and could provide for uncomfortable areas of discussion. It was necessary to maintain impartiality, objectivity, and a non-judgmental stance to acknowledge the existence of multiple realities and perspectives. It was essential that the participants understood that they were not speaking on behalf of the organisation or their present appointment, but in fact were giving their own opinion based on their own experiences. To comprehensively elucidate the nature of the ongoing research and foster an understanding of the subject area, a question sheet outlining which questions was discussed, but not exclusively, and was delivered to each potential participant prior to the interview. I, as the researcher, was very conscious of the sensitive nature of the subject area for the participants and their profession. Accordingly, in some cases a commitment was given to requesting participants that all efforts would be made to conceal their identity and their rank. The question sheet is available at Appendix B. There was also a risk that the interview questions might cause some heightened emotional responses, however it was not anticipated that this would be any more heightened than that experienced on a daily basis.

Data Analysis

Aligned with Giorgi's methodology, thematic analysis was employed to unravel the participant's experiences (Gill 2014). The method used for analysing the data is known as 'reflective thematic analysis' and was first published by Braun and Clarke in 2006 in their paper on 'Using Thematic Analysis in Psychology.' It is commonly used across the social, behavioural and more applied (clinical, health, education, etc.) sciences. Braun and Clarke (2006, p.82) outline that "A theme captures something important about the data in relation to the research question and represents some level of patterned response or meaning within the data set. They go on to outline six stages for conducting reflective thematic analysis. These stages are:

1. Familiarising yourself with your data;
2. Generating initial codes;
3. Searching for themes;
4. Reviewing themes;
5. Defining and naming themes;
6. Producing the report. (p. 87)

PART THREE. Research Findings And Analysis

Part Two detailed the selected research philosophy and design with the aim of developing an insight into the concept of robustness and its relevance in cadet training. Building on the literature discussed in Part One and guided by the methodology established in Part Two, this part will present the research findings. This research followed the six steps outlined by Braun and Clarke (2006), as discussed in Part Two, and four themes relevant to the research question became apparent from the analysis of the participant interviews. The first theme is the Understanding of Resilience and Robustness, whereby there was a substantial contrast in the understanding from the participants in the U.S. Military compared to that of the DF participants. The second theme is Robustness in cadet training; here it is clear that the main aim of cadet training is to develop robustness, however, this is not aligned with the training

syllabus and documents. The third theme is Structured Failure in Training; the data here shows that failure during training is accepted and embraced in the U.S. Military, however, the culture in the DF is not as accepting of failure. The fourth and final theme is Experiences of Resilience; importantly the data shows the uniqueness of these experiences and how it is difficult to standardise resilience in training when it is based on personal experience. This part dovetails the voice of the participant, drawing on their experience in the area, with the relevant literature that was explored in Part One, in order to provide a rounded and balanced portrayal of the themes. Meshing together the participants views on the topic and the literature, allowed for valuable insights to be formed on the research question, 'A Case for Robustness in Cadet Training'.

Understanding of Resilience and Robustness

The first theme explores the data concerning individual's understanding of robustness and resilience, and portrays how there is a difference in the understanding from the perspective of the interviewees from the U.S. Military and the understanding of those from the DF. The U.S. Military participants were able to outline exactly what constituted the difference between both terms and were able to provide accurate examples from their own careers where they have experienced both. However, when participants from the DF were asked the same question, they were less certain of the difference between the terms and admitted that they had used both statements interchangeably in the past. This finding underpins the importance of my research and provides a vista into the ambiguity/interchangeability which exists in the DF with the terms, and the magnitude of issues that can be associated with this lack of understanding. This theme is illustrated in the following quotes, demonstrating how participants understood the two terms.

Participant A clearly articulates the differences between the two terms:

> *"Robustness says, can you climb up the hill and take out the enemy when you get there. Then resilience is you lost to two people on the way to accomplishing your mission, your friends are gone, and also your mission is in trouble."* (Participant A, U.S. Army)

This statement captures a simple understanding of the difference between the terms put forward by Participant A. It is an applicable situation that all military personnel can understand. Additionally, what is presented here is exactly in line with the difference between both terms discussed during Part One, whereby Zissis (2019) when discussing resilience used terms such as 'major disruptions' and 'degradation parameters'. When asked if he had ever seen confusion between both terms Participant A replied: *"Not observed."*

Participant B outlines that:

> *"I think robustness is doing those things in a mission planning and execution cycle, that doesn't cause the mission to fail or become disrupted. Resilience is having a sense of attitude where if you do fail, you bounce back. I see robustness prevents failure, where resilience is something that's responsive. I was made more robust through my SF* (Special Forces) *experience, I had to be robust to get through the Q Course,* (Qualification) *but in going through the Q Course, I became more robust. I guess to me, resilience is a personal*

> *characteristic, but robustness is an operational paradigm; professional operators should be robust; good military units should not need to rely on resilience. I think in the American way of war, probably robustness is more encouraged or more indoctrinated than resilience. I think in the opening days of Afghanistan, that the guys showed robustness. For Iraq and Afghanistan, we started with robustness, but we ended up in both wars showing more resilience because we lost both wars."* (Participant B, U.S. Special Forces)

When asked if in the U.S. Military the terms are used interchangeably, Participant B stated:

> *"I think in the U.S. they're used correctly. I don't think they're used interchangeably. It has not been my experience. I think robustness to Americans is this size, or power projection type thing. We would regard a robust task force as being a task force that had plenty of attack aviation, plenty of naval gunfire, plenty of soldiers, plenty of tanks, plenty of artillery. My SF unit went from being* (repurposed) *an Arctic Strategic Reconnaissance Team, to being a Desert Wheeled Mobility Team, which is the complete opposite. I had to build a new set of capabilities. But changing to those advanced capabilities built our robustness. As I said before, robustness is the ability to move through problems. Resilience is the ability to bounce back. I would say if you're overcome by problems, you're not robust."*

In contrast, when asked about the difference between the terms Participant C states that: *"I was interested in this question, and I think you're probably right, I think certain people, if you presented with that question would struggle to give you clear examples."* (Participant C, DF)

When discussing the same topic, Participant D states the following, based on experience as a Class Officer in the Cadet School: "*I would have used the terms interchangeably. I think there's, there's no doubt about that. And I probably would have used the terms together, robust and resilient as in a way of describing people and/or scenarios that I was in."* When it was put to Participant D that robustness was not really mentioned in the cadet syllabus of training he stated:

> *"That would very much surprise me. Again, I have a recollection of resilience being a measure that we grade people against for their stage reports* (L.A. 150). *I would have used those terms interchangeably, robustness and resilience. In my mind, as I said previously, when I think about robustness, I was probably thinking in the physical terms, whereas resilience, I was probably thinking in mental terms."* (Participant D, DF)

This is aligned with the comments from Participant E:

> *"I suppose I'd have to admit that I would be one of those people who use resilience interchangeably with robustness. So, I was interested to read your Part One, and to maybe get a better understanding or the academic understanding of robustness and resilience. I would certainly say, once I read*

> *your Part One, that my views have changed, and I can now see the difference. Obviously, I think that I, and probably many others would use resilience when we when we mean robustness. I think my view certainly have changed."* (Participant E, DF)

It is evident from the analysis that those from the U.S. Military have a greater understanding of the terms and they do not use them interchangeably. This contrasts with the accounts given by the DF participants. This interchangeability reinforces what has been discussed in Part One, in particular from the DF Leadership Doctrine (2023) where resilience is equated to a person's ability to adopt and overcome life's challenges. Figures 1 and 2, provided by Clement et al. (2021) make a clear delineation between robustness and resilience, however the data provided above by the participants is in line with statements made by Capano and Woo (2017), that conceptual overlap exists in literature between the two terms.

Robustness in Cadet Training

Data extracts display that from the perspective of most of the participants from the U.S. Military and the DF, that the aim of cadet training is to develop robustness. As discussed in Part One, this is in line with the syllabus of training for cadets in West Point and for the German Army, but is at odds with the syllabus of training for cadets in the DF. This theme is illustrated in the quotes below, whereby the participants offered the following:

When reflecting on cadet training in West Point, Participant A states that:

> *"I would say in initial entry training as a cadet that robustness is probably more important; are they robust enough to take this lifestyle? And then over time* (post training) *you'll see their resilience. I do think there's a sequence in cadet training, socialisation and robustness are kind of a baseline."* (Participant A, U.S. Army)

Participant C offers the following, which agrees with the statement made by participant A:

> *"Robustness is front and centre of cadet training, it will help you day to day and week to week during the training. I don't think just because you get Commissioned as a Young Officer that means that you're resilient, that is associated with lifelong learning. Robustness is physical and mental toughness, and an ability to deal with physical challenges. Resilience then is a broader life skill. It comes from experience, rather than from singular events. Most of the cadets that are commissioned are robust, because they have been trained and have been brought up to a certain standard. Some are more robust than others, some will have struggled to get through, but they will be to a standard that is acceptable."* (Participant C, DF)

What is offered by Participant C is in line Gen. Stanley McChrystal's description from the introduction, in that you educate for resilience, and you train for robustness.

When discussing the same topic, Participant D contends that:

> *"The main focus of cadet training is absolutely to develop robustness. Military socialisation and long periods in the cadet school develops mental robustness. Additionally, when I was a cadet, I remember the Class Officer saying, get your physical fitness right. If you have your physical fitness right and you're on a tactical exercise, and you're really feeling the physical effects of it, it means your navigation, your decision making your judgement, every everything improves. I suppose for me, robustness is also about being physically fit, physically strong, but it also improves your mental agility to deal with various scenarios that might be thrown at you as well. In many ways robustness is about the physical, but it's also about having the mental capacity to deal with what life throws at you."* (Participant D, DF)

Participant E agrees with the other participants and additionally adds personal experience to the topic:

> *"I like the idea of robustness training for cadets. So yeah, I think you can train robustness, absolutely. I kind of see robustness as a muscle that you can train, you must exercise it and train it. You develop resilience throughout your life, it's something we all learn, I think we must learn it. But I think robustness fits into cadet training; like a 'route-march' trains robustness. We are all military, we must have a base standard of physical robustness, and mental robustness. I do adventure racing. Multi-day races, where you're out for five or six days and you're under extreme physical pressure or mental pressure trying to navigate; you're tired and hungry and for me that trains robustness. I find that by doing the long races you're out of your comfort zone and it improves your robustness. I think you can probably see this also in cadet training, all of them can improve their robustness throughout their training."* (Participant E, DF)

The data extracts presented above is in line with the literature presented above; in particular with that of the German Army, whereby structured robustness is deemed as an essential framework for both physical and psychological training throughout a soldier's career (Krueckel et al. 2019), and West Point cadet training, where robustness is a key tenet (Gilland 2023). It is also in line with SC. Meenan's recommendations (2023), where she contends that robustness is a requirement for cadet training. However, this is out of line with the Terms & Conditions and General Information Regarding Officer Cadetships (2023) and the Cadet Syllabus of Training (2019), whereby resilience is one of the competences required prior to being offered a Cadetship and additionally one of the objectives of the syllabus of training. Both Participants D & E provide context which would dispute these statements from the syllabus, whereby both discuss the link between physical fitness, robustness and the impact that this robustness can have during tactical exercises, not resilience. Participant D also contends that robustness is both physical and mental, and how improving your physical robustness can help improve your mental robustness, and they should not be separated. This dispute between the participants and the documentation is in line with the conceptual overlap of the terms, which was discussed in the previous theme.

Structured Failure in Training

Within the Literature Review it was contended that robustness prevents failure, whilst resilience is the ability to recover from failure (Stochino et al. 2019) and (Kovacs et al. 2022). However, both participants from the U.S. Military contend that that structured failure in the training environment can ultimately lead to an increase in an individual's robustness, assisting them in avoiding failure in the future when outside of supervised training. The failures outlined by the U.S. Military participants brought about in a sanitised training environment, and the acceptance of failure would not be considered a traumatic event, and therefore would not constitute resilience. U.S. Military participants describe a training system which is accepting of failure and agile enough to allow those that fail the opportunity to improve without adversely impacting on their development. Unfortunately, due to the annual intake of cadet classes, rather than bi-annual or each quarter, a failure in the Cadet School is dealt with differently, as outlined by Participant D.

Participant A when recommending how to develop robustness states that:

> *"If the culture of the of the military accepts failure, accepts that you can try and fail, and that's okay, including that you're not going to be penalised for it, then that's important. I've seen other militaries or even other services in the U.S. where failure is when they lose face. So, if they lose face by failing, then that's hard to recover from. The culture of those in that service or the Army has to accept that failure is okay. Then I think you're going to get more robust. At West Point, I remember as a cadet we had to take boxing and wrestling. You enter the boxing ring, and one cadet wins, and one cadet loses, and then you have got to keep going at it. So, the idea is that you can fail, you just pick yourself up, dust yourself off and get back at it. That's okay; it doesn't breed that failure is acceptable, it's still about winning; but the idea is to get up and go again, as long as the culture accepts that you can fail. As long as you learn the lesson and keep going. If you make the same mistake over and over, that's different. But if you fail, and then you recover and learn and grow, that's okay."* (Participant A, U.S. Army)

Participant B offers the same sentiment in relation to failure from experiences of Special Forces Selection:

> *"I went to Special Forces Selection Assessment Phase, and I failed the first time in July. I immediately asked the Cadre when I could come again; the Cadre said I can come in August, but you're not going to be pass because I was so beat up from the July experience. I came back in August, I passed, and I got selected. Then I went to the Field Phase, which was the basic phase. I didn't pass, I went in September, I was a little beat up from selection, a little slow and my land navigation was a little tired in my survival training. I had to repeat this phase, but I passed. I started Special Forces training in July of 1990 and didn't get my Special Forces badge until December 1992. For me, it was a two-and-a-half-year odyssey. Obviously at any point I could have simply quit. I could have said, okay, I didn't get selected. But I stayed with the programme, and I think I was rewarded by entering the Special Warfare Regiment. I think robustness is a*

> *built-in ability to avoid pitfalls, immediately address those pitfalls and counteract those pitfalls. I probably learned robustness as a Special Forces Operator, which I think is appropriate."* (Participant B, U.S. Special Forces)

When it was put to Participant B that it was surprising how much he had failed in his life, given that he had risen to the rank of Brig. Gen. and had such a distinguished career in the Special Forces, he stated that:

> *"Not true, most Special Forces Operators are going to be people who failed. We get guys who were First Captains at West Point with athletic scholarships. But we get a hell of a lot more guys that maybe got their ass kicked, spent time in jail, lost their job and those are the guys we want. To be a Special Forces Operator is a profession in suffering. The suggestion would be where do we programme failure into cadet training? What is failure? And what is acceptable failure?"*

When it was put to Participant D in relation to how comfortable the U.S. Military participants were with failure the participant stated:

> *"It's probably a social thing, in the States failure is not a bad thing. Bankruptcy is just a year effectively, and then you're off again. No one becomes a social pariah in the States because they fail. In the DF, that's a big thing. In a general sense, failure is a big thing. I suppose it takes a lot more to come back and to wash yourself of that failure. As Roy Keane says, fail, fail again, fail better, you know, to the point of success. Ultimately instructors with cadets are left with a big decision whether to pass or fail and what that might mean for the cadet. Pushing a cadet back 12 months is a big thing, and maybe they pass when they should fail and that doesn't help anyone because they aren't learning."* (Participant D, DF)

The data reflects a culture in the DF where failure is not accepted, whilst in the U.S. Military it seems to be embraced. The difficulty for the DF and cadet training is that a failure in the Cadetship can have huge ramifications on when you can move forward to commissioning, given that there is only one intake a year. In contrast with Participant B, when he failed his first Special Forces Selection course, he was able to try again the following month. This allows for a growth mindset and an increase in robustness. Participant A spoke about failure being accepted at a macro level and trained for at a micro level; stressing that as long as you are learning and improving then failure is accepted. Participant D contends that failure in the DF is a big thing, and due to the impact of failure in a Cadetship potentially pushing the cadet back into the next annual cycle, this ultimately leaves instructors with huge decisions that have huge consequences on a cadets' development.

Experiences of Resilience

An additional theme which was garnered from the analysis is that of the differing experiences that some of the participants endured when having to show resilience. The situations with which the participants experienced and resulted in them displaying resilience varied massively; this is not to say that they did not have to show resilience, it shows that resilience is a phenomenon (Edward, et al, 2009), and is based on your own experiences and your ability

to recover (Luthar et al. 2000). In that context, the suitability of resilience as a core competency for the syllabus of training is questioned, given that resilience is based on our own experiences. As discussed in the Literature Review, resilience is difficult to define and almost impossible to measure (Garcia 2018), therefore how training and exercises can be planned, executed and assessed seems almost impossible. Below are two extracts from two participants (U.S. Army and DF) outlining their experiences of resilience:

Participant A offers a detailed experience whereby he was required to display resilience:

> *"I was deployed to Afghanistan in 2006 as Brigade Commander of the 3rd Brigade Combat Team. During this time, we went through 16 months of continuous combat with one 2-week break. We had 45 killed, and 330 wounded; that was about 10% of the unit. The planned deployment was for a year, and then three weeks before we were going to hit the one-year mark, we got extended for another four months. At that time, this had not been done in the US Army previously. The yearlong deployment was considered as long as anybody would go on deployment, but then we got extended. At that time, the U.S. Army had 15 Brigades in Iraq, and one Brigade in Afghanistan, we were the one brigade in Afghanistan; so, we were spread out over 11 provinces and fighting in platoon size elements. We weren't in well-established forward operating bases (FOBs), no things like guard towers, so it really required robustness. We had a very focused preparation period to get ready for that deployment. it was all about our robustness. Then the resilience piece, I have to say, I didn't realise the how much resilience that was going to be required until we took our first deaths about three months in. We did a big operation in a place called the Kooringal Valley, which was a really tough fight with a three-Battalion operation. On the extraction, we had a helicopter crash and killed 10 soldiers, one of whom was a Battalion Commander and a friend; it took three days to find all the bodies. Then the notifications would begin as a body was found. I knew that Battalion Commander well, I carried his body off the battlefield and notified his wife, who I also knew, of his death. For me, personally, as a commander it was extremely difficult as you can imagine. That was like month three, and I had a year ahead of me. We had another incident where one of our soldiers died trying to save another wounded soldier in a fire fight, and he was awarded the Medal of Honour, the highest award for valour, but he died trying to save his fellow soldier. When the wounded soldier was rescued, the winch broke on the helicopter as he was being lifted up, and he also fell to his death. I mean, you just couldn't imagine anything more horrible than this."* (Participant A, U.S. Army)

What Participant A outlines is a rich and detailed recollection of the most difficult scenario that any military commander can ever imagine having to deal with. The scale of the deaths, the extension of the deployment out to 16 months and horrific scenarios with which his friend was killed is difficult to comprehend given our own experiences in the DF from past and present deployments. His commentary about the preparation for the deployment focussing on robustness, and the actual experience during the deployment requiring resilience not only displays an accurate understanding of the differences in the terminology, but also reinforces that training, even for war in Afghanistan is correctly focused on robustness.

However, as outlined previously by Luthar et al. (2000), resilience is shown when faced with significant adversity, and it is impossible to imagine a situation with greater adversity than what has been outlined in detail by Participant A.

In contrast to the example above, Participant C provides the following example of where they displayed resilience:

> "A*n examples of my own resilience would be that in recent years I've gone through a range of interview processes* (for promotion)*, and that is resilience, I can assure you of that, to keep going and going when not successful."* (Participant C, DF)

Although the two examples outlined by both participants vary massively in relation to their severity, according to the research conducted above, they would both fit the bracket of resilience. Southwick et al. (2014) reinforces this when he contended that resilience exists on a continuum, which maybe at different levels in different parts of life. From the differing examples provided for by two participants, and the fact that resilience, as contended by Southwick et al. (2014) exists on a continuum, the question must be posed; how do you plan, execute and assess training where resilience is the focus; why does induction officer training in the DF focus on resilience when preparation for war in Afghanistan focused on robustness; how do you ensure that there is standardisation amongst those assessing resilience, given that their experiences may differ massively (as shown by both participants) and what level on the continuum of resilience is you focus of training and assessment aimed at? Figure 2 in Part One provided an illustration of resilience from Clement et al. (2021), which showed a disturbance that ultimately leads to an individual displaying resilience. The fact that resilience is based on personal experience, this disturbance could potentially create an environment which exposes inductees and vulnerable students to 'serious threats', 'disaster', 'major events' and 'worst adversities' which could encroach on breaches of health and safety guidelines and laws. Given everything that Participant A has experienced in combat in Afghanistan, he is still an advocate for cadet training focussing on robustness, as outlined in Section 4.3: *"I would say in initial entry training as a cadet that robustness is probably more important; are they robust enough to take this lifestyle? And then over time* (post training) *you'll see their resilience."*

Summary

The data provided by the participants reinforces the literature discussed in Part One and it was guided by the methodology established in Part Two The findings were grouped into four themes relevant to the research question. The data and the findings are a key component in answering the research question, 'A Case for Robustness in Cadet Training'. What had previously been explored in Part One, has now been strengthened by the data provided by the participants. Central to this is the admission from the DF participants that they have used the terms for robustness and resilience interchangeably in the past, and call into question what members of the DF actually understand about the terms. The admission from most of the participants that the focus of cadet training is actually to develop robustness is key, as this disputes what is provided for in documentation related to cadet training in the DF. An interesting area of focus is that structured failure in the training environment is accepted and embraced in the U.S Military, however DF participants provide context as to why this is not

the case for cadet training in the DF. Finally, the difference in the scenarios provided by participants whereby they had to show resilience is vast. Given that resilience is based on personal experience, this calls into questions the appropriateness of it being included as a key tenet of cadet training, as this is almost impossible to standardise in a training environment. Part Four will detail the main findings, implications and recommendations arising from this study of individual's understanding of resilience in the DF, while also acknowledging the strengths and weaknesses of the research.

PART FOUR. Conclusions, Implications And Recommendations

This study explored robustness and resilience in order to make the case that robustness should become the key tenet for cadet training. A review of the literature in Part One identified discussion points that were further developed in the research and analysed in Part Three These discussion points transitioned into four distinct themes when they were combined with the data harvested from research participants through semi-structed interviews. These themes, augmented by the data are key in answering the research question, 'A Case for Robustness in Cadet Training'. Central from the data analysis is the misunderstanding between the terms that exist with DF members. Additionally, the data from the participants shows that the main aim of cadet training is in fact to develop robustness, and not resilience. Furthermore, the data shows that the culture of cadet training in the DF does not presently allow for structured failure during training. Finally, the data showed that there is a variance with individual experiences of resilience, and this indicates that it is impossible to standardise resilience in training as resilience is based on our own experiences. This part will summarise the key findings and their implications discussed, highlight areas for further research and suggest recommendations that are pertinent.

Finding One – Understanding of Resilience: The concerning fact around the conceptual overlap (Capano and Woo 2017) that presently exists with members of the DF when using the terms resilience and robustness is the impact that this ambiguity can have on a cadets performance (in particular when you review Figures 1, 2 & 3 (Clement et al. 2021)). This conceptual overlap may mean that instructors are providing a greater level of disturbance than the cadet can endure, and thus affecting that cadet's performance as they take time to recover. As shown in Figure 3, sometimes the disturbance is so great that they cannot recover back to an acceptable performance level, resulting in failure or injury. If instructors do not have a clear understanding of whether they are training for resilience or robustness, then the disturbance maybe beyond what the cadet can handle. This may mean that external criticisms of the Cadet School from groups like the Independent Monitoring Group, the Independent Review Group, or other investigations (S.C. Meenan) may continue.

Finding Two – Robustness in Cadet Training: The data shows that the main aim of cadet training is to develop robustness. This is in dispute with what associated documentation says, which ultimately results in cadets being incorrectly selected for the training that they are going to conduct. Additional to this, if cadets are being trained in robustness but are being assessed in resilience[2] then they are being inaccurately assessed. This may be an indication as to why some cadets struggle in the training environment; the competence that

[2] L.A. 150 Stage reports.

they were asked to display during the selection process differs to the experience and assessment in the training environment. An updated and streamlined process would remove these issues and would increase the training experience.

Finding Three – Structured Failure in Training: From the data it is evident that structured failure in a supervised training environment can increase robustness. However, this environment must be conducive to such failures, as has been shown in the U.S. Military, and must not be punitive towards the cadet and their progress. The annual intake of cadets does not represent an environment whereby failures in training can be rectified efficiently. A failure in training which results in a 'back-classing' pushes a cadet back by 12 months. This places pressure on the instructor deciding who should pass and who should fail, mindful of the impact of failure. Potentially some cadets pass, who should fail, and this is not conducive to learning or robustness.

Finding Four – Experiences of Resilience: Throughout this research the suitability of resilience as a key tenet for cadet training has been questioned. The data has shown how resilience can take many forms based on personal experience. However, for training and assessment, parity for the cadet is essential. Presently, resilience is assessed during cadet training, but the data has shown varying degrees of resilience, and how the participants would be viewing and assessing resilience through a different lens, based on their personal experience. This highlights the fact that resilience is not a suitable tenet for cadet training as it causes ambiguity for the assessors and the cadet.

Recommendations

All the research participants have provided valuable data, which when included with the review of the literature available has shown that there are gaps in four key areas for cadet training in the DF. Firstly, a more streamlined and joined up approach is required; this begins upstream during the selection process whereby the Terms & Conditions and General Information Regarding Officer Cadetships (Army) in the Defence Forces should be amended to remove resilience as a competence and replace it with robustness.

Secondly, downstream, the syllabus of training must be amended to reflect robustness as the key tenet of training and to clearly define what cadets expected to display when it comes to robustness. This should align with the competence definition of robustness during the interview process. Aligning these two areas will ensure that those selected have the robustness to undergo the training, and during training that this robustness is enhanced, thus providing an improved training experience for all cadets.

Thirdly, DF material that refers to robustness and resilience should be updated to include accurate definitions of both terms, to educate members of the DF and prevent the conceptual overlap in terminology, which has been shown by the research participants. This includes an amendment to the DF Leadership Doctrine, which should provide accurate definitions of both robustness and resilience. This should convey why robustness is essential to effective military organisations. Finally, failure should be accepted and embraced during cadet training, but this is difficult to achieve without a radical change to the annual intake cycle. The first step with this is to accept the benefits of structured failure in a supervised training environment. The second step is to put in place a mechanism/stream that does not

impact massively on a cadet's development from this failure. Recommendations for this mechanism/stream are outside of the scope of this research, however what the data shows is that the annual cycle that presently exists is not conducive to structured failure.

Areas for Further Research

During the course of this research two areas arose which were not within the scope of this paper, but which warrant further research. Firstly, the DF needs to provide a capstone definition of both robustness and resilience, based on literature, but that is specific to the organisations needs. The second area of research that should take place is how does the Cadet School provide a mechanism/stream that allows cadets to fail in a structured manner, without putting their progression back by 12 months as they repeat training with the next annual cycle of cadets. As shown by the research participants from the U.S. Military, structured failure should be accepted and embraced.

Conclusion

The genesis for this research was an attempt to improve the training experience for cadets, which would in turn attempt to decrease criticisms from external reporting bodies as to issues in training. The sentiment was never to advocate for easier training, but to ensure that those selected had the correct competence that could be enhanced during training. The research has shown that resilience is not the correct tenet to base cadet training around. Resilience can be considered as a 'state' rather than a 'trait' (Bartone & Hystad 2010); as a 'state', it is almost impossible to accurately train and assess. Alternatively, robustness is a trait (Nijhout 2002), it therefore it is more appropriate to cadet training for assessment purposes, it brings cadet training in line with international military institutions and if implement correctly it would ensure that cadets are correctly selected for the training being conducted. In the word of Gen. McChrystal, "education is resilience, training is robust" (McChrystal et al. 2015, p. 115)

Please note that the views expressed above are those of the author alone and should not be taken to represent the views of the Irish Defence Forces, the Cadet School or of any other group or organisation.

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