

**Depression, Burnout, Coping Mechanisms and Resilience amongst Temmincks
Pangolin Conservationists.**

Sarah Kempen

Department of Psychology, University of Pretoria

Psychology masters by dissertation

Dr N. Coetzee

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Plagiarism Declaration

Full Name: Sarah Kempen

Student Number: u19390115

Degree/Qualification: MA Psychology

Title of thesis: Depression, burnout, coping mechanisms and resilience in
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Date

Abstract

Temmincks pangolins are the world's most trafficked mammal. This animal is unique to Southern Africa, and just as rare are the conservationists who are working against all odds to save this species from extinction. While the incidence of poaching within South Africa is increasing, as is the value of a pangolin, the conservation workspace is rapidly becoming increasingly dangerous. In light of the above, one cannot help but be concerned for the well-being of the pangolin conservationists. Despite engaging in meaningful work, the conservationists are exposing themselves to prolonged stress that is likely to impact their well-being. The purpose of this study is to explore the well-being of Temmincks pangolin conservationists in terms of state and trait depression as well as burnout. Furthermore, the study aims to understand whether coping mechanisms or resilience mitigate the effect of the potential depression and burnout. Therefore, a sequential explanatory mixed-method design was adopted for this study. The quantitative data was gathered using the Maslach Burnout Inventory General Survey (MBI-GS), the State Trait Personality Inventory Form Y (STPI-Y) depression subscale, the Coping Orientations to Problems Experienced (COPE) questionnaire and the Predictive 6 Factor Resilience Scale (PR6). The qualitative data was collected utilising a semi-structured interview. Results indicated that the participants were currently experiencing both state and trait depression. Additionally, a third of the sample is at risk of developing burnout. In spite of this, the participants displayed the presence of goal focus, tenacity and collaborative spirit. These elements of resilience were shown to assist the conservationists to persist through adversity. The participants also showed the use of effective coping mechanisms, namely; accepting, planning and critically engaging with perceived stressors. These coping mechanisms were shown to enhance the presence of the resilience indicators. Thus, despite depression and burnout

impacting negatively on their well-being, the participants are utilising coping mechanisms and resilience which enhances their well-being. Recommendations included a developmental workshop focusing on fostering effective coping mechanisms to build stronger resilience and ward off potential burnout and possibly ameliorate current depression experiences.

Key terms: burnout, state depression, trait depression, coping mechanisms, resilience, Temmincks pangolin, wildlife conservationist, well-being

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Chapter 1

Introduction to the Study

1.1 Introduction

A pangolin is a shy, relatively reclusive scaly mammal that has no natural predators, and survives on eating ants (Makhete & Tihabye, 2015; McWilliam, 2018). There are eight species that occur in species-specific locations in Asia and Africa. Temmincks pangolins (hereafter referred to as TPs) are unique to Southern Africa (Makhete & Tihabye, 2015; McWilliam, 2018). While they have no natural predators, humans hunt all eight types of pangolin to use their scales in the production of traditional medicines. In some societies, their meat is consumed because it is believed to be a delicacy (Makhete & Tihabye, 2015). As a result, the pangolin is now one of the most endangered species in the world and on the brink of extinction (Molefe, 2018).

This scenario is reflected in South Africa, where incidents of poaching and the illegal wildlife trade of pangolin are on the rise (Molefe, 2018). As these threats to indigenous wildlife increase, the efforts of dedicated and passionate individuals increase to conserve the TP species (Pietersen, McKechnie, & Jansen, 2014). Many who engage in these efforts have forfeited lucrative, stable work environments in order to pursue their conservation work (Hu & Hirsh, 2017). They have a passion and a calling for the work they do and it is therefore perceived that they find their work meaningful and gain satisfaction from working with wildlife (Hu & Hirsh, 2017). However, given the significant increase in the poaching of TPs, which undermines the efforts of this group of dedicated individuals, one cannot help but be concerned for their psychological well-being. Despite the notion that TP conservationists are engaging in meaningful work, the environment in which they work exposes them to prolonged stress, which in turn could negatively impact their well-being. (Mjo, 2018).

Research has consistently shown that acute work related stress results in burnout and contributes to the likelihood of depression (Pienaar & Rothmann, 2006; Salvagioni, Melanda, Mesas, González, Gabani & De Andrade, 2017; Tennant, 2001). Within the stressful realm of TP conservation, the death of highly compromised pangolins or a failed sting operation could greatly contribute to a negative and stressful environment. Experiences such as these could emotionally deplete the TP conservationists' emotional reserves and negate their personal accomplishments within this stressful realm. In addition to this, the long hours with limited resources as well as the emotional connection created while spending time with the pangolin patients may create the breeding ground for burnout to occur (Maslach & Leiter, 2016a).

Similar to the experience of burnout, the experience of depression is a critical indicator of the TP conservationists' well-being (Spielberger & Reheiser, 2009). Investigating depression as a non-clinical experience involves understanding the TP conservationists' experiences of depression as a personality trait versus a transitory emotional state. The correct identification and subsequent awareness and understanding of the TP conservationists' emotions, such as state and trait depression, will greatly assist in coping with these emotions and thus assist in becoming more resilient toward them (Spielberger & Reheiser, 2009).

While close relationships have been found to exist amongst depression, burnout and coping, these studies predominantly address work-related depression in blue-collar, white-collar and helping professions (Krohne, Schmukle, Spaderna, & Spielberger, 2002; Tennant, 2001). The dynamic and process oriented nature of coping suggests that TP conservationists can attempt to proceed through a stressful occasion (Livneh & Martz, 2007). Additionally, the use of coping strategies has been shown to decrease the effects of stress, burnout (Rothmann, Jorgensen, & Hill,

2011) and depression (Spielberger & Reheiser, 2009). However, not all coping strategies are effective in restoring well-being (Nortje, 2003; Wiese, Rothmann, & Storm, 2003). When insufficient or ineffective coping mechanisms are employed, individuals are more likely to experience burnout (Mostert & Joubert, 2005). Similar to coping mechanisms, resilience involves a form of adaptation (Masten 2001). However, while resilience determines how an event is appraised, coping refers to the strategies utilised in order to handle the encounter perceived as stressful (Fletcher & Sarkar, 2013). Research has indicated that resilience is fundamental in combatting workplace stress and burnout, particularly in helping professions (Grant & Kinman, 2015; O'Dowd et al., 2018) as well as within a corporate workspace (French & Holden, 2012). However, all of the studies have focused on human helping professions as well as traditional corporate workspaces. No research delineates the occurrence of these constructs within the realm of professionals working within conservation.

1.2 Problem Statement

Being a finite group that has the necessary skill and knowledge to treat TPs, it is vital that the TP conservationists remain engaged in their conservation efforts. While much research has been conducted to understand the relationship between burnout and coping mechanisms, particularly in South African helping and service professions (see Pienaar & Rothmann, 2006; Mostert & Joubert, 2005; Nortje, 2003; Pienaar & Rothmann, 2003; Rothmann et al., 2011; van der Colff & Rothmann, 2009; Wiese et al., 2003), no studies could be found on the effects of being exposed to prolonged stress associated with animal conservation, particularly when conserving an endangered species such as the TP. Limited research in the realm of ecopsychology merely focuses on the broad emotional experience of conservationists regarding the degradation of the planet and climate change (Fraser, Pantescio, Plemons, Gupta & Rank, 2013). Resources utilised in an attempt to find

information on this included an extensive search on the University of Pretoria's Department of Library services online Journal listing, comprising a search including all the journal databases as well as Google Scholar. The founding directors of the only TP focused research entity in South Africa, the African Pangolin Working Group (hereafter referred to as APWG), indicated that no research has ever been conducted on the well-being of TP conservationists (personal communication, December 11, 2019; Wright & Jimerson, 2020). Additionally, the veterinarian working at the primary care facility Johannesburg Wildlife Veterinary Hospital (hereafter referred to as JWVH), as indicated by the Gauteng Department of Rural and Agricultural Development (hereafter referred to as GDARD), for TPs, Dr Karin Lourens (personal communication, December, 11 2019), advised that she is not aware of any studies focusing on the abovementioned either.

Thus, the benefits of this study will be to gain further understanding of burnout, state and trait depression, as well as determining if resilience and coping mechanisms assist TP conservationists. Lastly, in a developing country that is rich in diverse wildlife that is being poached at an alarming rate, more information on the TP conservationists at the forefront of these efforts could shed important light on the impact of conservation efforts on the well-being of these conservationists. Learning about TP conservationists in this manner will highlight the need to maintain the mental health and well-being of such individuals in order to enable them to continue with their conservation work.

1.3 Aim and Objectives

1.3.1 Aim

The primary aim of this study is to determine the prevalence of depression and burnout in TP conservationists, and furthermore, if coping mechanisms and resilience serve to mitigate this.

1.3.2 Objectives

The following objectives were set to attain the primary aim of the study:

- 1) To determine the prevalence of burnout and state as well as trait depression among TP conservationists.
- 2) To establish if the TP conservationists are coping with the prolonged stress they are exposed to and, if they cope, which coping mechanisms they use.
- 3) To investigate the incidence of resilience displayed by TP conservationists.
- 4) To determine if relationships exist between burnout, state and trait depression, coping mechanisms as well as resilience within the context of TP conservation.
- 5) To investigate the strength of the relationships that are detected between the constructs and to determine to what extent related constructs impact one another.
- 6) To gain an understanding of the subjective experiences of the TP conservationists with regard to state and trait depression, burnout, coping mechanisms and resilience.

1.4 Chapter Outline

The current chapter (Chapter 1) serves as a preamble to the study, and it introduces the problem statement, as well as the aim and objectives formulated to execute the study.

Chapter 2 consists of a complete discussion of the constructs involved within the study, namely: burnout, depression, coping mechanisms and resilience. These are discussed in relation to TP conservationists and their overall well-being.

Chapter 3 explains the research methodology employed by the study. Within this chapter, the aim, objectives, research design and sampling procedure will be revised. Each phase of the research will be explored, namely, the quantitative phase, with psychological assessments, followed by the qualitative phase, which included a smaller sample of participants completing a semi-structured interview. These phases will be detailed with regard to data collection, the instruments used as well as the procedures followed. Thereafter, an overview of data analysis as well as ethical considerations will be discussed.

Chapter 4 and Chapter 5 will include the research results of the quantitative and qualitative phases respectively. Thus, Chapter 4 will focus on the results of the psychological instruments utilised, and Chapter 5 will focus on the thematic analysis of the semi-structured interviews.

Chapter 6 focuses on discussing and evaluating the results presented in Chapters 4 and 5, and ends with a conclusion for the findings presented. Thereafter, limitations of the study are pointed out, and recommendations for further research are given.

1.5 Conclusion

This chapter introduced the plight of the most trafficked mammal: pangolins. This set the scene for the TP conservationists who work within a stressful work environment in order to try and save the pangolin species specific to South Africa from extinction. Given the stressful work environment and conditions, burnout and

depression were introduced as possible experiences due to their work environment. Coping mechanisms as well as resilience were suggested as potential moderators to the experience of burnout and depression. The problem statement was presented, along with the aim and objectives of the study. In the following chapter, attention will be given to a discussion of the constructs under investigation and how they related to the chosen sample population, TP conservationists.

Chapter 2

Literature Review

2.1 Introduction

This chapter will introduce the reader to the stressors associated with TP conservation. The focus will then shift to the constructs under investigation within the context of pangolin conservation, namely burnout, depression, coping mechanisms and resilience. Brief mention will also be made of how these constructs are related to mental health and well-being.

2.2 Stressors associated with TP conservation

TPs currently have the highest protection status in South Africa and are considered more endangered than rhino and elephants. They are thus deemed a critically endangered species (Regchand, 2019). As there is an increase in poaching, TP conservationists experience added pressure to save each pangolin that crosses their paths (Pietersen et al., 2014). At the frontline of these rescue operations are members of the South African Police Services (hereafter referred to as SAPS) and informants, who endanger their own lives when rescuing pangolins from poachers and crime syndicates (Wright & Jimerson, 2020). Pangolins are worth thousands of rands as a result of the high demand for the species for traditional medicine associated with certain cultural beliefs (Pietersen, Jansen, Swart & Kotze, 2016). The conservation effort of TPs involves, amongst other tasks, the reintroduction and monitoring of rescued TPs into the wild.

Pangolins are predominantly nocturnal mammals, foraging in evenings on a variety of ants (Bega, 2020; Chao, Li & Lin, 2020). TP conservationists often work alone due to the scarcity of TP conservationists. Another reason why TP conservationists work alone relates to the sensitive nature of the species. Pangolins

are solitary nocturnal animals whose behavior indicates that they associate negative experiences with humans post-poaching (Bega, 2020). It is hence better for the pangolins' well-being to be exposed to as few humans as possible. Having one TP conservationist working at a time with the pangolins, however, could be dangerous since re-introducing the pangolins to the wild often means that individual conservationists are working alone at night while taking care of a species with a high monetary value attached to it. The threat of the TP conservationist being hurt during the poaching of a pangolin is thus very real.

Figure 2.1

Temmincks pangolin, S Kempen, 2018.



TP conservationists though, do not only include rehabilitators. Other individuals involved with TP conservation are informants, police officials, field workers, veterinarians and veterinarian nurses; all of whom experience a significant amount of stress as a result of their work with this endangered species (McWilliam, 2018). Informants and police officials risk their lives in rescuing the TPs in carefully planned sting operations (Bega, 2020). Rehabilitation specialists experience the stress of receiving a highly compromised pangolin from the illegal wildlife trade (Wright &

Jimerson, 2020). This includes documenting evidence and forensic sampling for legal purposes (Wright & Jimerson, 2020). A veterinarian and veterinarian nurse professional completes a thorough physical exam, where blood and faecal samples are taken (Wicker, Lourens & Hai, 2020). Depending on the state of the pangolin, it might need to be hydrated, or it might need further examination via a computerised tomography scan (Wright & Jimerson, 2020). The animal is weighed and all these values are recorded and assessed concurrently by rehabilitators and veterinary professionals (Wicker et al., 2020). TP conservationists walk the TPs every evening for between four to six hours to forage naturally on a variety of ants (Bega, 2020). Should the pangolin not gain sufficient weight, the pangolin is tube fed with additional nutrients (Wright & Jimerson, 2020). This ensures their health improves and that they become strong enough to forage successfully without supplementing their diet (Wright & Jimerson, 2020; Wicker et al., 2020).

The veterinary and rehabilitatory care in the veterinary hospital setting is highly stressful, particularly as little is known about the species in general and about the normal blood values in the TP species (Bega, 2020). Normal blood values are needed to understand the status of the TPs as well as how to treat them effectively (Bega, 2020). Thus much of the treatment protocol is novel and being created currently as the patients arrive at the JWVH premises from the illegal trade (Bega, 2020). This means that the health and livelihood of the pangolin patient rests in the hands of the veterinarian professionals who are currently learning and creating treatment protocols, without any knowledge to rely on (Bega, 2020). Thus it appears that those actively involved with TP conservation are working in a highly stressful environment, particularly when the pressure is on them to make certain that the species do not become extinct (Regchand, 2019).

Figure 2.2

Computerised tomography scan, A Pienaar, 2020.



As was mentioned previously, the TP conservationists who go out each evening with the pangolins to forage are alone in a vast open area of grassland, shrubbery and ant nests. This area mostly offers no protection to them or their patients from others who may witness the animal, know its value in the illegal wildlife trade, and potentially harm the TP conservationists or the pangolin. In addition to this stress, it is expected from the TP conservationist to maintain a sufficient distance from the TP to ensure they do not scare the already traumatised animal. On the other side, they must take precautions to not lose the pangolin (Bega, 2020). Pangolin conservationists also experience the stress of hoping the pangolin eats a sufficient amount while out so that they can heal and gain weight (Wright & Jimerson, 2020).

Figure 2.3

Evening foraging with a Temmincks pangolin, S Kempen, 2018.



Once the pangolin is ready for release, field guides are appointed to monitor the TP for 18 months – using telemetry trackers attached to the pangolin. This entails monitoring its habitat, overall health and behaviour as well as weight (Wright & Jimerson, 2020). The field guides need to communicate this information to the rehabilitation team, and should there be any concerns, the pangolin needs to be retrieved and brought back to the JWVH for re-examination. Monitoring pangolin post-release is done on foot in big five reserves, thus placing the field guides at significant risk of being harmed by predatory animals as well as potential poachers on the reserves. The overall health and well-being of the released pangolin as well as its safety is placed on the field guide, who generally has multiple pangolins to monitor regularly and thus they form part of the TP conservation group too.

The above discussion illustrates that TP conservation involves individuals from diverse backgrounds. Subsequent to this, when mention is made in the study of TP conservationists, it will refer to any of those individuals who are actively involved in

practical TP rehabilitation and release as described above. Active involvement therefore includes one or more of the following: confiscation, rehabilitation, medical intervention, release and post-release monitoring.

The discussion presented thus far illustrates that TP conservationists work in highly stressful environments (Mjo, 2018). Researchers have warned that prolonged exposure to stressful environments can lead to the occurrence of burnout (Freudenberg, 1974; Pienaar & Rothmann, 2006). In the same vein, Fraser et al. (2013) noted that climate change conservationists experience depression as a result of the stressful nature of their work. TP conservationists are therefore not only at risk of suffering from burnout, they might also be at risk of developing depression. These two components, along with coping mechanisms and resilience will be explored further in order to understand their potential influence on TP conservationists.

2.3 Burnout

The relationship that individuals have with their work environment has long been of interest to researchers, particularly when the relationship appears to go awry. Initially, burnout was described as a phenomenon that existed predominantly in individuals who worked within human services (Maslach & Leiter, 2016a). Early research by Freudenberg and Maslach, who were studying emotions within the workplace, discovered that emotional depletion and a resultant loss of commitment were frequently becoming common experiences, particularly in the human services (Mostert & Joubert, 2005). Since its initial discovery, it is now deemed to be a psychological syndrome in response to chronic stress at work. Job stress occurs when the demands of one's work exceeds the individual's resources to handle them (Mostert & Joubert, 2005). While burnout was initially studied within the human services field, its prevalence has broadened to include other realms in addition to the traditional human service industries (Mostert & Joubert, 2005).

2.3.1 Conceptualising Burnout

Originally conceptualised by Freudenberger (1974), burnout was described as “becoming exhausted by making excessive demands on energy, strength or resources” (p.159). Freudenberger referred to the culmination of emotional depletion, lack of motivation and reduced commitment as burnout (Rothmann, 2003; Schaufeli, Leiter & Maslach, 2008). While it is perceived that work stress may cause burnout, stress and burnout are two distinct concepts (Wiese et al., 2003).

Before one investigates burnout, it is worth highlighting the definition of stress and its association to burnout. In this study, stress is defined as a collaboration of factors in the person’s work environment relationship that is appraised as exceeding one’s coping mechanisms, is challenging, and tiring, which then endangers well-being (Görgens-Ekermans & Brand, 2012; Mostert & Joubert, 2005). These factors might include the long working hours of TP conservationists, dealing with unpredictable sting operations, dealing with the burden of being responsible for the health of the world’s most trafficked mammal, as well as experiencing the death of a TP.

Stress can be a temporary experience to an adaptation process, or to current discomfort felt in a workspace that might be misaligned with the individuals’ ability to cope or their perceived ability to meet the work demands (Mostert & Joubert, 2005). When job demands exceed an individuals’ resources or perceived ability to complete the tasks, stress is likely to occur (Mostert & Joubert, 2005).

Burnout is considered to be a chronic or prolonged exposure to stress (Görgens-Ekermans & Brand, 2012; Khamisa, Oldenburg, Peltzer & Ilic, 2015; Salvagioni et al., 2017; Wiese et al., 2003). This suggests that an individual with stress should be able

to resume their normal level of functioning by an adaptation process whereas burnout includes a failure of successful adaptation (Wiese et al., 2003). Whereas stress can occur anywhere, burnout is further conceptualised in the context of individuals' relational transactions within the workplace. Thus, it is a consequence of the interaction between an individual and their work as well as prolonged and acute experience of stress (Görgens-Ekermans & Brand, 2012; Maslach, Schaufeli & Leiter, 2001; Wiese, et al., 2003).

Work that is too challenging or unrewarding might contribute to stress resulting in burnout (Görgens-Ekermans & Brand, 2012). A prolonged imbalance or perceived imbalance between what a work environment demands and an individual's ability to meet the work demands can also lead to burnout (Mostert & Joubert, 2005). Therefore, burnout does not only occur from traumatic experiences or major life events, but further suggests that it can emanate from prolonged exposure to work stress (Khamisa, 2015; Wiese et al., 2003). Thus, should TP conservationists experience too many challenges continuously and consecutively for a prolonged amount of time without any respite, this may turn the experienced stress into burnout. TP conservationist work can be compared to human helping professions or services based on the similarities of caring for a patient, experiencing death and balancing an empathic connection to the patient (Mostert & Joubert, 2005). However, while TP conservationists may work in a stressful environment due to the job demands and personal resources balance, their work tasks and experiences themselves can also be seen as traumatic in nature, such as the death of a pangolin, or a failed sting operation. Therefore, their potential for burnout is twofold.

Burnout exists in the work environment, and particularly within the helping professions. This would include high caseload, prevalence of negative client feedback as well as lack of resources to assist patients effectively (Maslach & Leiter,

2008; Maslach et al., 2001; Schaufeli et al., 2008). Similarly, with TP conservationists, it is theorised that the high prevalence of TP saved from the illegal wildlife trade might encompass some relief as the animals have escaped an ill fate. However, the enormous responsibility to assist the rescued TP who is usually highly compromised might entail negative consequences, such as the compromised creature succumbing to its injuries and dying (McWilliam, 2018; Mjo, 2018). Additionally, as TP conservationists work within a non-profit structure, they might struggle to receive the necessary resources that they require. These resources might include expensive telemetry in order to continuously track the pangolins, support from colleagues, medical equipment and medication. Thus, it is possible that the work environment of TP conservationists might also include undesirable feedback and a lack of resources that could also result in negative feedback, amongst other concerns. This negative feedback might involve a TP not getting adequate care and dying if medical equipment is not available or not knowing the outcome of the rehabilitation journey if tracking equipment cannot be afforded.

In addition to the above description of burnout, it also involves a state of exhaustion; a cynical outlook toward one's value-add and being unconvinced that one is able to successfully perform (Schaufeli et al., 2008; Wiese et al., 2003). This occurs in relatively 'normal' individuals who do not necessarily have any psychopathology present (Wiese et al., 2003). Burnout not only exhibits negative outcomes for the individual, but for the organisation or workspace too (Wiese et al., 2003).

Within the international literature of wildlife rehabilitation and conservation as workspaces, much research exists regarding compassion fatigue. This led the researcher to consider this as a term that possibly encompasses burnout in the wildlife conservation sphere. Compassion fatigue, also known as secondary trauma

and vicarious traumatisation, can be described as empathy-based strain (Rauvola, Vega & Lavigne, 2019). Empathy-based strain is a possibility to anyone working within a helping profession (Rauvola et al., 2019; Sprang, Clark & Whitt-Woosley, 2007). These terms are broadly described as a combination of trauma exposure (stressor) and empathy (affective reaction to patient) (Rauvola et al., 2019). The stressor, or trauma, might occur once, be reoccurring or enduring. The trauma should not be direct, but rather secondary, and there needs to be the propensity to feel deeply for the victim who experienced the trauma (Rauvola et al., 2019). In this way, the empathy could result in the caring professional creating symptoms within themselves that parallel those of the original victim (Rauvola et al., 2019; Sprang et al., 2007).

While burnout is a gradual process, the experience of empathy-based strain can be acute, and follow the patterns and experience of stress in general (Rauvola et al., 2019; Sprang et al., 2007). Parallels between empathy-based strain and burnout include: experiencing stress-based symptoms, fatigue and a decrease in work satisfaction (Rauvola et al., 2019). However, the requirements for the experience of empathy-based strain (secondary trauma and empathic response) as well as the timing of the strain experienced are different to burnout (Rauvola et al., 2019).

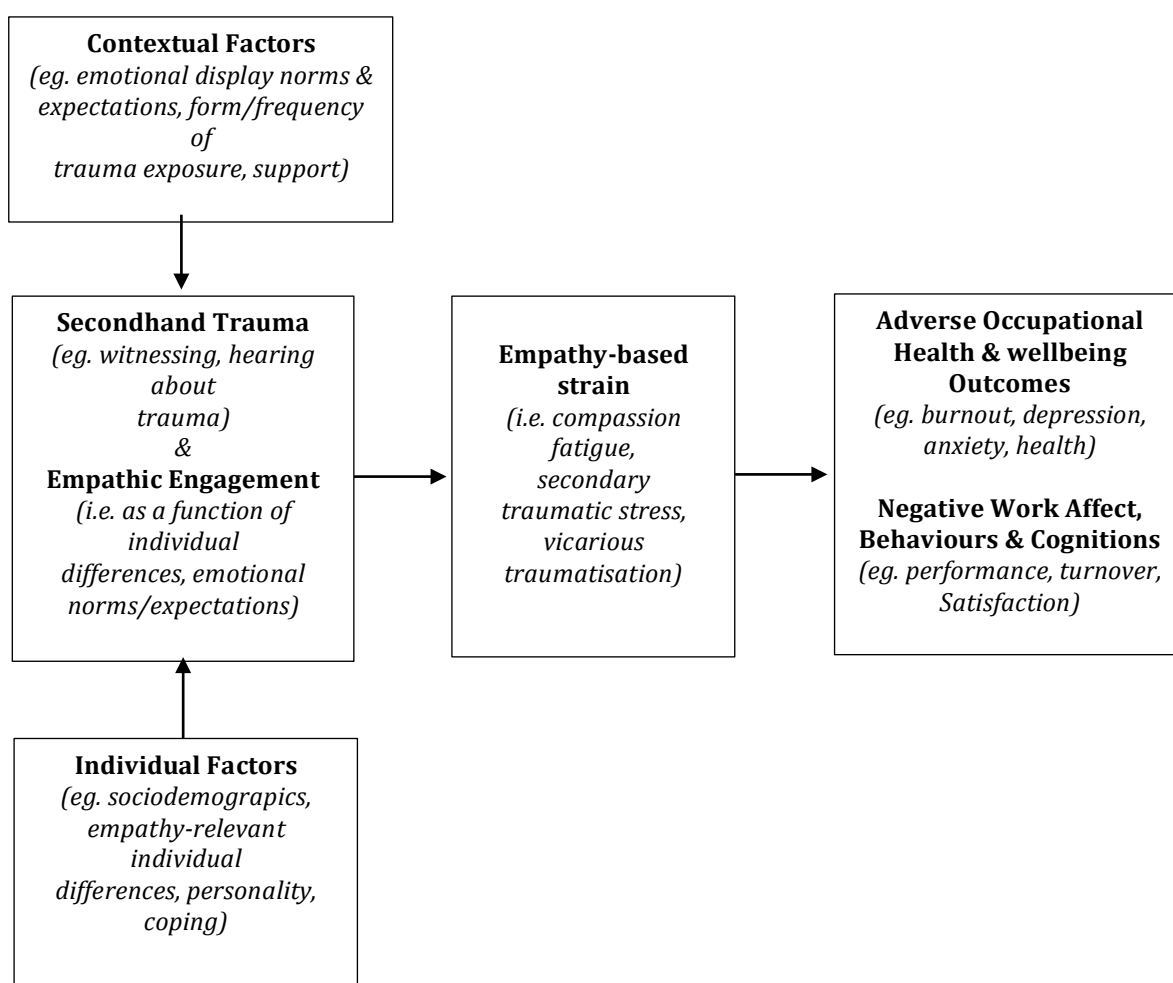
Similar to burnout, empathy-based strain has consequences for health and well-being, quality of work outputs, as well as other negative reactions in behaviour (Rauvola et al., 2019; Sprang et al., 2007). Prolonged or acute empathy-based strain results in burnout, and thus can be an antecedent to burnout (Rauvola et al., 2019). However, while former research on wildlife conservationists has solely focused on this construct, this research is focusing solely on burnout. From the above explanation, burnout encompasses empathy-based strain, and burnout results from the experience of prolonged and acute empathy-based strain (Rauvola et al., 2019;

Sprang et al, 2007). Figure 2.4 represents the progression of stress into empathy-based strain, and then burnout.

Thus, based on the above clarification and for the purposes of this study, burnout is defined as the experience of prolonged stress and/or empathy-based strain. Furthermore, burnout results from a compromised immune system leading to the experience of extreme exhaustion due to an excessive demand on available resources.

Figure 2.4

Model revealing the progression of stress to empathy-based strain to burnout (Rauvola, Vega, Lavigne, 2019).



2.3.2 Theoretical Explanations of Burnout

The creation of the concept and experience of burnout was borne out of the observations of individuals in people-centred professions (Maslach & Leiter, 2016a). However, following these observations, theories depicting how burnout develops as well as the outcomes thereof have since been developed (Maslach & Leiter, 2016a). Most prominent theories relating to burnout will be considered here, namely: the multidimensional theory of burnout (Wiese et al., 2003) as well as developmental theories of burnout (Rauvola et al., 2019).

2.3.2.1 Multidimensional Theory of Burnout. Maslach conceptualised burnout to comprise three categories: exhaustion, cynicism and lack of professional efficacy (Khamisa et al., 2015; Maslach, et al., 2001; Wiese et al., 2003). Central to burnout is the experience of exhaustion. Exhaustion includes the feeling that one's physical and emotional resources are depleted (Maslach & Leiter, 2008; Wiese et al., 2003). Within TP conservation, it is thus possible that a TP conservationist might feel fatigued both emotionally as well as physically should they be experiencing burnout.

Exhaustion also prompts additional actions such as distancing oneself from work. This is known as depersonalisation or cynicism, and is the second component of burnout (Maslach & Leiter, 2008; Maslach et al., 2001). Depersonalisation occurs on both a mental as well as an emotional level, the extent of which is dependent on the nature of the work (Maslach et al., 2001). Specifically, individuals working within a human helping profession may display more of an emotional distancing where the individual may disengage or actively ignore the characteristics that make the person they are assisting more than an impersonal object (Maslach et al., 2001). Thus, one may become detached or appear callous to certain aspects of their job (Wiese et al., 2003). A human helping profession is similar to an animal helping profession, as in both instances care is being provided to another being. Therefore, it is possible that

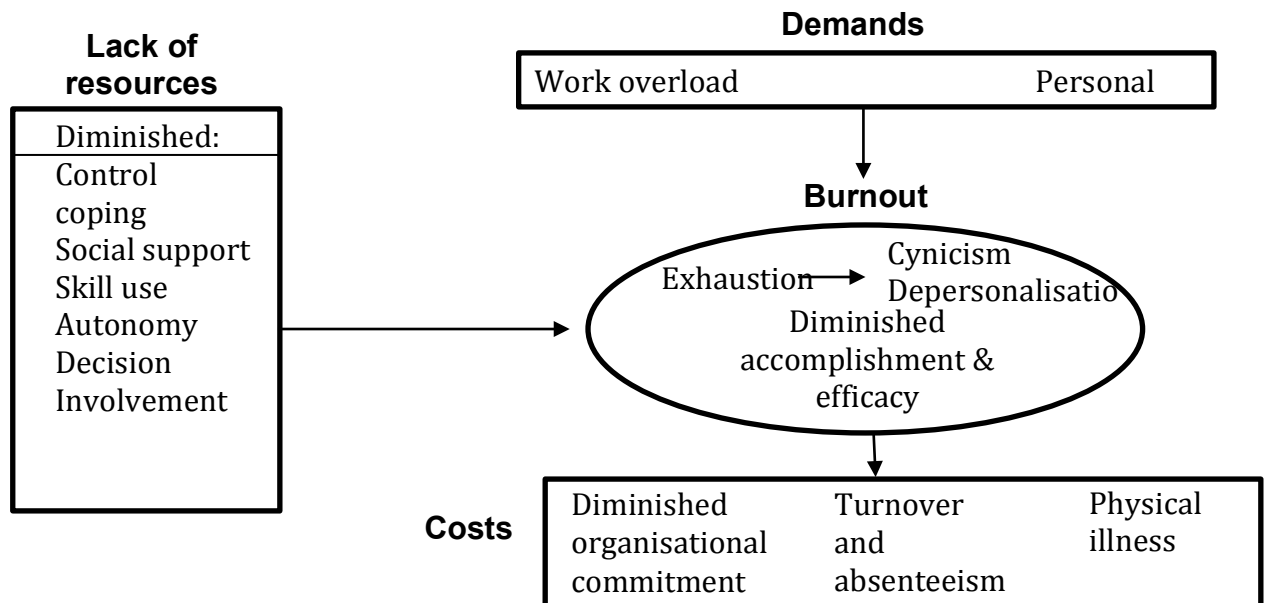
the detached state to one's job tasks as well as emotional distancing to the patient (in this case a TP) may occur. TP conservationists might even try to ensure that they are emotionally distant and try not to form a connection with the TP that they are assisting in their conservation and rehabilitation efforts.

Lastly, the third component, inefficacy, suggests that a reduction in personal accomplishment occurs (Maslach & Leiter, 2008). This might mean that the experience of exhaustion and depersonalisation (the other two components of burnout) erode one's sense of self efficacy, or the mere experience of exhaustion and depersonalisation decreases one's ability to feel accomplished in their work of conserving TPs (Maslach & Leiter, 2008; Maslach et al., 2001). This component is a self-reflection of one's current competence and productivity (Maslach & Leiter, 2008; Wiese et al., 2003). Maslach et al. (2001) suggest that inefficacy arises from the lack of resources, whereas exhaustion and depersonalisation (or cynicism) arise from the work environment and connections therein.

As the central components to the Multidimensional theory, the correlation between exhaustion, depersonalisation and self-efficacy have been considered (Maslach & Leiter, 2008). Exhaustion has been reported most widely, and reflects prolonged tension (Maslach & Leiter, 2008). Exhaustion is stated to prompt distancing from one's job and is an immediate response to exhaustion (Maslach & Leiter, 2008). Exhaustion and cynicism (depersonalisation) have frequently been reported to correlate (Maslach & Leiter, 2008). Lastly, reduced efficacy has a less prominent correlation than the first two components of burnout have with each other (Maslach & Leiter, 2008). However, this does not detract from its necessary impact on the individual as the experience of burnout erodes a sense of accomplishment (Rothmann, 2003). The multidimensional theory of burnout is depicted in Figure 2.5.

Figure 2.5

The Multidimensional Theory of Burnout (Maslach, 1998).



2.3.2.2 Developmental Theories of Burnout. Subsequent theories to the initial Multidimensional theory of burnout involve developmental theories of burnout (Maslach & Leiter, 2016a). Developmental theories of burnout have focused on the experience of prolonged stress and the imbalances experienced leading to the experienced job stress and burnout (Maslach & Leiter, 2016a). The Job Demands-Resources Model (JD-R) is one such developmental theory (Bakker & Demerouti, 2007). The JD-R model was proposed by Bakker and Demerouti, and suggests that burnout arises when excessive job demands are felt with not enough resources to fulfil the demands (Bakker & Demerouti, 2007; Maslach & Leiter, 2016a; Rauvola et al., 2019; Schaufeli et al., 2008). Thus, resources are insufficient to meet the work demand. Adding to this, the lack of time to regenerate depleted energy further aggravates the demand/resource imbalance (Rauvola et al., 2019; Schaufeli et al., 2008). This is akin to a TP conservationist not having the necessary pharmaceutical

medicine to treat the TP or not enough funding to purchase the expensive telemetry needed to track the TP post-release. Job demands are associated with exhaustion whereas lack of job resources has been shown to be associated with depersonalisation and cynicism (Rothmann, 2003).

Another developmental theory is Hobfall's Conservation of Resources (COR) theory (Hobfall, Vinokur, Pierce & Lewandowski-Romps, 2012; Krohne, 2001). The COR theory suggests that burnout is experienced when persistent threats to resources occur (Maslach & Leiter, 2016a; Rauvola et al., 2019). Additionally, people strive to protect and keep things that they value (resources) (Hobfall, et al., 2012; Krohne, 2001). These resources could be personal, social or material in nature (Hobfall, et al., 2012). According to Hobfall et al. (2012), the preservation of these resources is what ensures someone is resistant to experiencing burnout. The gain of a resource, such as additional conservationists on a TP team, support from the rest of the conservation team or the addition of technology to assist in tracking TPs that have been released might mitigate the effect that persistent threats, such as increased poaching, would have on the conservationist. However, the experienced loss of a resource has shown to have a greater impact on people than the mitigated impact of gaining a resource (Hobfall, et al., 2012).

This loss of a resource, or should the possessed resources not meet the demands of the specific situation, are known as threats (Krohne, 2001; Rauvola et al., 2019; Wiese et al., 2003). Thus, should a poacher identify the sting operation and flee, or perhaps have additional poachers with them that outnumber the TP conservationists, this would result in a massive threat and place significant demand on the conservationist (Hobfall, et al., 2012). Whether this is perceived or not, or impending or current, the individual may suffer burnout (Maslach & Leiter, 2016a).

While having a slightly different focus, the JD-R and COR theories both suggest that factors that cause the experience of burnout lead to negative outcomes (Maslach & Leiter, 2016a). Thus, these approaches appear to have a similar trajectory to the Multidimensional theory of burnout purported by Maslach and colleagues, albeit with a more organisational view (Maslach & Leiter, 2016a). Additionally, in support of the Multidimensional theory of burnout, job demands has consistently correlated with exhaustion, whereas job resources has correlated with cynicism and professional efficacy (Wiese et al., 2003). However, as the Multidimensional theory of burnout encompasses any context, and while the JD-R and COR theories have mostly been applied to organisational contexts, the Multidimensional theory of burnout is preferred for this study instead of the developmental theories (Maslach & Leiter, 2016a). Additionally, Maslach created the Maslach burnout inventory within the Multidimensional theory context, which has been utilised in South Africa, and will be applicable to the conservation context of this study.

2.3.3 Symptoms of Burnout

The experience of burnout involves physiological and psychological symptoms (Maslach & Leiter, 2008; Wiese et al., 2003). These will be discussed below.

2.3.3.1 Psychological and behavioural symptoms of burnout. Psychological symptoms experienced with burnout include a sense of failure, as well as a loss of motivation (Maslach & Leiter, 2016b; Wiese et al., 2003). Burnout may also lead to feeling frustrated, angry and cynical (Freudenberger, 1974). Maslach and Leiter (2008) suggest that the psychological symptoms experienced by those suffering from burnout mirror those presented for diagnosis for neurasthenia and include severe emotional exhaustion. Burnout alters the levels of proteins, cortisol and nucleotides in the brain, similar to levels that are recorded in individuals with depression and

mood disorders (Yaribeygi, Panahi, Sahraei, Johnston & Sahebkar, 2017). Thus, it is possible that individuals who experience burnout might also experience depression (Freudenberger, 1974; Maslach & Leiter, 2016b; Wiese et al., 2003). Psychological symptoms such as depression can also lead to decreased work productivity due to a negative demeanour (Maslach & Leiter, 2008; Maslach & Leiter, 2016b). The abovementioned psychological symptoms are coupled with physiological symptoms of burnout too (Maslach & Leiter, 2008).

2.3.3.2 Physiological Symptoms of Burnout. By mediating processes in the central nervous system and neuroendocrine system, burnout affects the optimal functioning of the immune system (Yaribeygi et al., 2017). An impaired immune system increases the likelihood of infections and illnesses, thus suggesting that individuals with burnout are more likely to frequently get sick (Maslach & Leiter, 2008; Yaribeygi et al., 2017).

A positive correlation has been found between acute and chronic stress (burnout) and cardiovascular disease (Yaribeygi et al., 2017). By activating the autonomic nervous system (ANS), burnout has a harmful effect on the cardiovascular system. Burnout can activate the sympathetic nervous system (SNS), a component of the ANS, which will lead to increased blood pressure, and cause conditions that can lead to heart arrhythmia heart attacks (Maslach & Leiter, 2008; Yaribeygi et al., 2017). The activation of the SNS is associated with the fight or flight response. Thus, shortness of breath may also be experienced, as well as extreme fatigue due to operating in a fight or flight mode (Freudenberger, 1974; Maslach & Leiter, 2008). Furthermore, the SNS activates muscle tension as well as the constricting of blood vessels, which could result in tired and sore muscles, as well as headaches (Maslach & Leiter, 2008). Burnout can also activate the parasympathetic nervous system

(PNS), also a component of the ANS, which can result in the decrease or halting the heart beat altogether and a decline in blood pressure (Yaribeygi et al., 2017).

In addition to affecting the immune system and ANS, burnout also affects the gastrointestinal system (Maslach & Leiter, 2008; Yaribeygi et al., 2017). Specifically, burnout negatively affects the absorption of nutrients, stomach acid secretion, and can increase inflammation (Yaribeygi et al., 2017). This suggests that individuals experiencing burnout might experience inflammatory concerns such as stomach ulcers and irritable bowel syndrome (Yaribeygi et al., 2017).

2.3.4 Factors Contributing to Burnout

Maslach and Leiter (2008) conceptualised a model that includes the interaction between the individual and their context to determine the factors that could contribute to burnout. This includes a match or mismatch between an individual and their work environment (Maslach et al., 2001). When there is a mismatch between the person and one of these factors, this could be considered a contributor to burnout. The following six factors described below are considered major precursors to burnout, and are depicted in Figure 2.6 (Maslach et al., 2001).

2.3.4.1 Workload. Research has consistently suggested that quantitatively, an excessive amount of work to complete in an unrealistically short amount of time correlates with burnout (Maslach et al., 2001; Rothmann, 2003). Thus, too many work demands exhaust an individual's energy, sometimes to a point where it cannot be replenished. This might occur if the individual does not possess the necessary skills or resources required for their job, or if they are required to regularly display emotions that are inconsistent with how they feel internally, which might be a requirement in a person centred workspace (Maslach et al., 2001; Wiese et al., 2003). Within TP conservation, this might encompass too many TPs to look after

during the rehabilitation phase with too few TP conservationists. It might also include long hours of pangolin walking along with other tasks such as medical treatment and dealing with sting operations or rescuing potentially new TP patients from the illegal wildlife trade (Wright & Jimerson, 2020).

2.3.4.2 Control. This relates to individuals not having sufficient control over the resources they need to complete their work successfully (Wiese et al., 2003). This might entail the unavailability of funds for expensive trackers for pangolins prior to release, or availability of the specific ants that a particular TP prefers to eat (Pietersen et al., 2016). Alternatively, this might relate to having insufficient authority to do their work productively (Maslach et al., 2001). Additionally, individuals who have a high level of responsibility and thus control and authority over a work situation may feel overwhelmed by the responsibility of their job. This might mean they succumb to burnout. Specifically here, the livelihood of the TP species is a massive responsibility for the TP conservationists and thus it is possible that they might succumb to burnout from this too (Maslach et al., 2001). An organisation might also have rigid policies in place that restrict how one can complete their work and also restrict their work productivity (Rothmann, 2003). This is particularly important in TP conservation where multiple permits are needed from the GDARD in order to temporarily house, treat and transport the endangered species. This places restrictions on where the pangolin can be housed, and when the pangolin may be released, as the team of conservationists would have to apply for additional permits in order to move the pangolin to another site (Wright & Jimerson, 2020).

2.3.4.3 Reward. Rewards may include not being suitably remunerated for the work that one completes, or not receiving the required social recognition that one expects (Maslach et al., 2001; Rothmann, 2003). In both instances, the work completed as well as the worker are devalued by the lack of recognition. Reward or

lack thereof is closely related to inefficacy (Maslach et al., 2001). Within the TP conservation realm, this might encompass the TP conservationists receiving praise for the work they complete.

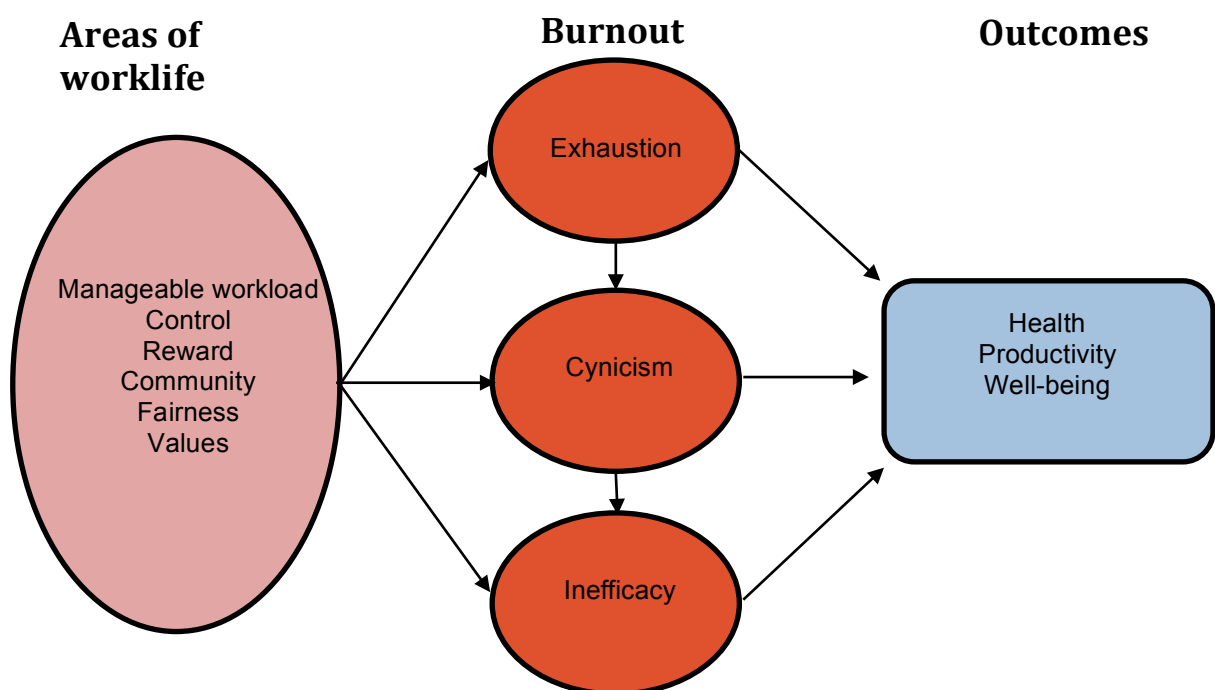
2.3.4.4 Community. This involves the overall quality of connection as well as the loss of connection felt between an individual and their work colleagues (Maslach & Leiter, 2008; Rothmann, 2003). Employees flourish in environments where they are liked and respected (Maslach et al., 2001). Social support decreases the risk of burnout and includes the support of one's colleagues as well as superiors (Wiese et al., 2003). Not only does this build an environment to exchange assistance and emotions, it builds a sense of shared values and belonging. Chronic disagreements or unresolved issues destroy community engagement (Maslach et al., 2001). In the TP conservation community, it would be imperative for the individuals to communicate and support one another, as they comprise a small group of individuals who can truly relate to each others' experiences.

2.3.4.5 Fairness. When fairness is not perceived in the workplace, a mismatch between person and role occurs and subsequently contributes to burnout. This involves mutual respect, as well as an equal treatment between tiers within the organisation (Rothmann, 2003; Maslach et al., 2001). Any inequity between division of work, pay, or perceived differences in treatment could lead to a mismatch between person and job (Maslach et al., 2001). Within TP conservation, multiple roles are involved and not all individuals are able to complete all the required tasks. For example, specific medical interventions would be reserved for properly qualified veterinary personnel (Wicker et al., 2020). Thus, while each part of the conservation team is integral in the successful rehabilitation of the TP, all conservationists would need to feel valued in order not to succumb to the fairness factor of burnout.

2.3.4.6 Values. When there is a mismatch between one's own values or principles and those of the workplace, burnout could ensue (Maslach et al., 2001; Rothmann, 2003). There could also be a conflict of values between the organisational value and the values that govern a specific team. This too will lead to burnout (Maslach et al., 2001). However, this contributing factor for burnout is not relatable to TP conservation as each involved conservationist has the same goal and desired outcome of releasing the TP into a safe reserve for it to live free of the threat of poaching and to hopefully grow the population to avoid extinction (Wright & Jimerson, 2020).

Figure 2.6

Factors Contributing to Burnout (Maslach & Leiter, 2016b).



2.3.5 Burnout in Helping Professions

Extensive research has addressed burnout in caregiving, teaching and helping professions (Maslach et al., 2001). Initially it was thought that burnout was relatively exclusive to people-based work. While there is strong evidence of emotion based factors contributing to burnout, research has recently also indicated that there are other careers for which burnout has a high prevalence – all of which encompass some or all of the factors aforementioned as occupational characteristics, namely: workload, control, reward, community, fairness and values (Maslach et al., 2001). While extensive research has addressed burnout within helping professions globally, significantly less research exists within South Africa (Khamisa et al., 2015). This suggests that even less research has focused on other work-based areas, such as conservation. However, as suggested, the area of TP conservation has many similarities to the nursing profession: TP conservationists' roles also involve taking care of another sentient being and looking after their well-being until they are healthy enough to look after themselves.

Nursing involves delivering a high standard of care, empathy and proficient services in an environment, which, particularly in a developing country, has limited resources (Khamisa et al., 2015). This is similar to the work completed by TP conservationists who also take on an empathic caring role, while working under harsh circumstances with limited funding and threats to their welfare and that of their patients. An imbalance between resources and responsibilities leads to the three components of burnout suggested by Maslach: depersonalisation (cynicism), exhaustion and self-efficacy (Khamisa et al., 2015; Maslach et al., 2001). Khamisa et al (2015) found evidence of increased depersonalisation and emotional exhaustion in nurses within South Africa. TP conservation is a highly stressful profession involving the care of a specific animal species. Due to its described nature, it is likely that it could involve the same emotions experienced by human-helping professions, such

as nurses. Thus it is theorised that TP conservationists could experience depersonalisation (cynicism) and emotional exhaustion too.

2.3.6 Distinction between Burnout and Depression

While burnout was found to be related to depression, they are two distinct variables. Specifically, burnout is experienced in relation to work context, whereas depression is all encompassing, pervasive and context free (Maslach & Leiter, 2016a). A moderate correlation occurs between depression and burnout; however, this has been attributed to the likelihood of depression occurring subsequent to burnout (Iacovides, Fountoulakis, Kaprinis & Kaprinis, 2003). Thus, as suggested above, burnout is job and situation specific dysphoria.

Maslach et al. (2001) as well as Maslach and Leiter (2008) have indicated that individuals that are prone to depression are also more prone to developing burnout. While burnout is a result of prolonged stress, depression does not necessarily require stress as an antecedent. However prolonged stress may contribute to experiencing depression (Maslach et al., 2001; Yaribeygi et al., 2017). Burnout is poised within a work context, however it also involves the recognition of both self and others, which is not necessarily specified for depression (Maslach & Leiter, 2016a). While some studies have suggested that the two concepts are interrelated conditions, much of this research has been confounded by poor operationalisation of both depression and burnout, and thus, may not be an accurate depiction of either construct (Maslach & Leiter, 2016a). One such study was completed by Schonfeld and Bianchi (2016), where the research concluded that the two constructs were indistinguishable. However, the assessment measures utilised did not accurately define the constructs, where the depression measure had an emphasis on fatigue, and the burnout measure only measured fatigue as a characteristic of burnout.

Failure to accurately define and measure the two constructs suggests there are fundamental flaws with the study (Maslach & Leiter, 2016a).

2.4 Depression

Amongst other emotions, depressive symptoms are a critical indicator of an individual's well-being (Spielberger & Reheiser, 2009). These depressive symptoms relate to an indicator of well-being (or lack thereof). For the purposes of this study, clinical depression is not being explored, and the state-trait conceptualisation of depression is being utilised.

As discussed in 2.3.6, studies researching the relationship between burnout and depression have found that while the two are related, they are separate entities (Iacovides et al., 2003). Variations in intensity and duration of depression provide vital information in terms of well-being, and have an impact on one's life and the function therein (Spielberger, 2006; Spielberger & Reheiser, 2009). Thus, it would be prudent to consider depression and the fundamentals thereof in a state and a trait-based form to fully grasp the well-being of TP conservationists.

2.4.1 Conceptualising depression

Depression can vary from feeling sad and gloomy temporarily to deep despair, guilt, hopelessness, and suicidal ideations (Spielberger, 2006; Spielberger, Ritterband, Reheiser & Brunner, 2003). A complex and multi-faceted emotion, depression is sometimes described as a mood, whereas at other times the intensity of its description is as a classifiable psychiatric diagnosis (Spielberger et al., 2003). Depression, particularly within this study, will be explored as an absence of well-being (Spielberger et al., 2003). However, based on the context of this study, depression will be investigated under the state-trait theory of depression; specifically,

how TP conservationists feel currently (state) as well as how they feel in general (trait) (Spielberger et al., 2003).

2.4.2 Theoretical Explanations of Depression

Theoretical explanations of depression exist within the main psychology paradigms. Initial theories of depression are associated with the clinical diagnoses as a disorder (Rehm, Wagner & Ivens-Tyndal, 2001). However, as mentioned in 2.4.1, depression is a complex and multi-faceted construct, and thus is additionally associated with a mood and emotional feeling as well as a clinical diagnosis (Sue, Sue and Sue, 2006). Main theories regarding depression will be briefly discussed below.

2.4.2.1 Psychodynamic Theory of Depression. In considering depression, Freud's psychoanalytic approach suggested that clinical depression arose from the unconscious loss of something (Rehm et al., 2001). As this loss is a part of oneself, anger becomes self-directed and results in the experience of depression (Spielberger & Reheiser, 2009; Rehm et al., 2001). Freud considered depression to be one of the fundamental emotional states, which had a formidable effect on an individual's thoughts and behaviour (Spielberger & Reheiser, 2009). Culminating from the psychoanalytic school of thought, Arieti and Bemporad theorised that there are two types of depression; dependency depression and goals depression (Rehm et al., 2001). Dependency depression is a result of an individual not internalising standards and thus continuously depending on the external world for the creation of their self-esteem. The latter form of depression is the result of an individual failing to meet their own unrealistically high expectations (Rehm et al., 2001). This might be considered within the TP conservation realm should a TP conservationist have unrealistic expectations of their ability to save each and every pangolin no matter their

condition. Thus, they may experience depression should they not meet this expectation.

2.4.2.2 Behavioural Theory of Depression. Lewhinsohn's theory of clinical depression evolved in the behavioural theoretical approach and suggested that the lack of response-contingent positive reinforcement resulted in depression (Rehm et al., 2001). Thus, the lack of any, or insufficient reinforcement led to dissatisfaction with life and reduced behaviour – which are two symptoms of depression. As there is a reduction in behaviour, hopelessness and low self-esteem develop too, and these are further symptoms of depression (Rehm et al., 2001). Thus, should TP conservationists not receive positive reinforcement for the continued work they engage in, they may experience depression.

Insufficient reinforcement may occur in three ways: firstly, the environment might produce inadequate opportunities for reinforcement, or the environment might stop providing reinforcement altogether (Rehm et al., 2001). Secondly, the individual might lack the skills in order to receive the reinforcement opportunity, for example: possessing poor interpersonal skills (Rehm et al., 2001). Lastly, while reinforcement might be available, there might be something in the way that hinders the reception of the reinforcement, such as anxiety (Rehm et al., 2001).

Once depression has occurred, the individual receives reinforcement of the depression in the form of concern and regard from others. This ensures that the depression is maintained, and the maintenance of depression might deter alternative reinforcement that would resolve the depression (Rehm et al., 2001). Thus, while a TP conservationist might not receive the necessary praise for the work they do, they might receive the necessary attention once they are displaying depressive symptoms. This attention may serve to reinforce the depression.

2.4.2.2.1 Learned Helplessness theory of depression. Within the behaviouristic paradigm, Seligman postulated that clinically depression-prone individuals typically and regularly attribute negative outcomes internally, whereas positive outcomes are always attributed to outside sources (Rehm et al., 2001). Specifically, should a pangolin survive and be released, it would be deemed to be a relatively healthy animal. However, should a pangolin die, this fate would be attributed to a lack of skills, or a personal failure. Thus, the depression-prone individual is likely to take the blame and consider that the negative outcome is enduring and generalised. However, the positive outcome would be considered to be due to something other than the behaviour of oneself (Rehm et al., 2001). The externalisation of positive outcomes and successes implicates the individual's self-esteem negatively and leads to depression as the individual becomes hopeless about their future (Rehm et al., 2001). Thus, based on this theory, if a conservationist attributes all successful pangolin rehabilitations to the health of the pangolin, or the assistance and knowledge of others, they also degrade themselves for not having the knowledge or skill perceived to have assisted the pangolin to a releasable state.

2.4.2.2.2 Self-Control Theory of Depression. Self-control theories of behaviour focus on how individuals manage their behaviour in order to successfully achieve long-term goals (Rehm et al., 2001). Thus, the self-control theory of depression suggests that individuals experiencing depression are unable to control their current behaviour for long-term success and happiness. As they are hopeless about the future, any efforts toward long-term goals are likely to gradually fade, if they were present at all (Rehm et al., 2001).

Kanfer's model of self-control involves three stages: self-monitoring, self-evaluation and self-reinforcement (Rehm et al., 2001). Furthermore, the behaviour of clinically depressed individuals could exhibit one or more of the following six deficits (Rehm et

al., 2001). Firstly, Kanfer suggests that depressed individuals, while excluding positive events, focus solely on negative events within their lives, such as only focusing on TPs that could not be saved and not considering all the moments where a TP was successfully released. Secondly, depressed individuals generally look at the immediate consequences of their behaviour and do not view anything beyond the immediate. Perhaps once medically treating a TP, it will not be instantly better, and the potential increase in health would not be considered should the TP conservationist be experiencing depression. Thirdly, depressed individuals often set highly rigid goals for themselves that are often impossible to achieve. As many pangolins in the illegal wildlife trade are highly compromised, setting a goal of saving every single pangolin would be almost impossible. Furthermore, insufficient contingent rewards are generally bestowed, thus important and positive behaviour is less likely to be maintained. Lastly, excessive punishment is imparted upon themselves when they cannot attain their unrealistic goals (Rehm et al., 2001). If a TP conservationist is experiencing depression and happens to lose a pangolin (due to no fault of their own), the TP conservationist may still be highly self-punitive for the loss of the pangolin life.

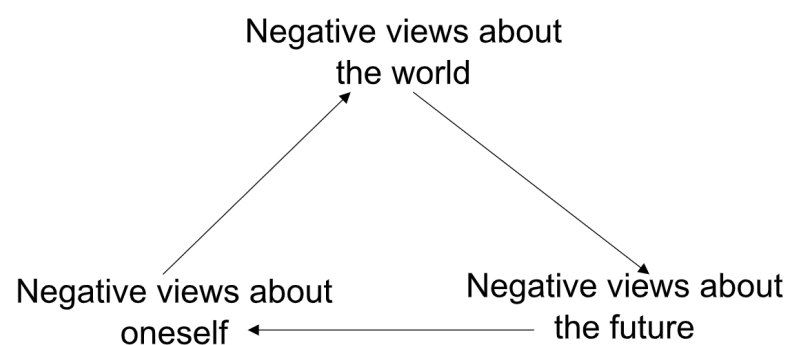
2.4.2.3 Cognitive Theory of Depression. Beck postulated that depression occurs within a cognitive triad: negative view of self, the world and the future (Beevers & Miller, 2004; Dowd, 2004; Rehm et al., 2001). Thus, whatever the depressed individual experiences, it is moulded to fit within the above worldview which distorts all vision in a negative way. While Beck never suggested this thinking caused depression, he did mention that it was associated with clinical depression (Beevers & Miller, 2004). The cognitive triad might be exhibited in the following way: a TP conservationist might think 'I am a failure' in response to a bad event, such as the death of a TP. This in turn might include the TP conservationist thinking that there is no hope for the species. Beck believed that dysfunctional attitudes would

contribute to a cognitive bias, thus leading to information being processed in an unrealistically negative manner, just as in the TP conservationist example (Beevers & Miller, 2004).

Additionally, further cognitive distortions (bias) involve selective distraction. Selective distraction occurs when an individual will choose to only focus on the negative despite there being positive information given too. In this instance, perhaps a pangolin life might have been lost, but valuable information gained that will aid in the treatment of the next pangolin patient. Similarly, magnification and minimisation occur when the depressed individual overemphasises the negatives and underemphasises the positives in a situation (Rehm et al., 2001). These cognitive distortions thus essentially mediate the relationship between any experience and the emotional reaction to the experience (Rehm et al., 2001). Lastly, depressive symptoms are experienced in addition to and unrelated to cognitive biases and dysfunctional attitudes (Beevers & Miller, 2004). These depressive symptoms are linked to mood – a state dependent experience, which gave rise to the state/trait model of depression (Beevers & Miller, 2004). Figure 2.7 depicts Beck's cognitive triad.

Figure 2.7

Becks Cognitive Triad (Beevers & Miller, 2004).



2.4.2.4 State-Trait Theory of Depression. While the above theorists are linked to clinical depression, the state-trait theory of depression focuses on depression in non-clinical populations (Krohne et al., 2002). Furthermore, Spielberger's theory addresses depression as a longstanding experience (trait) or a current disposition (state) (Rehm et al., 2001; Spielberger & Reheiser, 2009). Beevers' and Miller's (2004) research suggests that depression has both a dynamic mood-state as well as stable trait-like attributes. As this research is interested in the experience of depression, and not in clinical diagnoses, Spielberger's theory has been chosen.

Spielberger focused on the identification and measurement of the state and trait versions of depression. This theory suggests that depression can manifest as a non-clinical stable personality trait, as well as a variable emotional state (Beevers & Miller, 2004; Braun, Göllner, Rieger, Trautwein & Spengler, 2020; Krohne et al., 2002). Specifically, state depression suggests how an individual currently feels, whereas trait depression refers to individual differences in how the individual feels in general (Braun et al., 2020; Krohne et al., 2002; Spielberger & Reheiser, 2009). Thus, this theory would classify individuals with depression-like symptoms as either exhibiting depression as a stable personality or a transitory state. This theory postulates that somatic symptoms present themselves mostly within clinical depression whereas non-clinical depression exhibits more cognitive-affective symptoms (Braun et al. 2020; Krohne et al., 2002).

Should an individual experience trait depression; the intensity of it is mediated by the experience of negative cognitive processes that are activated in a depressed state (Krohne et al., 2002; Spielberger & Reheiser, 2009). These cognitive processes are influenced by the surrounding current environmental stressors, social support as well as biological dispositions (Krohne et al., 2002; Spielberger & Reheiser, 2009). Thus, should one be biologically predisposed to a negative outlook, or have a lack of

social support, they are likely to process in a negative way. Specifically in TP conservation, if a conservationist has trait depression, the intensity with which this is felt depends on the experience of stress experienced when dealing with pangolins, how supportive their family, friends and fellow conservationists are, and their own biological disposition. Therefore this might have an impact on how they view the plight of TPs (Spielberger & Reheiser, 2009).

2.4.3 Symptoms of Depression

Depression can be exhibited both psychologically as well as physiologically. Both of these types of symptoms will be explored below within the state-trait model of depression.

2.4.3.1 Psychological Symptoms of Depression. While psychological symptoms are often associated with clinical depression, individuals with non-clinical depression can experience them too (Krohne et al., 2002). The experience of depression may include feeling sad or low as well as feeling irritable (Spielberger, 2006; Spielberger et al., 2003). It may also include feeling fearful as well as feeling negative (Spielberger et al., 2003). Depression also often includes self-deprecating thoughts and feelings (Beevers & Miller, 2004; Spielberger et al., 2003). A loss of interest, hopelessness, despair, guilt and suicidal ideations are also described as psychological symptoms of depression (Spielberger, 2006; Spielberger & Reheiser, 2009; Spielberger et al., 2003). Additionally, feelings of failure or loss might also govern conscious thoughts (Spielberger et al., 2003). Individuals experiencing depression might also lose the ability to concentrate (Krohne et al., 2002).

2.4.3.2 Physiological Symptoms of Depression. Somatic symptoms of depression are generally exhibited by individuals suffering from clinical depression (Krohne et al., 2002). However, as stated in 2.4.3.1, it is possible for individuals with

non-clinical depression to exhibit somatic symptoms too. Manifestations of somatic symptoms may include feeling exhausted, insomnia, crying regularly, as well as excessive gain or loss in weight (Krohne et al., 2002; Spielberger, 2006; Spielberger et al., 2003).

2.4.4 Depression in Caring Professions

Research has consistently shown that acute work-related stress results in burnout and contributes to the likelihood of feeling depressed (Tennant, 2001). Furthermore, close relationships have been researched and found to exist amongst depression, stress and coping (Krohne et al., 2002). Wang, Lai, Chang, Huang, Zauszniewski and Yu (2015) found a positive correlation between work stress and the depression levels of psychiatric facility based nurses. Papazisis, Tsigas, Papanikolaou, Vlasiadis and Sapountzi-Krepia (2008) discovered that the majority of student and initial working nurses experienced depressive symptoms. Tillett (2003) stated that health professionals have increased psychiatric comorbidity with high rates of depression. Stanley and Manthorpe (2006) found that social workers experienced depression, with more than 70% of their sample group taking antidepressants.

As previously suggested in 2.3.5, human helping professions have many similarities to TP conservationists assisting TPs from the illegal wildlife trade. Both human and pangolin helping professionals are caring for another sentient being. Both involve the formation of emotional connections and the experience of empathy toward the patient. Additionally, both caring realms are working to care for another being who is currently incapacitated and needs help. Thus, it is possible that TP conservationists might experience the same depressive feelings experienced by professionals in human helping roles.

One disadvantage of the studies discussed is that they predominantly address work related depression in blue-collar, white-collar and helping professions (Tennant, 2001). Additionally, a distinction is not always made between clinical depression and the emotional expression of depression (Tennant, 2001). While Fraser et al. (2013) found the occurrence of stress, depression and posttraumatic stress disorder (PTSD) in conservationists, their participants all worked in the field of climate change. As was stated in 1.2, no research could be found regarding the occurrence of depression among endangered species conservationists, particularly among TP conservationists. The correct identification and subsequent awareness and understanding of the TP conservationists' emotions, such as state and trait depression, will greatly assist the TP conservationists in coping with these emotions and thus becoming more resilient in dealing with them, making them even more effective in their work (Spielberger & Reheiser, 2009). Furthermore, a close relationship has been found to exist between depression and coping (Krohne et al., 2002).

2.5 Coping Mechanisms

The notion of coping is related to the existence of stress and burnout, so much so, that theories discussing stress and burnout generally relate to, and have been considered in coping theories too (Krohne, 2001). While burnout depletes resources and the propensity to cope effectively, the use of coping mechanisms has been considered to enhance an individual's interaction with their situation or environment, particularly stressful environments where burnout has the potential to occur (Wiese et al., 2003). Thus coping will be considered next as it was established that the TP conservation landscape is a highly stressful field.

2.5.1 Conceptualising Coping

Lazarus and Folkman (1984, p.141) define coping as “constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of that person”. This is the most widely used definition of coping and succinctly encompasses what coping is (Frydenberg, 2017; Mostert & Joubert, 2005; van der Colff & Rothmann, 2009). This definition highlights the cognitive, behavioural and emotional components involved in the coping process as well as the individual’s evaluation thereof (Frydenberg, 2017). This definition of coping also highlights the dynamic nature of coping in that it is process-oriented (not trait-based) (Livneh & Martz, 2007). In addition, coping does not encompass the outcomes of the coping attempt as coping only refers to the effort utilised in order to manage the situation individuals find themselves in (Livneh & Martz, 2007).

Coping encompasses stabilising efforts during perceived stressful times (Livneh & Martz, 2007). Thus, coping is one’s attempt to diminish the experience of physical, emotional and psychological consequences linked to a perceived stressful time or daily hassles that one faces (Livneh & Martz, 2007). As coping is transitional and flexible, many researchers perceive coping as a state based construct, particularly as it is highly influenced by situational factors (Livneh & Martz, 2007). These situational factors include the nature of the environment one is in, the severity of the stress as well as internal needs (Livneh & Martz, 2007). One’s efforts to cope include cognitive, emotional and behavioural strategies directed at the external environment as well as internally (Livneh & Martz, 2007). Specifically, coping aims to reduce the impact of stress experienced from the external environment, as well as internal turmoil experienced, in order to foster well-being (Livneh & Martz, 2007).

2.5.2 Theoretical Frameworks of Coping

Theoretical frameworks that consider coping are varied and intertwined with stress and burnout theories. Additionally, theories of coping have been prevalent for the last four decades as interest continues to grow regarding how humans adapt to what they experience (Frydenberg, 2017). Two main approaches of coping are considered here, namely psychoanalytic and cognitive-behavioural coping.

2.5.2.1 Psychoanalytic Framework of Coping. Freud's work has been considered the beginning of coping based theories where he studied ego-initiated processes (Frydenberg, 2017). While considering human suffering, Freud initially distinguished four ways in which individuals attempted to handle their experience and cope, which involved: intoxication (chemical substance abuse), displacement and sublimation (using impulses to complete socially acceptable tasks), self-illusion (imaginary wishes) and withdrawal (Frydenberg, 2017). Adding to this, Freud distinguished multiple defence mechanisms. Freud suggested that repression and intellectualisation related to coping (Frydenberg, 2017; Mitrousi, Travlos, Koukia, Zyga, 2013). He described them as basic human defence mechanisms. These defence mechanisms were used to diffuse the experience of anxiety and stress (Frydenberg, 2017; Mitrousi et al., 2013).

The defence mechanisms an individual chooses are influenced by stable personality attributes (traits) and perceptual styles, and were linked to psychopathology (Lazarus, 1993; Mitrousi et al., 2013). However, coping was reconceptualised from the abovementioned coping styles to three categories: dysfunctional coping (delusions, depersonalisation), neurotic coping (regression, displacement) and functional coping (logical analysis, sublimation) (Frydenberg, 2017; Livneh & Martz, 2007). Specifically, dysfunctional coping suggests that TP conservationists either detach emotionally from their pangolin patients, or might even

go so far as believing an alternate reality to what is currently happening with their pangolin patient. Neurotic coping might include satisfying an impulse (for example physically attacking a pangolin poacher) with a socially acceptable substitute (such as punching an inanimate object). Lastly, functional coping would involve a TP conservationist focusing their socially unacceptable impulses (wanting to harm a poacher) toward something constructive, such as making a success of their rehabilitation efforts with the rescued pangolin. While psychoanalytic frameworks focused predominantly on unhealthy and inherent tendencies of humans, cognitive-behavioural frameworks suggest a shift away from a clinical, progressive and negative view of coping toward a more positive approach (Frydenberg, 2017).

2.5.2.2 Cognitive-behavioural Framework of Coping. Cognitive-behavioural frameworks also encompass consideration of the situation or environmental impact on the individual and how the individual appraises the situation (Frydenberg, 2017). These approaches suggest that coping is a result of how the individual appraises a situation. Thus, coping is less related to stable personality dispositions, and is rather a fluid, malleable process determined by the context individuals find themselves in (Livneh & Martz, 2007). Most prominent to cognitive-behavioural frameworks is the transactional theory developed by Lazarus and Folkman (Livneh & Martz, 2007).

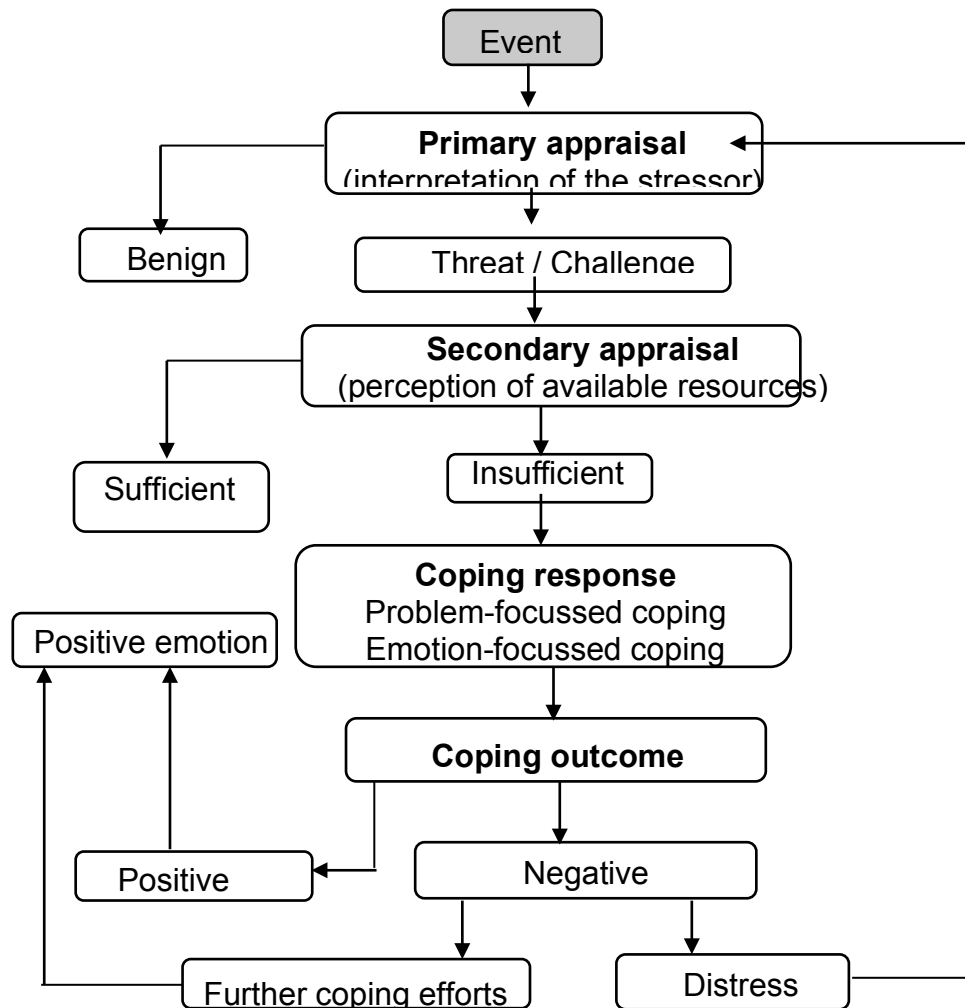
2.5.2.2.1 Transactional Theory of Coping. Lazarus and Folkman's transactional theory suggests that individuals undergo a series of appraisals, which can also occur at an unconscious automatic level (Frydenberg, 2017; Mitrousi et al., 2013; Walinga, 2012). An appraisal is a judgement of the personal significance of an incident (Radnitz & Tiersky, 2007). During primary appraisal, an individual assesses the potential of a threat that a situation presents (Frydenberg, 2017; Krohne, 2001; Mitrousi et al., 2013; van der Colff & Rothmann, 2009). Should the situation be perceived as problematic or stressful, and beyond their available resources, they

enter the secondary appraisal phase (Krohne, 2001; Livneh & Martz, 2007; Walinga, 2012). During the secondary appraisal phase, the individual considers if they have the necessary resources to cope. Thereafter, they select how to cope from their available coping strategies (Krohne, 2001; Livneh & Martz, 2007; Mitrousi et al., 2013; van der Colff & Rothmann, 2009). Lastly, the individual will evaluate their coping under the tertiary appraisal (outcome) stage (Livneh & Martz, 2007; Walinga, 2012).

During these phases of appraisal there is a dual and dynamic feedback loop between the environment and the individual. Adding to this, emotions impact the dynamic between the person and environment, and are in turn impacted too (Livneh & Martz, 2007). It is important to note that, while this is a three-step process, the process itself is not linear, and is rather dynamic in nature. Thus, these steps can occur concurrently (Krohne, 2001; Mitrousi et al., 2013). Additionally, this process occurs within the person-environment relationship (Radnitz & Tiersky, 2007). Furthermore, coping is seen as a mediator between the situation, the person-environment relationship and the emotional response thereof (Radnitz & Tiersky, 2007). In considering whether or not a coping mechanism was useful and thus successful, the fit between the situation and the response needs to be considered (Radnitz & Tiersky, 2007). Thus, every form of coping conceivable could be adaptive or maladaptive, depending on the situation and circumstance (Radnitz & Tiersky, 2007). Figure 2.8 below depicts this theory.

Figure 2.8

Transactional Theory model (Turner-Cobb & Hawken, 2019).



Based on the discussion above, the theory that will be encompassed in this research is the Transactional theory. The psychoanalytic theory describes coping as a defence, rather than a method to combat the problem causing stress, and potentially burnout (Mitrousi et al., 2013). Furthermore, the link between psychopathology and specific defence mechanisms makes it less applicable in a general sense, and to this study in particular (Lazarus, 1993). While the psychoanalytic approach sees coping as a trait or style approach, the transactional theory sees coping as a malleable process (Krohne, 2001; Lazarus, 1993). Lazarus

and Folkman's transactional theory model utilises the description of complex coping processes that not only assist in controlling emotion, but also address the problem causing the strain (Mitrousi et al., 2013). The transactional theory is further unpacked below.

2.5.3 Components of Coping

Based on the theory of Lazarus and Folkman, two types of coping were suggested: emotion-based (passive) coping and problem-based (active or task focused) coping (Baqutayan, 2015; Krohne, 2001; Lazarus, 1993; Livneh & Martz, 2007; Mostert & Joubert, 2005; van der Colff & Rothmann, 2009). Emotion-based coping refers to attempting to reduce the emotional states experienced or the demands experienced in one of the following ways: avoiding, distancing, and seeking emotional support and positive appraisal (Baqutayan, 2015; Krohne, 2001; Lazarus, 1993; Livneh & Martz, 2007; Stanislawski, 2019). Thus, emotion-based coping seeks to alter the perception of the situation, or the emotions felt toward the situation (Baqutayan, 2015; Lazarus, 1993). Within TP conservation, this might include emotionally distancing oneself from the experiences that the conservationist knows the pangolin has suffered through. It might also include seeking the support of fellow TP conservationists or a family member in whom they may confide. Lastly, the TP conservationist might appraise the situation in a positive light. This might include considering that while the pangolin is currently unwell, it is out of the illegal wildlife trade and receiving assistance.

Problem-based coping however, involves thinking of alternative solutions to change the negative emotions experienced, or doing something to alter the source of stress (Baqutayan, 2015; Krohne, 2001; Lazarus, 1993; Stanislawski, 2019). This can be achieved via learning new skills in order to effectively deal with the demands that the individual is facing (Livneh & Martz, 2007). It might also include thinking of

and comparing different solutions, as well as following a chosen plan of action (van der Colff & Rothmann, 2009). Within TP conservation, problem-focused coping may include comparing pangolin conservation efforts of a current patient to a former patient with a successful outcome. It might also include thinking of additional resources or action to take in order to ensure a positive outcome for a pangolin patient. A third coping strategy, later considered by Carver, Scheier and Weintraub (1989), is dysfunctional or avoidance coping where the individual does not confront the stressful situation whatsoever (Livneh & Martz, 2007; Stanislawski, 2019). Within the last coping strategy, the TP conservationist would disengage completely and not attempt to approach the stress-inducing situation at all. This is an ineffective coping mechanism, as it involves no active coping skills (Livneh & Martz, 2007). Litman (2006) also found evidence of a three-factor model. However, while the factor names differ, their compositions are similar.

2.5.4 Coping Mechanisms in Caring Professions

Depending on the coping strategies utilised, they can either exacerbate or ameliorate burnout (Baqtayan, 2015; van der Colff & Rothmann, 2009; Mostert & Joubert, 2005; Wiese et al., 2003). When successful coping strategies are utilised, the individual is likely to achieve goals, experience enhanced efficacy, as well as feel a sense of significance (Mostert & Joubert, 2005; Wiese et al., 2003). However, when a poor coping strategy is utilised, burnout is likely to ensue. Burnout is associated with ineffective coping strategies, such as withdrawal. Furthermore, burnout is seen as a self-perpetuating process as it depletes coping resources, thus making it difficult to effectively cope in future (Mostert & Joubert, 2005; Wiese et al., 2003). It is suggested that distancing and planful problem solving significantly reduce stress, and thus the possibility of experiencing burnout (Wiese et al., 2003). Wiese et al. (2003) further suggest that active coping efforts are associated with decreased experiences of burnout, whereas inactive efforts place individuals at risk for

experiencing burnout (Mostert & Joubert, 2005; Wiese et al., 2003). A close relationship has been found between depression and coping (Krohne et al., 2002). As mentioned in 2.4.4, TP conservationists who are able to identify and be aware of their emotions (such as depression) are more likely to cope with those emotions (Spielberger & Reheiser, 2009).

Additional research has suggested that active coping strategies may decrease the experience of cynicism and increase professional efficacy (both components in Maslach's theory of burnout) (Maslach et al., 2001). In pharmacists, increasing efficacy was the only association with the use of active coping mechanisms (Storm & Rothmann, 2003). In veteran child protection workers, professional efficacy increased and cynicism decreased; however exhaustion was still experienced (Anderson, 2000). Wiese et al. (2003) found that should members of the police force utilise active coping mechanisms, they were still at risk of experiencing exhaustion. Thus, the use of active coping mechanisms does not always ameliorate the experience of burnout in entirety (Anderson, 2000; Wiese et al., 2003). Active coping mechanisms were associated with higher levels of self-efficacy, whereas police that utilised passive coping mechanisms were found to have lower levels of self-efficacy (Wiese et al., 2003). Mostert and Joubert (2005) found that active problem focused coping strategies, turning to religion and emotional support decreased the experience of burnout. As a self-perpetuating process, burnout depletes coping mechanisms as well as hinders goal achievement (Wiese, et al., 2003). While burnout and coping strategies were related in studying South African police officers (a helping profession) (Wiese et al., 2003), it is theorised that TP conservationists' coping strategies would also be impacted by the potential presence of burnout.

Passive or avoidance coping strategies have been found to increase the experience and levels of burnout (Wiese et al., 2003). Veteran child protection

workers who utilised avoidance coping strategies showed an increase in exhaustion, and a decrease in self-efficacy (Anderson 2000). Passive coping was also associated with exhaustion and cynicism in the South African police force as well as low levels of self-efficacy (Wiese et al., 2003). Adding to this, the reliance on social support decreased the experience of exhaustion by the police force (Wiese et al., 2003). Thus, the three components of burnout are impacted by the use of ineffective coping strategies.

Adding to the above helping professions, nursing is considered an inherently stressful occupation due to the demands placed on the professional, the environment in which the individual works, as well as taking care of their patients (van der Colff & Rothmann, 2009). Specifically, they deal with suffering and grief related to the death of their patients (van der Colff & Rothmann, 2009). In their study of nurses, van der Colff and Rothmann (2009) found that seeking emotional support and active coping decreased exhaustion and decreased burnout overall, whereas passive coping strategies predicted burnout. TP conservationists experience high levels of stress; suffering, grief and death of rescued pangolins too (McWilliam, 2018; Mjo, 2018). It is thus theorised that TP conservationists could also experience burnout when utilising passive coping strategies.

2.5.5 Resilience and Coping Mechanisms

While resilience is considered a positive adaptive process, and a result from successfully and consistently coping in adverse situations and with stressors, coping is not always necessarily positive (Frydenberg, 2017). Coping involves an individual's capacity to respond to stressors and environmental demands, whereas resilience is a positive outcome from being able to effectively bounce back after setbacks (Frydenberg, 2017). Resilience can also influence how a situation or potential stressor is appraised; whereas coping refers to the strategies that are employed

once the potential or actual stressor has been appraised (Fletcher & Sarkar, 2013). Thus, while resilience can be seen after the fact, evidence of coping can be seen while it is occurring (Frydenberg, 2017). While resilience will result in and is a positive outcome in itself, coping is not necessarily always effective and successful (Fletcher & Sarkar, 2013). Thus, effective coping leads to resilience and is the vehicle in which resilience, and returning to equilibrium, is achieved (Frydenberg, 2017).

2.6 Resilience

The initial focus of psychological research in general was on a deficit model where attention has predominantly been on psychopathology (Fletcher & Sarkar 2013; Kotze & Nel, 2013; Masten, 2001; Richardson, 2002). Since the shift in focus toward positive psychology and away from a deficit model (Luthans, Vogelgesang & Lester, 2006), there has been an increased focus on individual strengths, and research into various positive and healthy adaptations and developments, such as resilience (Connor & Davidson, 2003; Fletcher & Sarkar 2013; Kotze & Nel, 2013; Masten, 2001; Windle, 2010).

During the 1970s, research saw a blooming interest in resilient children from environments that one would consider counterintuitive for good developmental outcomes (Kotze & Nel, 2013; Masten, 2001; Richardson, 2002). Thus began a journey of two decades (Kotze & Nel, 2013) of work with the sole focus on children from adverse backgrounds. These children came out of adverse backgrounds relatively unscathed by what could have had detrimental effects on their development and well-being (Masten, 2001; Masten & Obradović, 2006). This research was fundamental in what is known today regarding resilience, and is the groundwork for the varying focuses on resilience within psychology (Masten, 2001). However, the multiple uses and definitions of resilience have complicated research within this field

and have had a marked impact on the progress of studies within the field (Fergus & Zimmerman, 2005). Nonetheless, as the research grew, focus has shifted to include research within the workplace (Kotze & Nel 2013). Specifically, within a work-based context, resilience is regarded as psychological capital (along with other psychological constructs) (Fletcher & Sarkar 2013; Kotze & Nel 2013). For the purposes of this study, the work-based context is that of the TP conservationists, which can include land where a TP forages, the capture site where a sting operation is conducted, the medical treatment site, or the release site for the TP.

2.6.1 Conceptualising Resilience

Much research has identified the problematic nature of defining resilience due to it primarily being defined specifically within the context in which it is being utilised (Fergus & Zimmerman, 2005; Fletcher & Sarkar 2013; Kotze & Nel, 2013; Masten, 2001; Masten & Obradović, 2006; Windle, 2010). Thus, a rigorous approach is needed to initially clarify the concept of resilience prior to researching it further (Fletcher & Sarkar 2013; Windle, 2010). In honing in on a thorough and multidisciplinary definition of resilience for the purposes of this research, Windle's (2010) concept analysis of resilience as well as Fletcher and Sarkar's (2013) critique of resilience is relied upon.

As delineated above, research underpinning what we currently know regarding resilience is due to the pioneering work of developmental psychologists, most notably Garmezev who focused on stress-resistant children (Masten & Obradović, 2006; Windle, 2010). Masten developed this research further to define resilience as a "class of phenomena characterised by good outcomes in spite of serious threats to adaptation" (Masten, 2001, p. 228). A more contextual definition regards the entire life span, and suggests that resilience involves the above definition but includes that the individual will sustain a stable equilibrium over many risky experiences (Windle,

2010). In addition to this, experiencing adverse circumstances earlier on in life is suggested to facilitate resilience for future adverse situations (Windle, 2010). When considering a biological definition, focus shifts toward competent functioning and avoidance of psychopathy (Masten, 2001; Windle, 2010).

Furthermore, some definitions consider resilience to be a stable personality trait that one either possesses or not (Fletcher & Sarkar 2013; Windle, 2010), whereas most others agree that resilience should be considered as a dynamic process that includes context specific adaptation (Mampane, 2014; Masten, 2001; Masten & Obradović, 2006; Windle, 2010).

For the purposes of this research, resilience is defined as effectively utilising assets and/or resources to successfully adapt to, or manage a significant stress or adversity in order to avoid a negative outcome and 'bounce back' from the significantly adverse situation. The experience of resilience will vary across one's lifetime and is dependent on the availability of assets and resources as well as the severity and extent of the stressor or adversity faced (Luthans et al., 2006; Masten & Obradović, 2006; Windle, 2010). This definition was chosen not only as it is comprehensive in varying contexts, but it also aligns with Masten's original theory of resilience (Masten & Obradović, 2006) as well as the resilience measure to be utilised in this study.

2.6.2 Components of Resilience

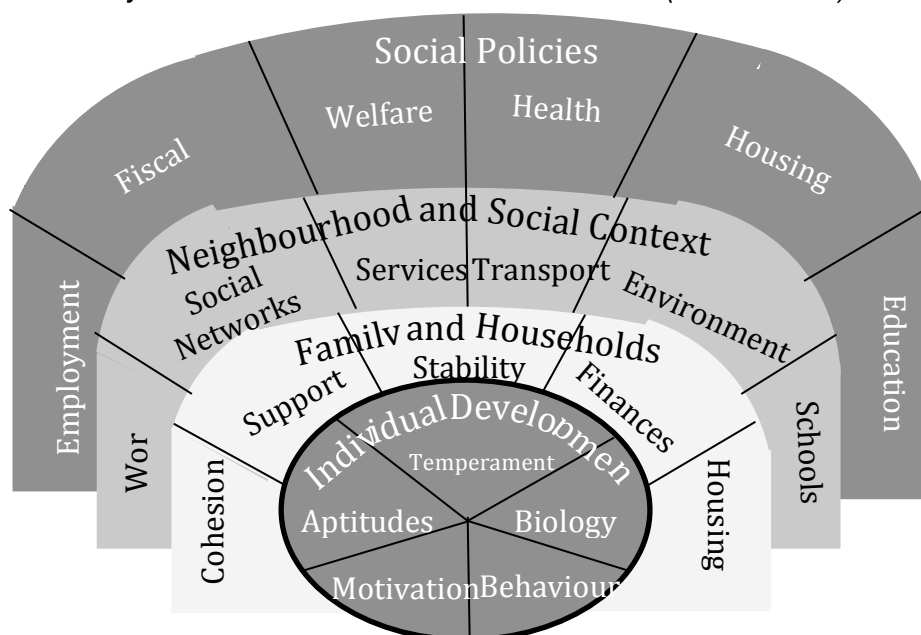
Taking the above resilience definition discussion into account, specific attributes most frequently associated with resilience have been identified (Windle, 2010). Firstly, there is consensus in research that in order for resilience to be accomplished, protective factors must be present (Kotze & Nel, 2013; Masten, 2001; Richardson, 2002; Visser, 2007; Windle, 2010). Protective factors are responsible for individuals

to respond positively to potential risks or adverse situations (Windle, 2010).

Protective factors underpin adaptation and are the reason an individual is able to respond in a positive manner to an untoward situation (Windle, 2010). They also facilitate the competence needed to resist adversity (Windle, 2010). Three protective factors exist, namely: individual, social and community/society (Windle, 2010). These protective factors are illustrated in Figure 2.9.

Figure 2.9

Examples of the layers of resources that facilitate resilience (Windle 2010).



Individual protective factors, also called assets (Fergus & Zimmerman; 2005; Masten 2001), refer to internal factors that the individual possesses, such as self-efficacy, coping skills and competence (Fergus & Zimmerman; 2005; Kotze & Nel, 2013; Luthans et al., 2006; Richardson, 2002; Windle, 2010). This study includes the specific focus on coping skills that TP conservationists may possess as internal factors. Social protective factors include family, guardians or close friendship networks or support (Windle, 2010). Should the TP conservationists rely on talking about their experiences to friends or family, this could serve as a protective factor for

them and increase their resilience in the face of adversity or disruption. Lastly, external community or society protective factors include support derived from institutional or economic factors (Luthans et al., 2006; Windle, 2010). The TP conservationists are associated with the South African Police Force, the JVVH and the APWG. Relying on these organisations for support or assistance would encompass a protective factor for TP conservationists too. They may share information regarding the health of the TPs with the organisations, or rely on their support during legal trials for poachers. TP conservationists may also receive tracking devices to utilise for release and post release monitoring of the formerly compromised TP. Both social as well as community protective factors have been considered as resources – these are external to the individual (Kotze & Nel, 2013; Masten, 2001; Windle, 2010).

The second component of resilience is antecedents (Visser, 2007; Windle, 2010). In order for resilience to occur, a risk or some sort of adversity needs to be present that specifically has the potential to create a negative outcome (Fletcher & Sarkar 2013; Kotze & Nel, 2013; Masten, 2001; Windle, 2010). The context of the adversity could be biological, psychological, economic or social (Windle, 2010). As not all risks are equal, some might differ in severity as well as persistence (Windle, 2010). Risk factors within the workplace specifically include stress, burnout as well as depression (Kotze & Nel, 2013).

Additionally, variation occurs in what is perceived as adversity as a stressor. Thus, differences in how individuals perceive potential stressors may mean the same event might be perceived as adversity for one individual, but not necessarily for all (Fletcher & Sarkar 2013). Adversity ranges from daily hassles to major life events. For the purposes of this study, parameters for adversity are set due to the nature of the study. Thus adversities are hypothesised to potentially include the loss of a

pangolin to death or during a failed sting operation. While this variation is permissible, what must be persistent is the potential for a negative outcome (Windle, 2010).

Lastly, consequences are the result from the risk as well as the protective factors. In order to ensure that an individual has resilience, the consequence needs to be positive or at least involve avoiding a negative outcome (Windle, 2010). The consequence also needs to include a successful adaptive process as an outcome (Fletcher & Sarkar 2013; Kotze & Nel, 2013). In developmental psychology this would mean maintaining normal or displaying even better development, despite the risk or adversity faced (Windle, 2010). In an occupational setting this would involve normal or better functioning despite the stressors experienced (Windle, 2010). Depending on the circumstance, sometimes thriving or positive outcomes are not essentially necessary to suggest that the individual is displaying resilience. Sometimes maintenance of competence is a strong display of resilience in itself (Ong, Bergeman, Bisconti & Wallace, 2006; Windle, 2010). Successful adaptation can also include recovering quicker than previously to stressors (Ong et al., 2006).

2.6.3 Resilience as an Adaptive Process

In line with the definition chosen for this research, resilience is seen as an adaptive process (Masten & Obradović, 2006). Despite the vast number of definitions and contexts within which resilience is defined, resilience is not a rare and magical phenomenon that some possess as was previously thought in initial child development theorising (Masten, 2001). Instead, it is viewed as an everyday normal skill and strength that can be identified, measured, developed and maintained in all individuals despite age or psychological conditions (Connor & Davidson, 2003; Kotze & Nel, 2013; Masten, 2001; Masten & Reed, 2002; Windle, 2010). Thus, though it

has been conceptualised as a factor at times (Fletcher & Sarkar 2013), based on the varying definitions and taking them all into account, resilience is seen as a multidisciplinary construct (Kotze & Nel, 2013), or even process, that alters frequently, depending on the components that are present and involved in the process of resilience (Mampane, 2014; Connor & Davidson, 2003; Windle, 2010). Furthermore, resilience is inferred from an individual's behaviour in relation to their assets as well as the environment in which they find themselves (Mampane, 2014; Masten & Obradović, 2006).

2.6.4 Theoretical view of resilience

Much like the definition of resilience, the theory of resilience is also based in discipline specific pursuits such as sport or childhood development (Fletcher & Sarkar, 2013; Luthans et al., 2006). Nevertheless, a commonality between all the resilience theories thus far is that resilience is seen as a dynamic process. Resilience is also described as being state-like and continuously developing over time (Fletcher & Sarkar, 2013; Luthans et al., 2006; Richardson, 2002). This state-like occurrence is akin to the theory of depression selected for this study, which also includes a state based element.

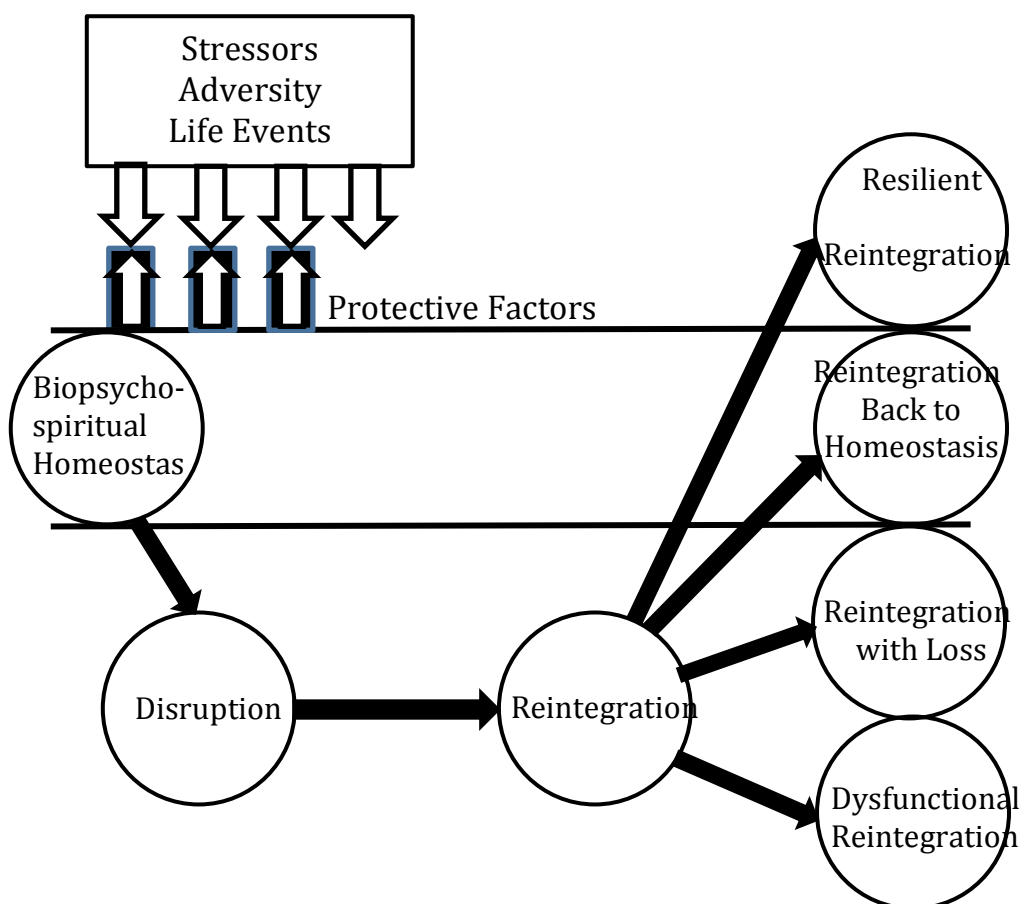
Literature exhibits one theory by Richardson that could potentially be applied to multiple disciplines, and includes ideas across physiology as well as psychology (Fletcher & Sarkar, 2013). Richardson's theory also highlights the suggestion that resilience is a reactive and dynamic process that exhibits itself once a stressor or adversity is experienced (Fletcher & Sarkar, 2013; Richardson, 2002).

Richardson's meta-theory of resilience, as displayed in Figure 2.10, suggests that individuals react to life events or planned disruptions where they consciously or unconsciously select the outcomes of the disruptions they experience (Richardson,

2002). It further suggests that individuals begin in a space of homeostasis or a comfort zone (Fletcher & Sarkar, 2013; Richardson, 2002). This zone is disrupted if the individual does not have sufficient protective factors (described in more detail in 2.6.1.1) in order to deal with impending stressors or adversity. Thereafter, the individual will experience a change or a shift that will result in one of four outcomes: resilient reintegration, homeostatic reintegration, reintegration with loss, or dysfunctional reintegration (Fletcher & Sarkar, 2013).

Figure 2.10

The Meta-theory of Resilience (Richardson, 2002).



Resilient reintegration involves gaining additional protective factors as well as a higher level of homeostasis than before (Fletcher & Sarkar, 2013; Richardson, 2002). Specifically, a TP conservationist could experience a stressor such as a TP passing away despite all their caring and rehabilitation efforts. However, should they learn vital information that can assist with the next TP patient, the TP conservationist would have experienced insight and growth. Thus, the disruptive experience of losing a TP combined with the subsequent insight and growth would constitute resilient reintegration (Richardson, 2002).

Homeostatic reintegration (also known as bio-psycho-spiritual homeostasis) involves individuals remaining in their comfort zones in an attempt to ignore and not necessarily deal with the stressor effectively (Fletcher & Sarkar, 2013; Richardson, 2002). In this instance, a TP conservationist might ignore the death of a TP, which may temporarily result in homeostatic reintegration. Thus the TP conservationist would have consciously or unconsciously avoided the opportunity for growth in order to avoid a disruption to their comfort zone (Richardson, 2002). Should they experience more than one death, or the death of a TP that they are particularly close with, homeostatic reintegration might not be possible (Richardson, 2002).

A TP conservationist might experience the death of a significant TP to them, and feel extreme sadness, or lose hope or motivation to approach their conservation efforts with the same vigour as before. This would entail reintegration with loss (Richardson, 2002). Specifically, the TP conservationist will experience the loss of the original and (insufficient) protective factors, resulting in a lower homeostatic base level (Fletcher & Sarkar, 2013; Richardson, 2002). The example above, highlighting

the experience of extreme sadness may be highlighted in this study as state depression.

Lastly, dysfunctional reintegration involves individuals resorting to abusive and self-destructive behaviour (Fletcher & Sarkar, 2013; Richardson, 2002). Should a TP conservationist turn to substance abuse or self-harm if they experience a death of a TP or a sting operation going awry, this would constitute dysfunctional reintegration.

The movement throughout Richardson's meta-theory of resilience might happen consciously or unconsciously. It may take significant amounts of time, or happen rapidly. Sometimes, the reintegration process may be delayed. For example, should a TP conservationist experience the death of one of their TP patients, they might not experience the symptoms straight away, and it might appear that they are in homeostatic reintegration. However, later on, an additional TP death, therapy, or a memory might disrupt their homeostasis resulting in an alternative reintegration – either with loss, dysfunctional, or, hopefully, resilient reintegration will occur, with newly learned coping mechanisms (a construct in this study) or newly developed elements of resilience (Richardson, 2002). Disruption is required in order for growth to occur and in order for individuals to develop resilience. Homeostasis requires nothing from the individual, and as such, the individual does not experience any change to their experiences. In order to progress in life, Richardson believes we experience multiple and repeated resilient reintegration from disruptions (Richardson, 2002). Alternatively, life stagnation would occur should an individual cling to homeostasis, and life digression occurs with the chronic experience of reintegration with loss. Thus, should the TP conservationists choose not to work through the disruptive experiences they experience (such as the death of a TP or a failed sting operation), they may stagnate or digress (Richardson, 2002). This could result in the experience of depression.

While Richardson's theory is currently the only all-encompassing model for resilience, it does not account for the varied life involving simultaneous events, setbacks and stressors that could occur (Fletcher & Sarkar, 2013). Its linear approach may acknowledge the primary emotional response, but it does not necessarily suggest the effect that meta-cognition and meta-emotion have on the four possible outcomes when some form of homeostasis is returned to (Fletcher & Sarkar, 2013). Lastly, this model favours coping-oriented behaviours thus insinuating that resilience might be viewed as a successful coping strategy (Fletcher & Sarkar, 2013). However, as it is the only resilience theory that is applicable to this context, Richardson's theory will be utilised as a basis for the resilience component of this research.

2.6.5 Resilience in the Workplace

As highlighted above, resilience within a workplace is included with other constructs under an umbrella called psychological capital (Kotze & Nel 2013). Focus has shifted within the workplace too, toward strengthening psychological resources (such as resilience) in order to increase and improve performance (Luthans, Avey, Clapp-Smith & Li; 2008). Psychological capital, and particularly resilience, has been regarded as highly important when faced with organisational stress (French & Holden, 2012; Kotze & Nel, 2013). However, while it is regarded as highly important, it has not been sufficiently researched and much research particularly within an organisational setting only addresses resilience indirectly (Luthans et al., 2006). As with other applications, resilience within the workplace setting is seen to have state-like properties, which suggests that it is developable (Luthans et al., 2006). Resilience allows for a springboard, which involves learning and growth (Kotze & Nel, 2013). Additionally, resilience does not necessarily mean that an individual successfully overcomes the setback or adversity easily. It suggests that an individual

struggles effectively as they proactively learn, grow and integrate the experience within their growth trajectory (Walsh, 2003; Youssef & Luthans, 2007). Thus, resilience not only involves transcending a stressor, but can also involve thriving above the original homeostasis or equilibrium state (Kotze & Nel, 2013; Luthans et al., 2006; Luthans et al., 2008). This suggests that even the most confident or optimistic individuals may have setbacks or negative outcomes. Resilience is an interaction between protective factors and identified stressors (Youssef & Luthans, 2007).

Luthans et al (2007) suggest that success in the current world of work now requires individuals to thrive in chaos and overcome adversities rapidly. Adding to this, a positive relationship has been found between resilience and workplace positive performance outcomes (Kotze & Nel, 2013; Luthans Avolio, Avey & Norman, 2007; Youssef & Luthans, 2007). Employees who exhibit resilience also exhibit more emotional stability in the face of stressors (Luthans et al, 2006). Additionally, resilient individuals have exhibited more flexibility and openness to new experiences (Luthans et al., 2006). Furthermore, a correlational continuum exists between the increase in assets (protective factors) and the decrease in perceived adversity (Luthans et al., 2006; Masten, 2001). A positive relationship was found between resilience and rated performance (Luthans, et al., 2007), as well as resilience and job satisfaction (Luthans et al., 2007). Research has indicated that resilience is fundamental in combatting workplace stress and burnout, particularly in helping professions, such as social workers (Grant & Kinman, 2015) and physicians (O'Dowd et al., 2018) as well as within a corporate workspace (French & Holden, 2012). Thus, it is henceforth theorised that it is possible that resilience could assist TP conservationists in combatting the effects of burnout and promoting mental health.

2.7 Mental Health and Well-Being of TP Conservationists

Keyes (2002) suggested that mental health encompasses flourishing, positive feelings and positive functioning (well-being). Conversely, the absence of positive feelings and positive functioning equate to a lack of mental health and well-being (Keyes, 2002). Positive mental health and well-being as well as resilience have been shown to buffer against negative emotions and psychopathology (Gloria & Steinhardt, 2016; Grant, Guille & Sen, 2013; Keyes, Dhingra & Simoes, 2010; Trompetter, de Klein & Bohlmeijer, 2017).

As burnout develops from prolonged stress and situations that exceed ones coping mechanisms, this endangers the potential of well-being (Görgens-Ekermans & Brand, 2012; Mostert & Joubert, 2005). Furthermore, burnout depletes coping mechanisms, thus further decreasing the chances of achieving well-being while experiencing burnout (Wiese, et al., 2003). Similar to burnout, the experience of negative emotions (such as depressive thoughts) and psychopathology are not present in individuals who experience mental health and resilience (Gloria & Steinhardt, 2016; Trompetter et al., 2017). Resilience and problem focused coping strategies have shown a positive correlation with well-being (Gloria & Steinhardt, 2016; Mayordomo, Viquer, Sale, Salntores & Melendez, 2016). While the above research was not completed in a conservation context, TP conservationists work in stressful situations. This suggests that they may be prone to experiencing stress and subsequently burnout and depressive symptoms. It is furthermore theorised that should they have resilience and facilitative coping mechanisms, this might mitigate their experience of burnout and depression-like symptoms, thus facilitating well-being.

2.8 Conclusion

TP conservationists work in a highly stressful context. This places them at risk of experiencing burnout and depression. The experience of these two syndromes negatively impacts on their mental health and well-being. Should they possess facilitative coping mechanisms as well as resilience, this might mitigate the experience of these syndromes and enable the flourishing of their mental health and well-being.

Chapter 3

Research Methodology

3.1 Introduction

Chapter 3 will discuss the methodology chosen as most appropriate in order to achieve the objectives of the study. This chapter will discuss the methodology used in terms of research design, sampling, measures, data collection, data analysis as well as ethical considerations. The section below revisits the aims and objectives of this study.

3.2 Aims and Objectives

The primary aim of this study was to determine the prevalence of depression and burnout in TP conservationists, and furthermore, to see if coping mechanisms and resilience serve to mitigate this. As stated in 1.3.2, the objectives that had been set in order to achieve this aim were the following:

- To determine the prevalence of burnout and state as well as trait depression among TP conservationists.
- To establish if the TP conservationists are coping with the prolonged stress they are exposed to and, if they cope, which coping mechanisms they use.
- To investigate the incidence of resilience displayed by TP conservationists.
- To determine if relationships exist between burnout, state and trait depression, coping mechanisms as well as resilience within the context of TP conservation.
- To investigate the strength of the relationships that are detected between the constructs and to determine to what extent related constructs impact one another.

- To gain an understanding of the subjective experiences of the TP conservationists with regard to state and trait depression, burnout, coping mechanisms and resilience.

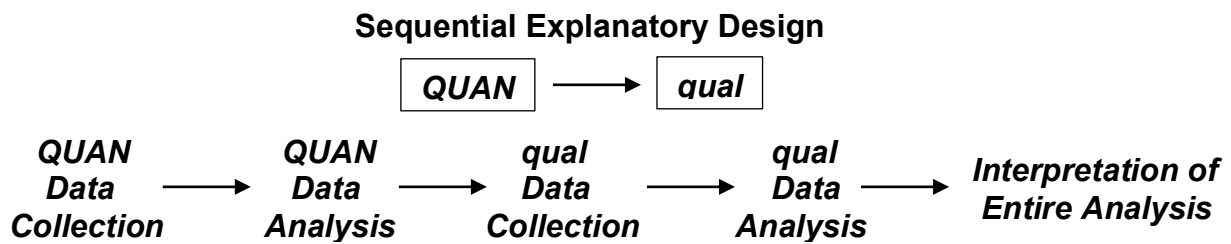
3.3 Research Design

The present study utilised a mixed-method approach, involving collecting both quantitative and qualitative data and integrating the two data types for an in-depth understanding of the research sample (Creswell, 2014). By utilising both quantitative and qualitative research approaches, elements of each approach will be relied upon (Schoonenboom & Johnson, 2017). As the sample of the study was relatively small and involved a finite group, it was hoped that this approach would give a more complete understanding of the research population and thus the study as a whole, than either approach in isolation (Creswell, 2014).

An added advantage of mixed-method designs is that the qualitatively collected data give further explanation to the results found and collected quantitatively. The mixed-method design used for the present study was an explanatory sequential design (Creswell, 2014; Schoonenboom & Johnson, 2017). Explanatory sequential design involves first conducting quantitative research. Thereafter, the data is analysed and qualitative research then follows. Thus, the initial quantitative research is further explained by the qualitative research, in a sequential, consecutive manner (Creswell, 2014). The explanatory sequential mixed-method design is depicted in Figure 3.1.

Figure 3.1.

Sequential explanatory mixed method design.



Within Figure 3.1, the capitalisation indicates the priority that quantitative research takes within this design. While each data collection and interpretation process is separate, the initial quantitative process informs the qualitative process (Creswell, 2009). Thereafter, the qualitative results assist in explaining and giving added insight to the quantitative data results (Creswell, 2009).

3.4 Sample

The sample within this study contained TP conservationists. The sub-sections that follow provide an overview of the sampling technique utilised, the realised sample as well as the sample characteristics.

3.4.1 Sampling

The target population was chosen utilising a purposive sampling technique. Purposive sampling involves “intentionally selecting specific cases that will provide the most information for the question under study” (Kemper, Stringfield, & Teddlie, 2003, p. 279). Thus, the following inclusion criteria were set to define TP conservationists for this study:

- Individuals who are actively involved in practical TP conservation. Active involvement includes one or more of the following:
 - TP confiscation

- TP rehabilitation
 - TP medical intervention
 - TP release
 - TP post-release monitoring
- Live within South Africa
 - Proficient in English as the measuring instruments utilised were all in English.

The sample was created by approaching APWG and JVVH to identify possible participants affiliated with their organisations as they are the only two organisations within South Africa that are mandated by GDARD to work with TPs. Email addresses were collected in order to contact the individuals eligible to participate in the study. The data collection procedure included two phases, and thus, there are two samples, where one phase progresses to another. The first phase involved establishing a sample for the quantitative data collection. Thereafter, the second phase involved establishing a sample for the qualitative data collection utilising TP conservation participants that had already participated in phase one of data collection.

3.4.1.1 Sampling: First Phase. The possible participants whose details were obtained from the APWG and JVVH were emailed an invitation letter including information on the study as well as a link to participate. A copy of the electronic invitation letter is included in Appendix A. Furthermore; the details included in the link for consent are included in Appendix B. The email and invitation letter contained details regarding the study and what the aim of the study was, as well as the contact details of the researcher and supervisor for further information. The letter also included what would be required of the individual should they agree to participate, as well as the possibility of a further additional voluntary invitation for the second phase of the research. A total of 28 participants agreed to participate in the first phase. The first phase of the data collection procedure will be discussed in 3.7.1. It is worth

noting that this sample includes everyone involved in TP conservation aside from the undercover police members. Thus, this sample includes everyone contactable that currently works within Temmincks pangolin conservation within Southern Africa.

3.4.1.2 Sampling: Second Phase. The second phase of data collection involved the use of a semi-structured interview to gain further insight and information regarding the TP conservationists' experiences in their conservation efforts. The conservationists approached were residing in Johannesburg, thus making them accessible to the researcher. This means that the sample for phase two is one of convenience. Young and Casey (2018) suggest that qualitative samples between four and six are sufficient. A total of four TP conservationists were included in this phase. All four individuals were approached with an invitation letter to be included in the second phase of the research and data collection. They all agreed and copies of this letter as well as the consent form are available in Appendices C and D respectively. The second phase of the data collection procedure is discussed in 3.7.2.

3.4.2 Sample One

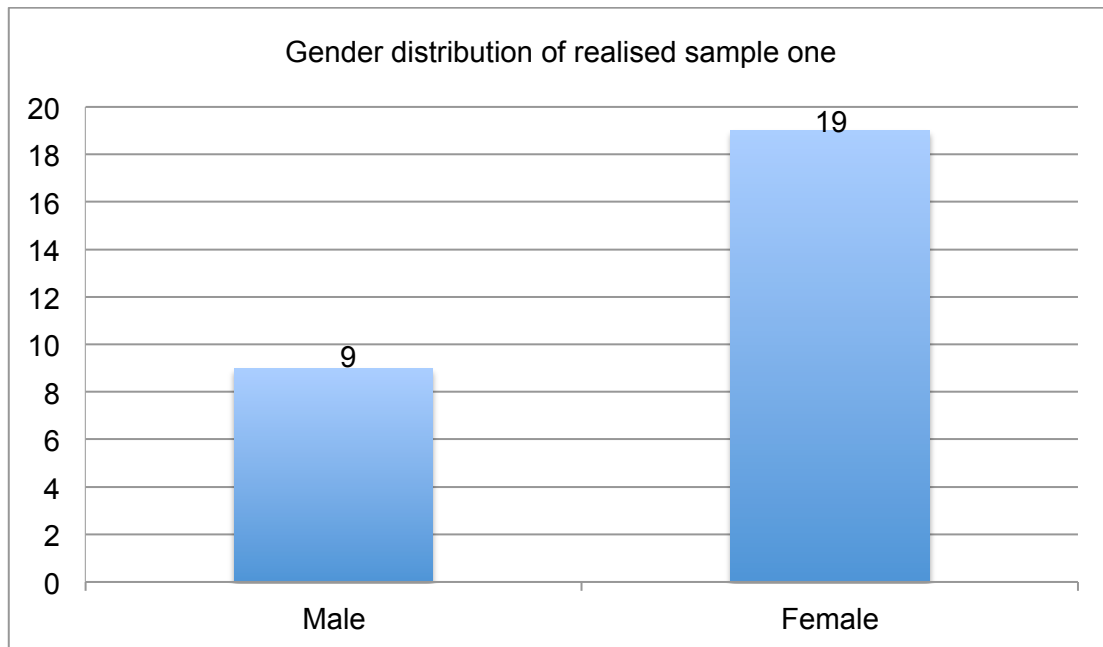
Following the purposive sampling technique described in 3.4.1, voluntary participation and informed consent was gained by 28 TP conservationists ($n = 28$) to participate in this phase of the study.

3.4.2.1 Sample Characteristics. In this section, the characteristics of the sample for phase one will be given to provide further insight into the sample.

3.4.2.1.1 Sample Gender.

Figure 3.2.

Gender distribution of realised sample one.



As can be seen from Figure 3.2, more female TP conservationists ($n = 19$) than male TP conservationists ($n = 9$) participated in the study. Females comprised 68% where males comprised 32% of the sample.

3.4.2.1.2 Sample Age.

Table 3.1

Age distribution of realised sample one.

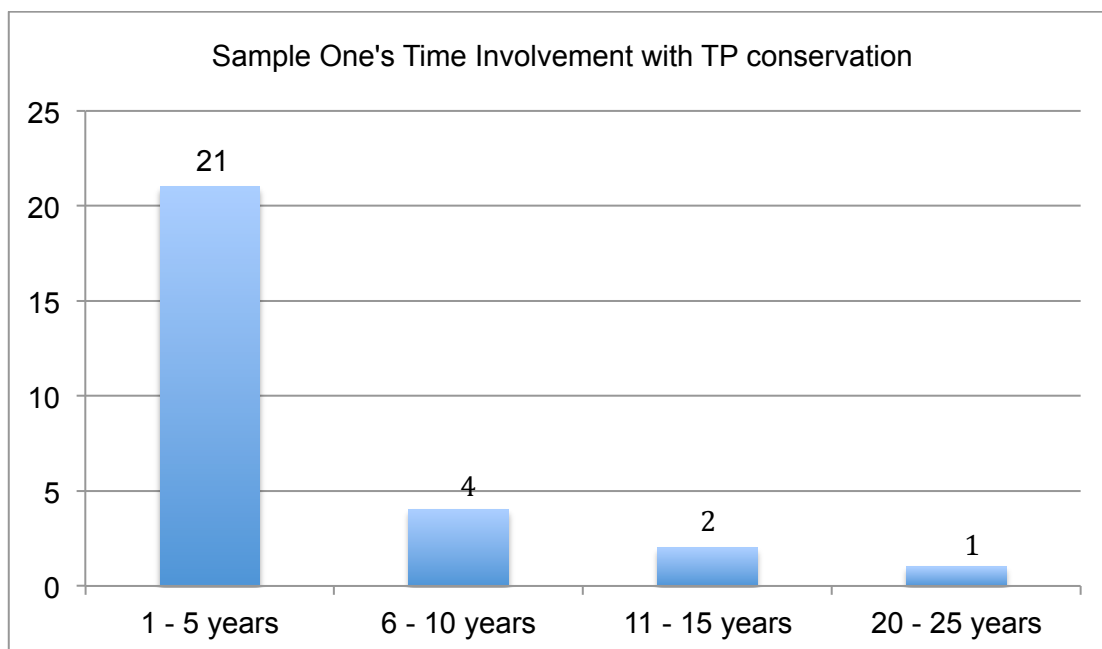
Age Group Coded				
	Frequency	Percent	Valid Percent	Cumulative Percent
20 - 29 years	10	35.7	35.7	35.7
30 – 39 years	10	35.7	35.7	71.4
40 – 49 years	2	7.1	7.1	78.5
50 – 59 years	5	17.9	17.9	96.4
60 – 69 years	1	3.6	3.6	100.0
Total	28	100.0	100.0	

Table 3.1 contains a summary of the age group distribution of the sample. From the table, the majority of the sample is between 20 – 29 years and 30 - 39 years old (n = 10 respectively). Only one TP conservationist, accounting for 3.6% of the sample population is above 60 years of age.

3.4.2.1.3 Sample One's Time Involvement with TP conservation.

Figure 3.3.

Sample one's time involvement with TP conservation.



Based on the data presented in Figure 3.3, most of the sample has been involved with TPs for 1 – 5 years ($n = 21$). These conservationists account for 75% of the sample. Only one person has 20 – 25 years of experience within TP conservation.

3.4.3 Sample Two

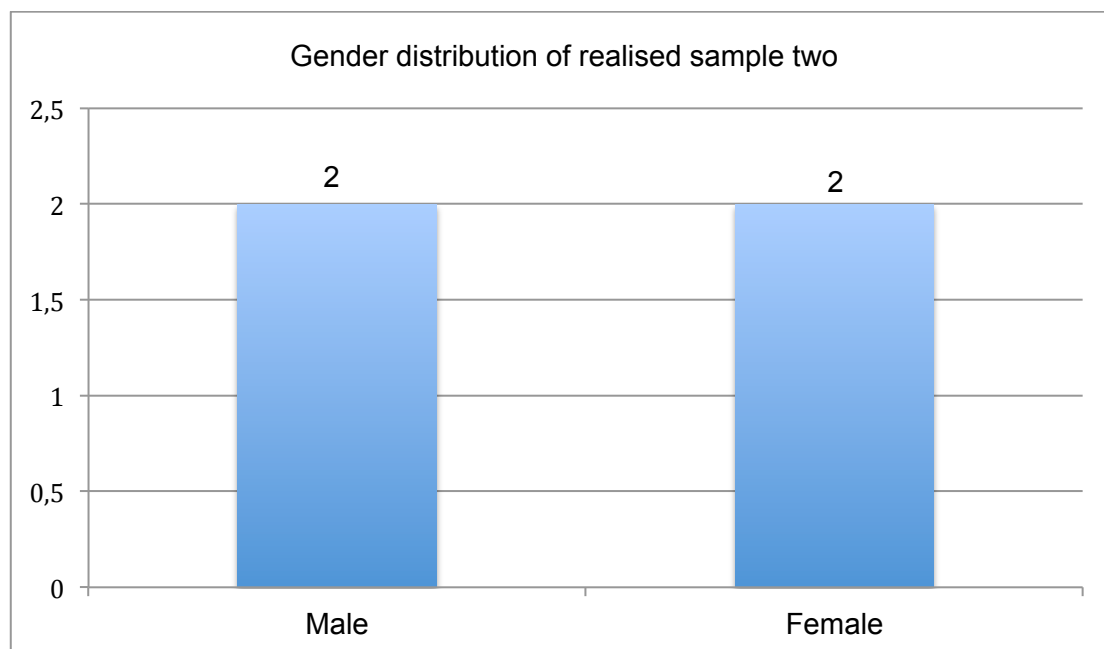
Following the convenience sampling technique discussed in 3.4.1.2, voluntary participation and informed consent was obtained from four TP conservationists ($n = 4$) to participate in this phase of the study.

3.4.3.1 Sample Characteristics. In this section, the characteristics of the sample for phase two will be given to provide further insight into this sample.

3.4.3.1.1 Sample Gender.

Figure 3.4.

Gender distribution of realised sample two.



As can be seen from Figure 3.4, an equal number of males ($n = 2$) and females ($n = 2$) participated in the second phase of the research.

3.4.3.1.2 Sample Age.

Table 3.2

Age distribution of realised sample two.

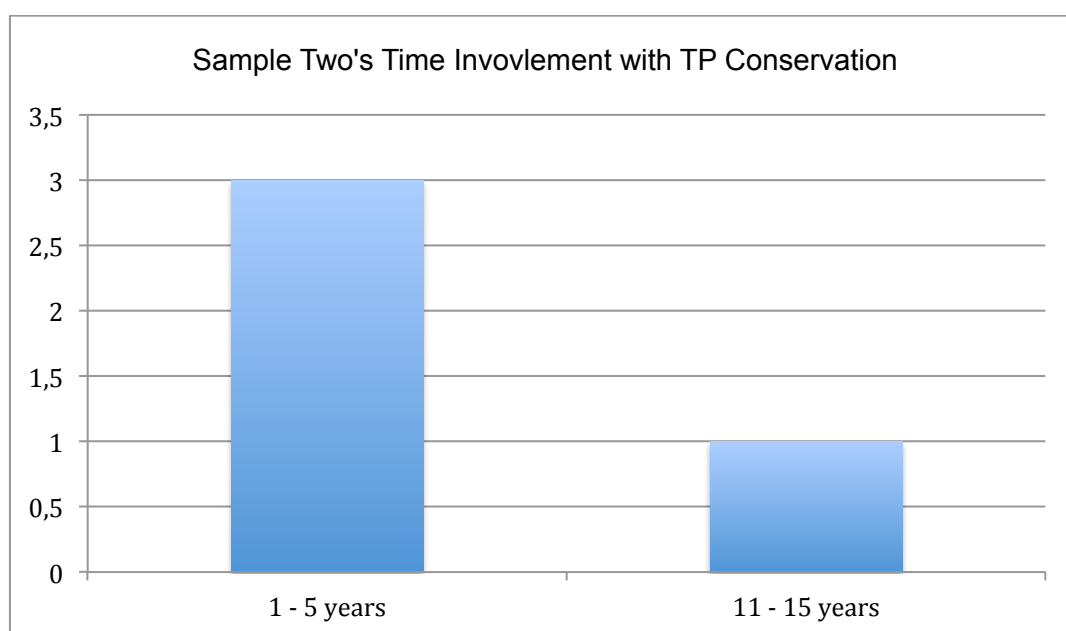
Age Group Coded				
	Frequency	Percent	Valid Percent	Cumulative Percent
30 – 39 years	2	50.0	50.0	50.0
50 – 59 years	2	50.0	50.0	100.0
Total	4	100.0	100.0	

When considering the age distribution for sample two (displayed in Table 3.2), all four participants are between 30 and 59 years of age.

3.4.3.1.3 Sample Two's Time Involvement with TP Conservation.

Figure 3.5.

Sample two's time involvement with TP conservation.



Observing Figure 3.5 above, most of the sample has between 1 – 5 years of experience with TP conservation ($n = 3$). Of sample two's participants, one TP conservationist has between 11 – 15 years of experience.

3.5 Measurement Instruments

In order to address the prevalence as well as understand the subjective experience of TP conservationists, both quantitative as well as qualitative measures were used. The measurement instruments discussed below were chosen for their relevance to the aims of this study.

3.5.1 Biographical Information

A concise biographical information section was added to the online questionnaire sent to sample one. Furthermore, the same biographical information section was included in a consent form when conducting phase two with sample two (Appendix D). The information requested involved:

- Gender
- Age
- Time involved in TP conservation

An example of the biographical information sheet is included in Appendix D.

3.5.2 Quantitative Psychological measures

Four psychological measures were utilised in phase one of the research (the quantitative phase) to measure the four constructs involved in this study, namely: burnout, depression, coping mechanisms and resilience. These measures will be discussed below.

3.5.2.1 Maslach Burnout Inventory – General Survey (MBI-GS). The Maslach Burnout Inventory – General Survey (MBI – GS), developed by Schaufeli, Leiter, Maslach and Jackson was used to measure burnout amongst the participants (Schaufeli, Leiter, Maslach & Jackson, 1996). The MBI – GS can be divided into three subscales: exhaustion, cynicism and professional efficacy. Further information on these subscales is contained in 2.3.2.1. Definitions of these scales are presented in Table 3.3 below.

Table 3.3

Scale definitions for the MBI-GS.

Scale	Factor
Exhaustion	Feelings over overextension and general exhaustion with work.
Cynicism	Feelings of indifference, distancing from work.
Professional Efficacy	Feelings of effectiveness at work as well as satisfaction with past and present accomplishments at work.

(Maslach, Jackson & Leiter, 2018)

The MBI – GS consists of 16 items: five measuring exhaustion, five for cynicism, and six measuring professional efficacy. Each subscale is measured on the following seven point Likert-type frequency scale representing how often the 16 statements are experienced: (0) Never; (1) A few times a year or less; (2) Once a month or less; (3) A few times a month; (4) Once a week; (5) A few times a week; and (6) Every day. High scores on Exhaustion and Cynicism and a low score on Professional efficacy are indicative of burnout (Mostert & Joubert, 2005).

Examples of items for each subscale are:

I feel emotionally drained from my work.

In my opinion, I am good at my job.

I doubt the significance of my work (Schaufeli et al., 1996).

Storm and Rothmann (2003) confirmed this three-subscale structure for the South African population, and also confirmed the structural equivalence of this measure between different race groups within the South African population (n = 2396). Cronbach alpha coefficients for the three scales within South Africa were reported as follows: Exhaustion .88, Cynicism: .79 and Professional Efficacy: .78

(Storm & Rothmann, 2003). These reliability coefficients are evident of high internal consistency, and thus the MBI – GS was deemed suitable for use in this study. Cronbach's alpha coefficients for the current study are presented in Table 3.4.

Table 3.4

Reliability of the MBI – GS: Scales and overall.

Reliability statistics			
Scales	Cronbach's Alpha	Sample Size	N of items
Exhaustion	.926	28	5
Cynicism	.789	28	5
Professional Efficacy	.558	28	6
Overall	.845	28	16

Based on the successful use of the MBI within South Africa previously, as well as the overall Cronbach's alpha of .845, the MBI-GS was deemed fit for use for this study.

3.5.2.2 State-Trait Personality Inventory Form Y (STPI – Y) – Depression

Subscale. The STPI–Y, developed by Spielberger, measures innate personality, based on inherent basic emotions originally exposed by Darwin and Freud (Spielberger & Reheiser, 2009). Specifically, this assessment taps into indicators of stress and well-being at both an immediate level (state) and overall personality level (trait) (Spielberger & Reheiser, 2009). For this study, only the depression subscale was used to measure the level of depression experienced by the sample. As this study is measuring depression as a lack of well-being, and not a clinical disorder, this measure met those requirements as it is not a diagnostic tool for depression. The STPI – Y depression subscale measures state and trait depression (Krohne et al.,

2002). The state depression construct assesses how the individual currently feels (a variable emotion), whereas the trait construct assesses how an individual feels in general (a stable construct) (Krohne et al., 2002). The scale definitions are represented in Table 3.5 below.

Table 3.5

Scale descriptions of the STPI-Y State and Trait Depression subscales.

Scale	Description
State Depression (S-Dep)	Measures the intensity of depression feelings and cognitions at a particular time.
Trait Depression (T-Dep)	Measures how often cognitions and feelings relating to depression are experienced over time

(Spielberger & Reheiser, 2009)

The STPI – Y depression subscale consists of 20 items, 10 items for each of State depression and Trait depression respectively. These items are rated on a four-point Likert scale. The State items are measured in terms of how the person feels at the current moment on the following scale: (1) Not at all; (2) Sometimes; (3) Often; (4) Almost always. The Trait items are measured on the following scale: (1) Almost never; (2) Sometimes; (3) Often; (4) Almost always.

Examples for State and Trait depression respectively:

I feel blue.

I feel hopeless (Spielberger, 2006).

Within the South African context, internal consistency reliability for the Trait depression subscale ranged from .79 to .90 between different race groups (n = 2298) (Du Plessis, 2013). Krohne et al. (2002) reported a coefficient of .90 for this scale

internationally. The State depression subscale ranged from .82 to .86 for internal consistency reliability across different South African race groups (n = 2298) (Du Plessis, 2013). Krohne et al. (2002) reported a coefficient of .85 for this scale internationally. Considering the internal consistency for both subscales of depression within the South African population, the STPI – Y is appropriate to use. The Cronbach’s alpha coefficients for the current study are presented in Table 3.6 below:

Table 3.6

Reliability of the STPI - Y: Depression Sub scales and overall.

Reliability statistics			
Scales	Cronbach’s Alpha	Sample Size	N of items
State Depression	.884	28	10
Trait Depression	.912	28	10
Overall	.946	28	20

Based on the Cronbach’s alpha coefficients presented in Table 3.6, the use of the STPY – Y Depression Subscale is deemed appropriate.

3.5.2.3 The Coping Orientations to Problems Experienced (COPE)

Questionnaire. The Coping Orientations to Problems Experienced (COPE) Questionnaire, developed by Carver, was used to measure coping mechanisms (Carver, 2013). Assessing coping mechanisms in general, some of the chosen responses are functional, while others are considered to be dysfunctional (Carver et al., 1989). The COPE assesses 15 coping strategies via 60 items according to how participants respond when confronted with a difficult or stressful event. These items are rated on a four-point Likert scale: (1) I usually don’t do this at all; (2) I usually do this a little bit; (3) I usually do this to a medium amount; and (4) I usually do this a lot.

The items are scored by summing the relevant items for each scale which gives an indication of which coping mechanism the individual relies on most (Carver et al., 1989). The coping strategies measured by the COPE are delineated in Table 3.7 below.

Table 3.7

The 15 Scales of the COPE.

Scale	Definition
Active coping	Taking steps to try remove the stressor, initiating direct action in attempt of coping.
Planning	Thinking about how to cope with the stressor and handle the problem, coming up with strategies.
Suppression of Competing Activities	Placing other projects aside to avoid distraction and place all focus on the stressor.
Restraint Coping	Waiting on an appropriate opportunity to present itself and to not respond prematurely.
Instrumental Social Support	Seeking advice, information and assistance.
Positive Reinterpretation and growth	Managing distressful emotions, however not dealing with the stressor per say. If done successfully, the reappraisal of a stressor should lead to active coping actions.
Acceptance	Accepting the reality of the stressful situation one is facing.
Denial	Refusing to believe that the stressor exists.
Turning to religion	Turn to one's religion or faith when faced with stress.

Table 3.7 *continued.*

Emotional social support	Moral support, sympathy and understanding.
Focus on & venting emotions	Venting feelings of distress experienced.
Behavioural disengagement	Reducing one's effort to deal with the stressor to the point of even giving up a goal that the stressor is hindering.
Mental disengagement	Utilising activities to distract from thinking of the goal that a stressor is interfering with, and to take one's mind off of a problem / stressor too.
Substance abuse	Using alcohol or drugs to reduce the effects of the stressor experienced.
Humour	Make light of the problem.

(Carver et al., 1989; Litman, 2006)

Examples of items from the cope include:

I get upset and let my emotions out.

I talk to someone who could do something concrete about the problem.

The COPE has been used in South Africa previously (Mostert & Joubert, 2005; Rothmann et al., 2011; Storm & Rothmann, 2003; Wiese et al., 2003). Acceptable alpha values were found for the COPE questionnaire (Storm and Rothmann, 2003). Specifically, Pienaar and Rothmann (2003) found an underpinning of a four-factor structure model, resembling a similar model to that proposed by the creators originally (Carver et al., 1989). Alpha coefficients for the four factor structural model were reported as: Approach coping: .92, Avoidance .86, Seeking emotional support:

.80 and Turning to religion: .83 (n = 131) (Pienaar & Rothmann, 2003). Cronbach's alpha coefficients for the present study are reported in Table 3.8 below.

Table 3.8

Reliability of the COPE: Scales and overall.

Reliability statistics			
Scales	Cronbach's Alpha	Sample Size	N of items
Growth	.598	28	4
Mental Disengagement	.544	28	4
Emotions	.804	28	4
Social Support	.695	28	4
Active Coping	.625	28	4
Denial	.643	28	4
Religious	.966	28	4
Humour	.784	28	4
Behavioural Disengagement	.728	28	4
Restraint	.722	28	4
Emotional Support	.824	28	4
Substance	.934	28	4
Acceptance	.539	28	4
Suppression	.495	28	4
Planning	.810	28	4
Overall	.820	28	60

Considering the overall Cronbach's alpha for the COPE as well as the COPE's successful use in South Africa previously, the assessment is deemed appropriate for use in this study.

3.5.2.4 The Predictive 6 Factor Resilience Scale (PR6). The Predictive 6 Factor Resilience Scale (PR6) developed by Rossouw and Rossouw (2018), was used to assess how resilient the participants rated. Consisting of 16 items in total, the PR6 measures six factors representing resilience and the ability of the person to apply resilience skills. A seventh scale, momentum, measures approach or avoidance toward future opportunities as a predictor of the likelihood of goal achievement (Rossouw & Rossouw, 2018). The seven scales are defined in Table 3.9 below.

Table 3.9

Definition of the PR6 scales.

Scale	Definition
Vision	Measures goal-directedness, sense of control self-worth and clarity of goals.
Composure	Emotional regulation and the ability to manage negative environments.
Reasoning	Sees challenges as opportunities, being resourceful, thinking critically and being creative in a stressful situation.
Tenacity	Quickly able to get back on feet; persevere through strife, high level of confidence in ability to deal with whatever they face.
Collaboration	Well-developed ability to connect, relate to others, support others, willing to ask for help.
Health	Foundation of resilience: Exercise, sleep, nutrition, brain health
Momentum	Future movement, open to new challenges, forward-looking approach toward resilience.

(Rossouw & Rossouw, 2018).

Each factor has at least one positively scored item and one negatively scored item. Each statement is rated as to how closely it resembles the person. The first 14 questions are rated on a five-point Likert scale: (1) Not at all like me; (2) A bit like me; (3) Somewhat like me; (4) Often like me; (5) Very much like me. The 15th question is rated on the following five-point Likert scale: (1) Less than once per week; (2) At least once a week; (3) Once to twice a week; (4) At least three times a week; and (5) Four times or more a week. Lastly, the 16th question is rated on the following five-point scale: (1) Poor; (2) Fair; (3) Average; (4) Good and (5) Excellent. Items are summed together, with some being reverse scored, and then turned into a percentile for interpretation.

Example questions include:

I stay determined through challenges

I have clear goals that I am working towards (Rossouw & Rossouw, 2018).

Unlike psychometric assessments such as personality where there is no right or wrong answer, there are preferred scores on resilience measures. In creation of the PR6, ten popular resilience measures were utilised in order to create the items, and the assessment has been normalised with a benchmark score for comparison purposes. This benchmark or normalisation score is utilised globally and ensures comparison and interpretation are possible toward a global standard (Rossouw & Rossouw, 2018). The PR6 has proven to be successful when utilised in a development programme to develop resilience (Rossouw, Chelsea & Beeson 2019). Additionally, the PR6 has proven to be a valid measure of resilience when utilised in an organisational capacity, with a Cronbach's alpha of .764 (n = 204) (Rossouw & Rossouw, 2016), as well as a successful predictor of job satisfaction, with an internal consistency of .8398 (n = 617) (Rossouw, Rossouw, Paynter, Ward & Khana, 2017). Cronbach's alphas for the current study were calculated as follows in Table 3.10:

Table 3.10*Reliability of the PR6: Scales and overall.*

Reliability statistics			
Scales	Cronbach's Alpha	Sample Size	N of items
Tenacity	.720	28	2
Vision	.444	28	2
Collaboration	.413	28	2
Composure	.757	28	2
Reason	.699	28	2
Momentum	.520	28	2
Health	.633	28	4
Overall	.519	28	16

While the overall Cronbach's alpha was lower than .7, there is a lack of reliability measures in South Africa. While the South African Resilience Indicator would have been preferable, the developer was not contactable. Additionally, the PR6 has been utilised successfully as delineated above.

3.6 Qualitative measure: Semi-Structured Interview

In order to provide for an understanding of the subjective experiences of TP conservationists, a semi-structured interview was conducted. This interview was intended to offer the opportunity to reveal qualitative themes related to the subjective experiences of TP conservationists. Sample two (n = 4) participated in this second phase of the research. The interview questions that guided the interviews conducted are available in Appendix E. The aim of the questions included in the semi-structured interview guide was to obtain subjective information regarding burnout, depression, coping mechanisms and resilience.

3.7 Data Collection Procedure

This study consisted of two phases of data collection. These phases are displayed in Figure 3.6 below.

Figure 3.6.

The two phases of this research study.



3.7.1 Data Collection Procedure: First Phase

Within the first phase of this research, the four psychological measures were converted to electronic versions on an online data collection program called Survey Monkey. An electronic link to the online survey was emailed personally to each participant in sample one, along with the introduction letter (Appendix A). The data obtained was captured in a Microsoft excel spreadsheet.

3.7.2 Data Collection Procedure: Second Phase

Four TP conservationists included in the first phase were approached to participate in phase two. After reading the introduction letter (Appendix C) to phase two as well as completing the consent form (Appendix D), the semi-structured interview was conducted. This took place in a quiet and private room at the JWVH at a time that was convenient for the participants. The interviews were recorded to ensure that the exact responses could be documented.

3.8 Data Analysis

The data collected in both phases was then analysed to enable inferences to be drawn from the data. The specific techniques utilised are delineated below.

3.8.1 Quantitative Data Analysis

The quantitative data obtained was captured into a database and analysed utilising SPSS Version 27. Descriptive statistics were completed on all the psychometric assessments used. Next, a correlation matrix including all the assessment scales was created. Multiple regression analyses between the MBI, COPE and PR6 as well as the STPI Depression subscale, COPE and PR6 were drawn. Lastly, in addition to the statistics relating to the objectives of the study, a Kruskal Wallis test was completed to see if age is a determining factor in any of the assessment results.

3.8.2 Qualitative Data Analysis

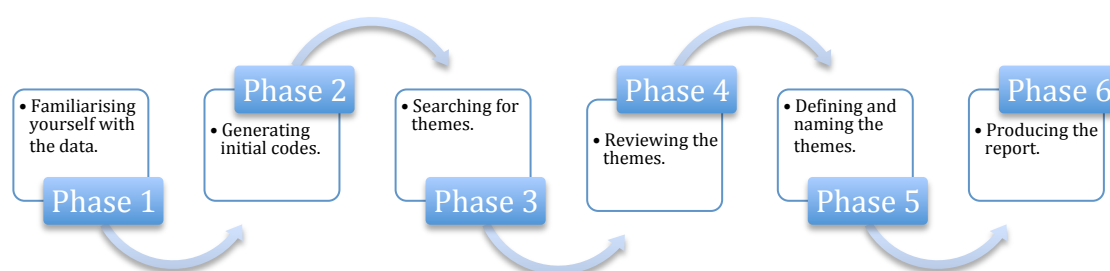
The semi-structured interviews were recorded, and were subsequently transcribed. Thematic analysis was conducted on the qualitative data retrieved from the transcribed interviews. Thematic analysis involves the identification, analysis and reporting of patterns (themes) in the data (Braun & Clarke, 2006). The data is minimally organised but still comprehensive enough to provide rich detail adding to the interpretation of the research topic (Braun & Clarke, 2006; Terry, Hayfield, Clarke & Braun, 2017).

Inductive thematic analysis was used, which involved working with a 'bottom up' approach that was driven by the data itself (Braun & Clarke, 2006). Thus, codes were created in order to better understand the data collected. These codes were then developed into themes, which described and summarised the data (Braun & Clarke, 2006).

According to Braun and Clarke (2006), there are six steps in thematic analysis. Initially, it is important to be familiar with data to be analysed. Data involving verbal responses, such as the semi-structured interview, were transcribed. Next, initial codes were generated (Braun & Clarke, 2006; Terry et al., 2017). This list involved all ideas that the researcher could see in the data. Then, broader themes were identified. Thereafter, the themes were revised – eliminating themes where there was not enough data to support them, merging themes that were similar, or separating themes where more than one idea existed in one theme (Terry et al., 2017). The themes were then further refined and defined. Lastly, a write up of the different themes and how they occurred in relation to each other was produced (Braun & Clarke, 2006). This write up or report was not produced in this research per se, as the write up of the results and the analysis thereof was written in Chapter 6. This write up not only summarises the themes found within the data, but critically analyses it in relation to the study and research questions. Lastly, the qualitative and quantitative data were compared for further insight into the population being studied (Terry et al., 2017). This process is depicted in Figure 3.7 below.

Figure 3.7.

The Six Phases of Braun and Clarke's Thematic Analysis.



(Braun & Clarke, 2006).

3.8.2.1 Establishing Trustworthiness. Based on the criteria established by Guba and Lincoln, establishing trustworthiness of the qualitative data collected is as imperative as reliability of the quantitative measures utilised (Nowell, Norris, White, & Moules, 2017). In order to be trustworthy, the data needs to meet four criteria: credibility, transferability, dependability and confirmability (Nowell et al., 2017). Credibility refers to the fit between the respondents' views and the representation thereof. Within this research, this was achieved by giving direct quotations of the interviews held with respondents within the second phase of data collection. Next, transferability refers to how generalisable the information is to other situations (Moon, Brewer, Januchowski-Hartley, Adams & Blackman, 2016; Nowell et al., 2017). Within this study, this was achieved by giving detailed descriptions of the procedures followed as well as the findings of this study. Dependability refers to the detailed and evidence based information that is given within a study. In order to achieve this within the present study, the decisions and information received were clearly documented (Moon et al., 2016; Nowell et al., 2017). Lastly, confirmability refers to the establishment that the conclusions drawn are done from the data collected (Moon et al., 2016; Nowell et al., 2017). Thus, the conclusions reached and interpretations made are clearly delineated within this research to ensure that confirmability is reached.

3.9 Ethical Considerations

Prior to the beginning of this research, ethical clearance was obtained from the Research and Ethics Committee of the Faculty of Humanities at the University of Pretoria. A copy of this letter is available in Appendix F. When approaching the APWG and JWVH for their assistance in gaining access to the TP conservationists, information regarding the aim, and information regarding the study was given. Both organisations provided their support for the study. Proof of this is contained in Appendices G and H respectively. Following this, the potential participants were

emailed invitation letters to participate where the aim and involvement therein was detailed (Appendix A). All information was given electronically, and informed consent (Appendix B) was obtained from all participants for both phases, prior to the start of each phase.

It was indicated that participation was voluntary and that should they wish, cancellation of participation was possible at any moment during the study. Contact details of the researcher as well as the researcher's supervisor were given. Furthermore, it was stressed that participation in this study could produce additional feelings or concerns that the potential participants would want to discuss further. For these purposes, the contact details of organisations that are mandated to voluntarily and freely assist were given.

As the participants are TP conservationists, their work involves the conservation of the most trafficked mammal globally. This means that their anonymity for the sake of their safety as well as that of the TPs was of utmost importance. It is for this reason that no identifying information was gathered on the online Survey Monkey questionnaire (phase one), and the details of the individuals participating in phase two were not included in the recordings either.

Participants were informed that the results of the study are for research purposes only. As the information given and data collected was, for the most part, anonymous, it is not possible to provide individual feedback. A brief report of the findings will be given to both the JWVH and the APWG. Participants were informed that the completed study would be available on request. Participants were also informed that the data collected would be stored at the Department of Psychology for 15 years.

3.10 Conclusion

This chapter discussed the research methodology used for the present study. Information was provided pertaining to the sample as well as the measurement instruments utilised. Information regarding the various phases of the research was discussed, involving the incorporation of both a quantitative and qualitative approach in order to achieve the aim of this research study. In the next two chapters, the results and the analysis thereof will be provided.

Chapter 4:

Quantitative Results

4.1 Introduction

Chapter 3 delved into the research methodology employed for the study. This chapter will focus on the results obtained when the quantitative data was analysed. Due to the small sample size, non-parametric statistics were calculated when determining relationships between the constructs under investigation. These types of statistics were also used to determine if any differences occurred between sub-groups that were formed using the sample. First, the descriptive statistics will be reported followed by the results of the non-parametric analyses.

4.2 The Maslach Burnout Inventory – General Survey (MBI - GS)

In order to determine the prevalence of burnout among TP conservationists, descriptive statistics were calculated. Table 4.1 represents the descriptive statistics of the MBI and its subscales.

Table 4.1*Descriptive statistics of the MBI and its subscales (n = 28)*

		MBI:Exhaustion	MBI: Cynicism	MBI: Professional efficacy	MBI: Overall
N	Valid	28	28	28	28
	Missing	0	0	0	0
Mean		2,8286	1,9857	4,9821	3,3728
Std. Deviation		1,57359	1,23759	0,62086	0,84119
Range		5,80	5,20	2,50	3,38
Minimum		0,20	0,00	3,50	1,94
Maximum		6,00	5,20	6,00	5,31
Percentiles	25	1,2500	1,2000	4,5000	2,5781
	50	3,0000	2,0000	5,1667	3,4063
	75	4,1500	2,5500	5,5000	3,7969

In order to calculate burnout, the MBI manual indicates the following formula:

Burnout = (exhaustion score greater than .50 standard deviations above the mean for exhaustion) + (cynicism score greater than 1.25 standard deviations above the mean).

These guidelines were applied to the current dataset in order to determine the amount of TP conservationists currently experiencing burnout. The results are presented in Table 4.2, with the participants experiencing burnout being highlighted in blue.

Table 4.2*Frequency of Burnout*

Participant Number	Exhaustion	Cynicism
1	3,6	2
2	3	2,4
3	4,2	0,2
4	1	1,6
5	2,6	1,6
6	4,4	2
7	1	2
8	4	3,8
9	5,2	2,2
10	4,6	2,6
11	1,4	2
12	3	1,4
13	1	1,2
14	3	2,6
15	0,2	2,4
16	1,4	1,2
17	6	5,2
18	3,2	1,8
19	1,2	0
20	4,8	3,4
21	1	0,4
22	3	2,4
23	2,6	2,2
24	3,8	3,2
25	1	0,8
26	2,2	0,4
27	1,8	0,4
28	5	4,2

From Table 4.2, it can be seen that three TP conservationists experience burnout.

4.3 State Trait Personality Inventory Form Y (STPI - Y) - Depression subscale

In order to determine the prevalence of state and trait depression in TP conservationists, descriptive statistics were calculated. The descriptive statistics of the STPI – Depression subscale that measures both state and trait depression is presented in Table 4.3 below.

Table 4.3

Descriptive statistics of the STPI Depression subscale (n = 28)

		STPI: State	STPI: Trait	STPI: Overall
N	Valid	28	28	28
	Missing	0	0	0
Mean		30,07	29,57	59,6429
Std. Deviation		5,962	5,692	11,37644
Range		22	26	45,00
Minimum		15	14	32,00
Maximum		37	40	77,00
Percentiles	25	26,50	28,00	54,0000
	50	31,50	30,50	62,0000
	75	35,00	32,75	67,7500

Coetzee (2005) suggests that scores above 20 are indicative of the experience of state and trait depression. Table 4.3 indicates that both the means of state depression (30.07) and trait depression (29.57) were higher than the cut-off point.

Figures 4.1 and 4.2 depict the frequencies for state and trait depression respectively. Figure 4.1 indicates that 25 of the 28 TP conservationists are currently

experiencing state depression. Figure 4.2 suggests that 26 of the TP conservationists are experiencing trait depression.

Figure 4.1

Frequency scores for State Depression

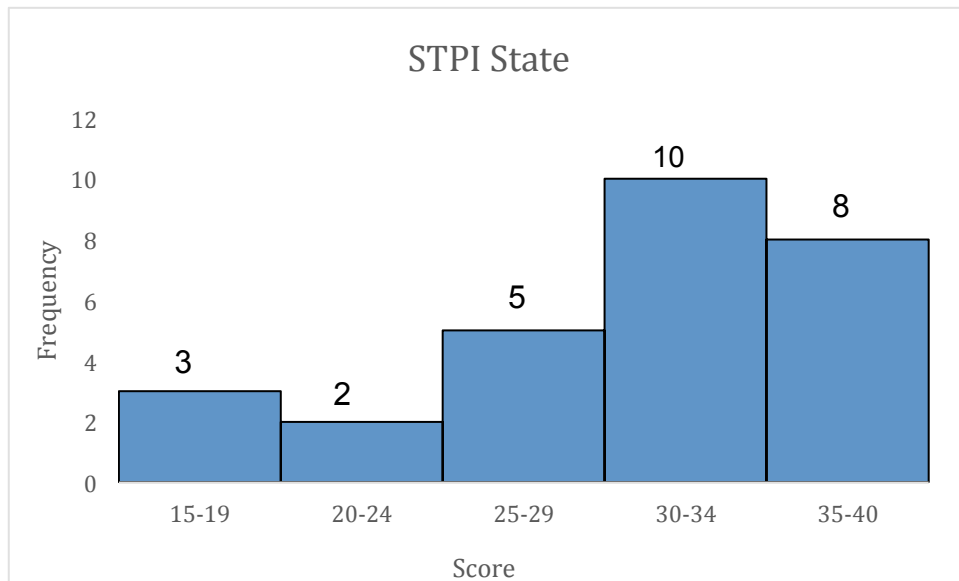
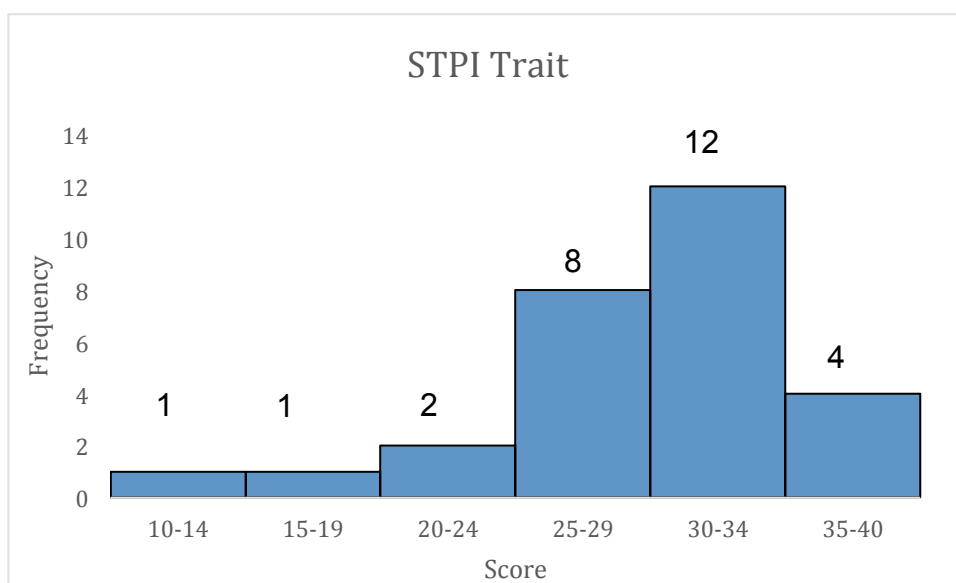


Figure 4.2

Frequency scores for Trait Depression



4.4 The Coping orientations to problems experienced (COPE) questionnaire

In order to establish if the TP conservationists are coping with the prolonged stress that they are exposed to, as well as what coping mechanisms they employ, descriptive statistics were calculated. The descriptive statistics of the COPE inventory including all of its subscales are depicted in Table 4.4 below.

Table 4.4*Descriptive statistics of the COPE (n = 28)*

		Coping: Positive reinterpretation and growth	Coping: Focus on and venting of emotions	Coping: Use of instrumental social support	Coping: Active coping	Coping: Denial	Coping: Religious coping	Coping: Humour	Coping: Mental disengagement	Coping: Behavioral disengagement	Coping: Restraint	Coping: Use of emotional social support	Coping: Substance use	Coping: Acceptance	Coping: Suppression of competing activities	Coping: Planning	Coping Overall
N	Valid	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
	Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mean		12,21	8,50	10,11	12,32	5,14	7,07	8,89	9,11	5,43	9,89	9,07	5,18	11,86	10,18	12,96	137,9286
Std. Deviation		2,149	2,912	2,615	2,326	1,671	4,463	2,998	2,767	1,752	2,470	3,102	2,127	2,031	2,245	2,426	15,12645
Range		7	12	12	9	7	12	11	11	6	12	11	8	8	11	8	64,00
Minimum		9	4	4	7	4	4	4	4	4	4	4	4	8	5	8	114,00
Maximum		16	16	16	16	11	16	15	15	10	16	15	12	16	16	16	178,00
Percentiles	25	10,25	6,00	8,00	11,00	4,00	4,00	6,00	7,00	4,00	8,25	7,00	4,00	10,25	9,00	12,00	126,7500
	50	12,00	8,00	10,00	12,00	4,50	4,00	9,00	9,50	5,00	9,50	9,00	4,00	12,00	10,00	13,00	136,5000
	75	13,00	9,75	12,00	14,00	6,00	10,00	11,00	11,00	6,00	11,75	11,00	5,75	13,00	11,00	15,00	145,5000

Table 4.4 reveals that the means for all the coping mechanisms are within the moderate range. Specifically, while Carver (2013) suggests that there are no cut-off scores for the COPE, the lowest score for any coping mechanism is four, with the highest scores occurring between 13 and 16. Thus, scores between four and 13 indicate a moderate likelihood of the behaviour being utilised as a coping mechanism.

Figures 4.3 to 4.17 depict the frequencies for each coping mechanism in graph format. These will be delineated below.

Figure 4.3

Positive reinterpretation and growth as a coping mechanism

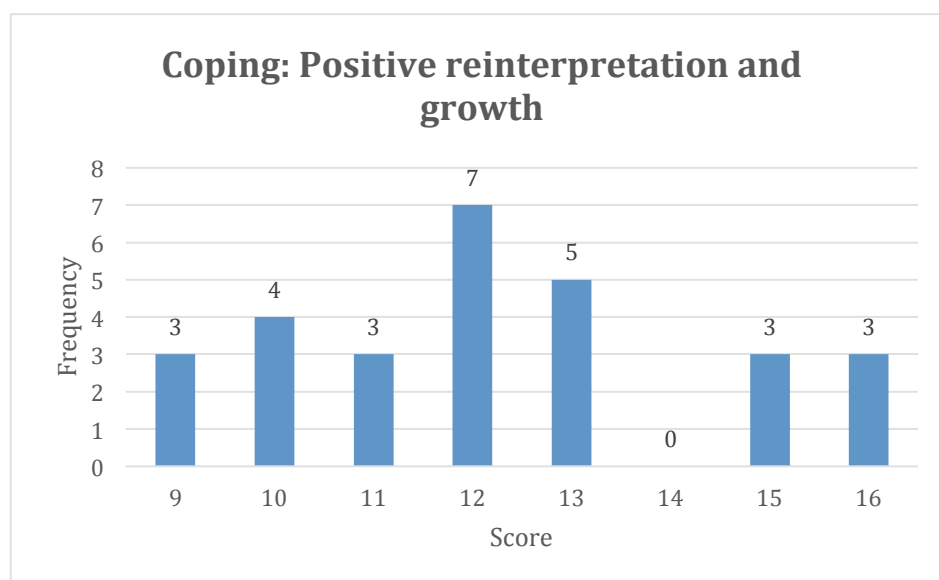


Figure 4.3 indicates that 11 TP conservationists are highly likely to employ positive reinterpretation and growth as a coping mechanism; while 17 TP conservationists are moderately inclined to do so.

Figure 4.4

Focus on and venting of emotions as a coping mechanism

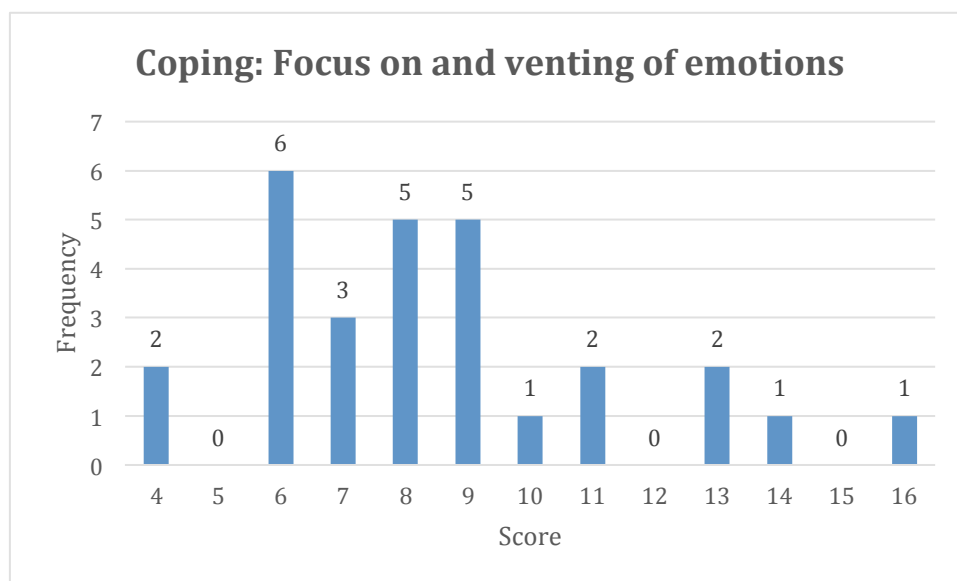


Figure 4.4 suggests that four TP conservationists are very likely to focus on and vent their emotions. Two TP conservationists are hardly likely to vent their emotions and the balance of TP conservationists ($n = 22$) are moderately inclined to do so.

Figure 4.5

Use of instrumental social support as a coping mechanism

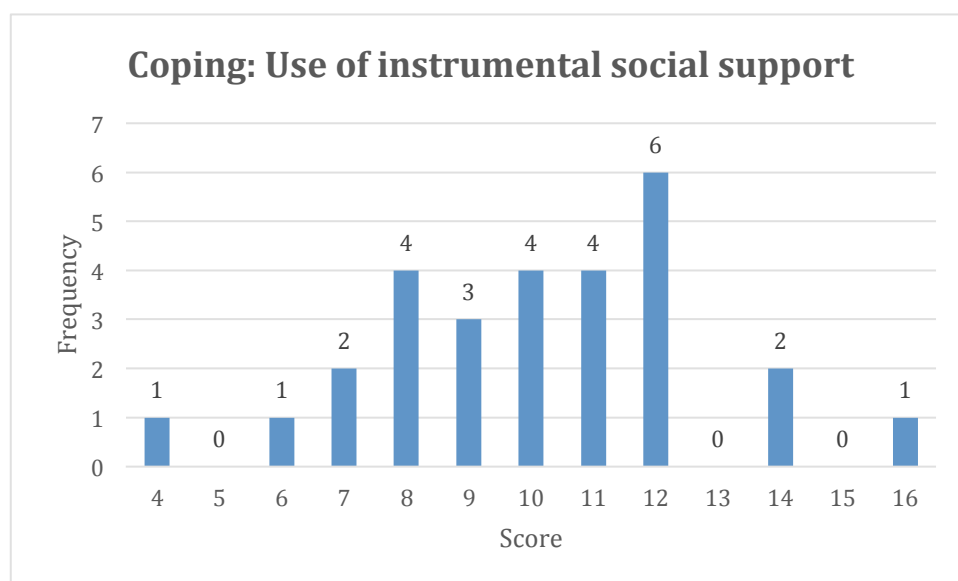
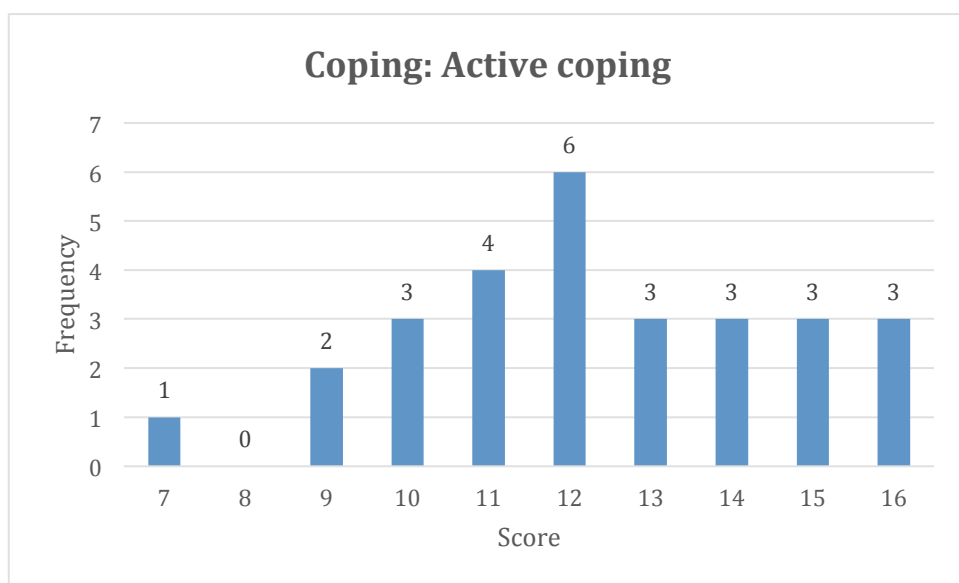


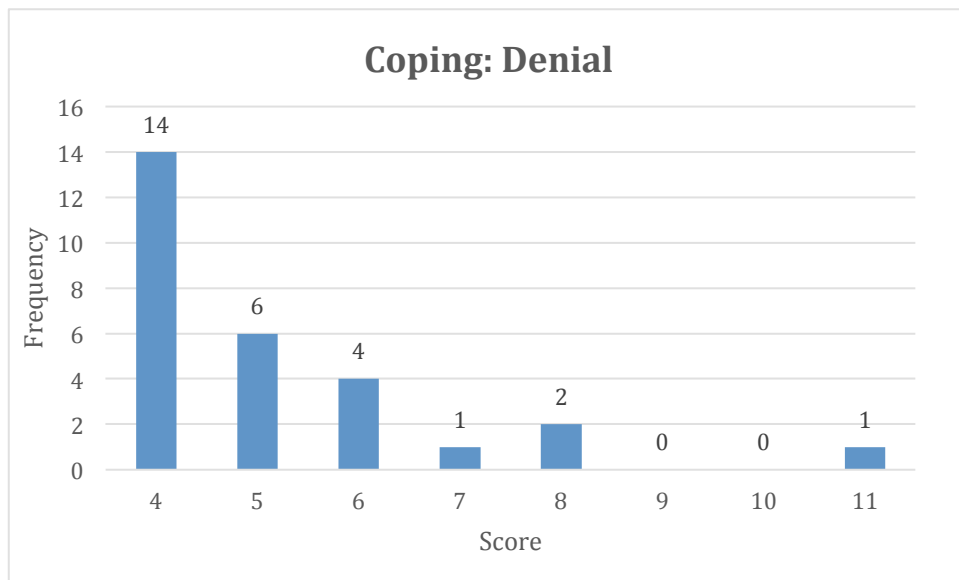
Figure 4.5 reveals that three TP conservationists are highly likely to rely on instrumental social support. One TP conservationist is not inclined to rely on instrumental social support, and the majority of the TP conservation sample (n = 25) are somewhat inclined to rely on instrumental social support.

Figure 4.6

Active coping as a coping mechanism



Within Figure 4.6, 12 TP conservationists are shown to be actively coping, whereas one TP conservationist is less likely to be coping actively with current stressors. 15 TP conservationists reported to be moderately inclined to actively cope with current stressors.

Figure 4.7*Denial as a coping mechanism*

From Figure 4.7, one TP conservationist relies on denial as a coping mechanism whereas 14 TP conservationists are not likely at all to rely on this coping mechanism.

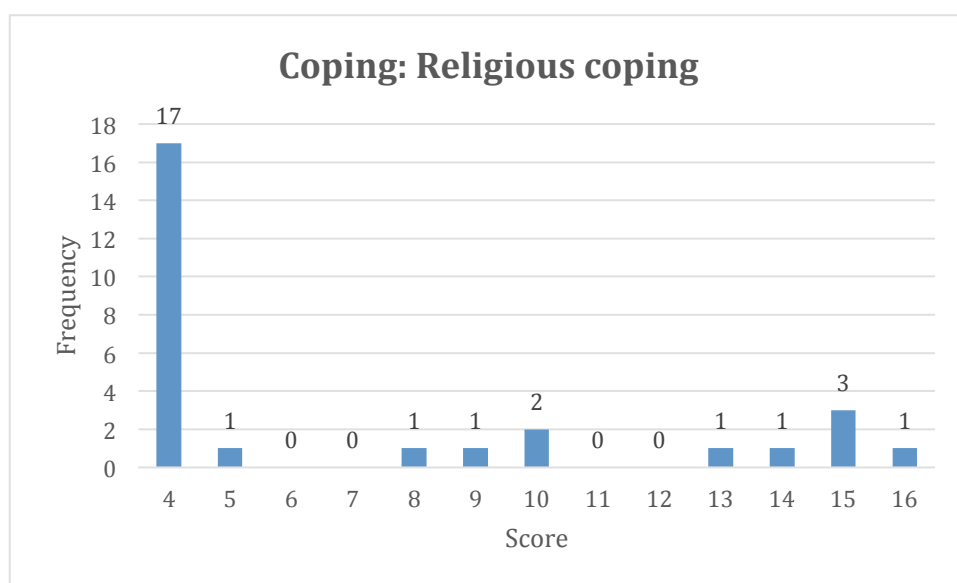
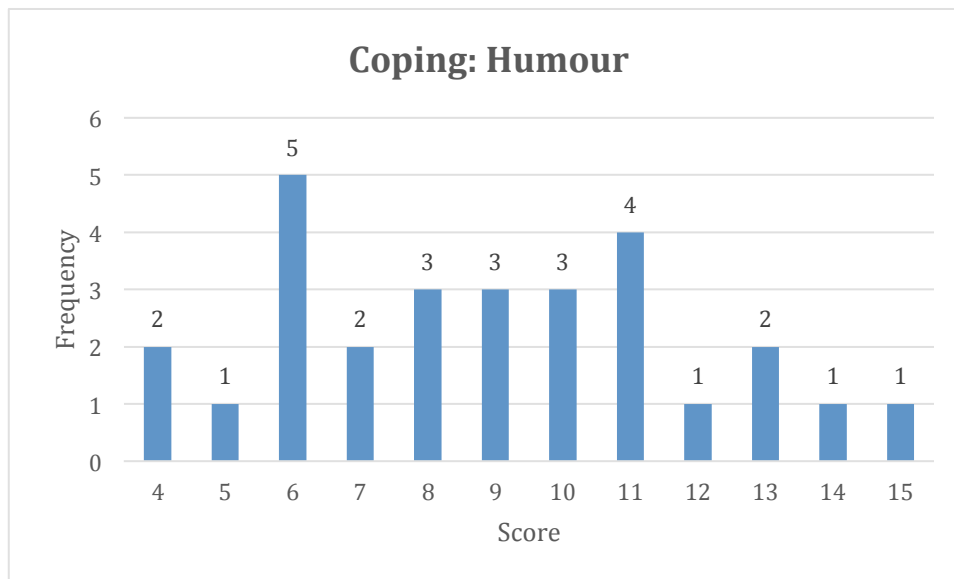
Figure 4.8*Religion as a coping mechanism*

Figure 4.8 suggests that while six TP conservationists admit to relying on religion as a coping mechanism, more than half of the sample ($n = 17$) is highly unlikely to rely on religion as a coping mechanism.

Figure 4.9

Humour as a coping mechanism



According to Figure 4.9, most of the TP conservationists ($n = 22$) are moderately likely to utilise humour as a coping mechanism.

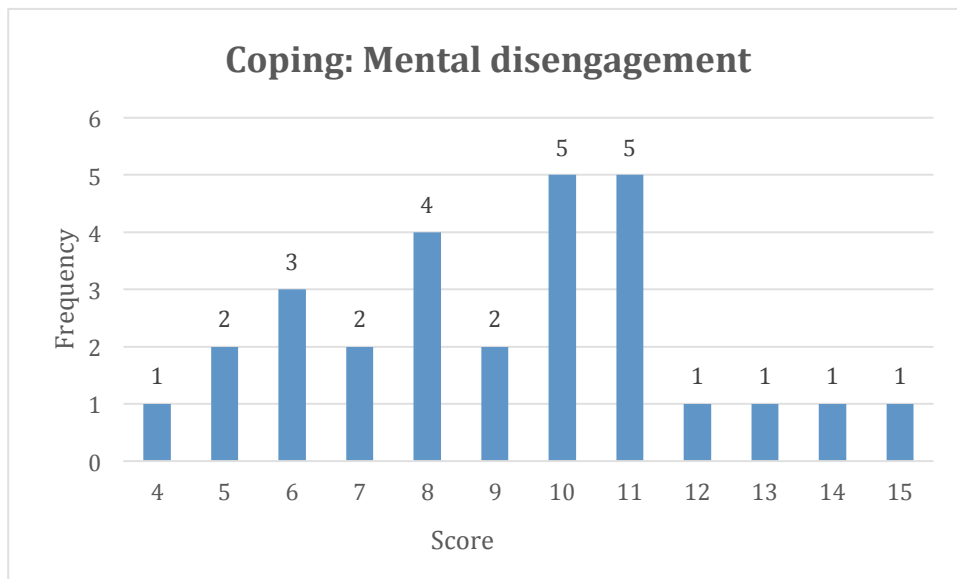
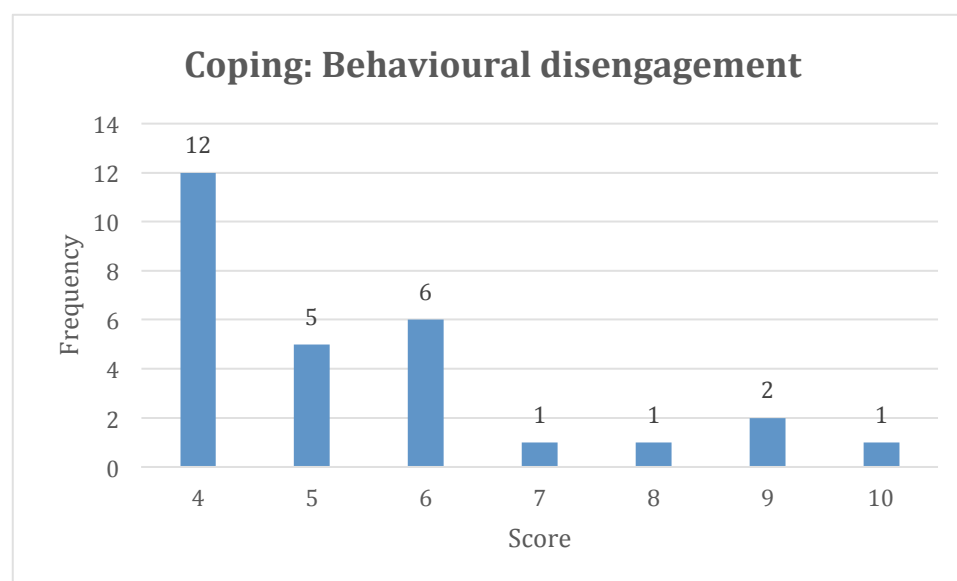
Figure 4.10*Mental Disengagement as a coping mechanism*

Figure 4.10 indicates that one TP conservationist has suggested they do not utilise disengaging mentally in order to cope with stressors, while four TP conservationists have admitted the opposite.

Figure 4.11*Behavioural Disengagement as a coping mechanism*

From Figure 4.11, it can be seen that 12 TP conservationists suggested that they are unlikely to rely on disengaging behaviourally as a coping mechanism.

Figure 4.12

Restraint as a coping mechanism

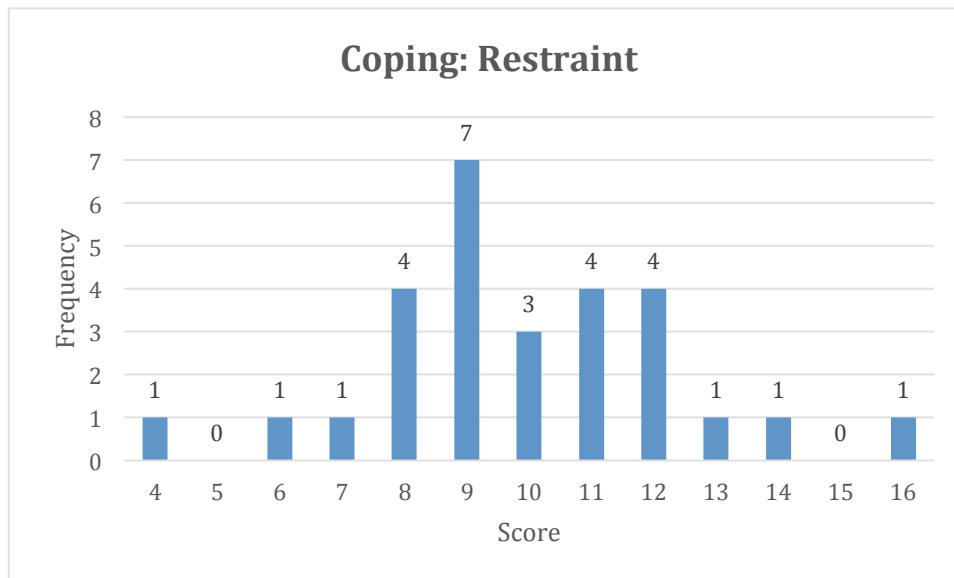
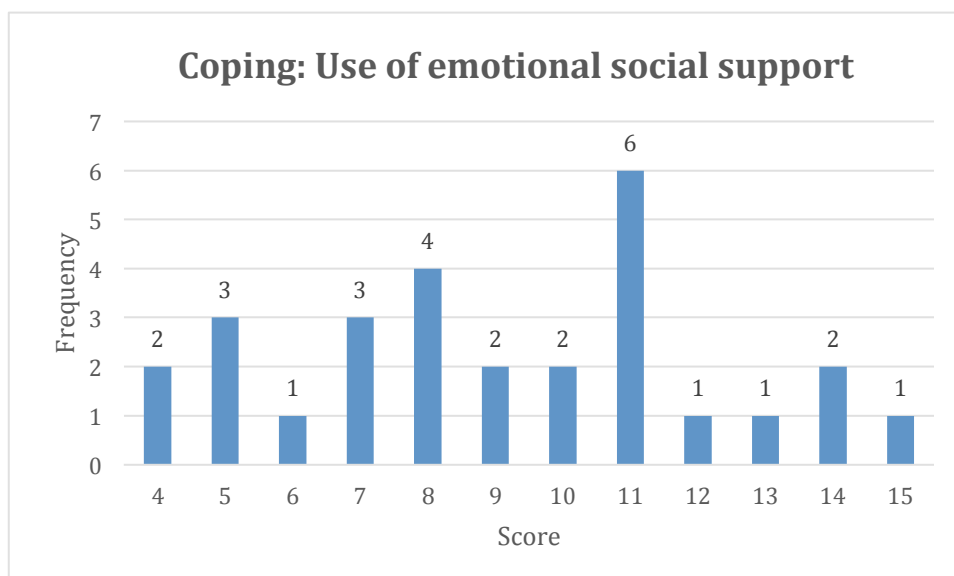


Figure 4.12 shows that most of the sample ($n = 24$) are moderately inclined to utilise restraint as a coping mechanism to ward off stressors.

Figure 4.13

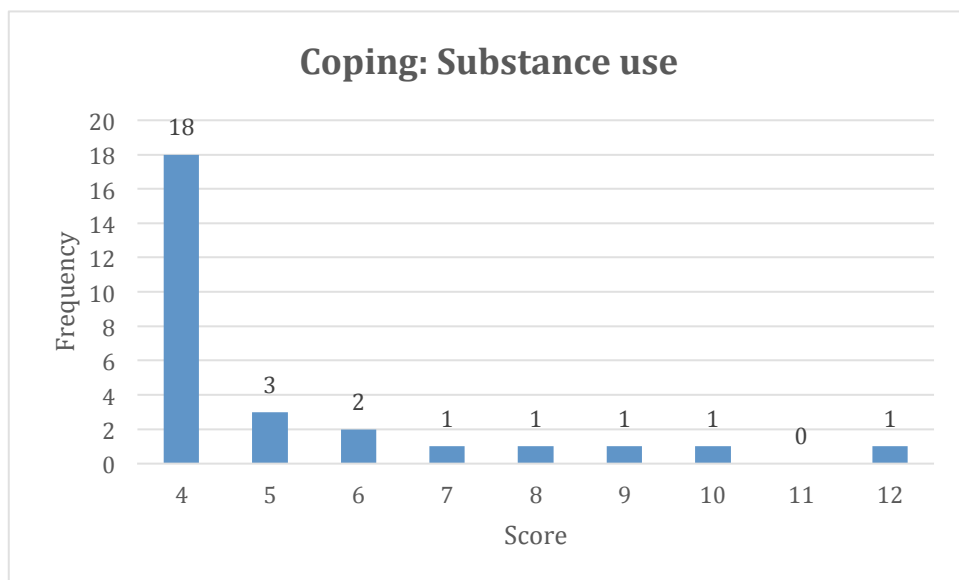
Use of emotional social support as a coping mechanism



In Figure 4.13, while only two participants indicated that they are unlikely to utilise emotional social support, most of the sample is moderately inclined to use it ($n = 22$).

Figure 4.14

Substance use as a coping mechanism



In Figure 4.14 it can be seen that the majority of the sample ($n = 18$) is unlikely to utilise substance abuse as a coping mechanism.

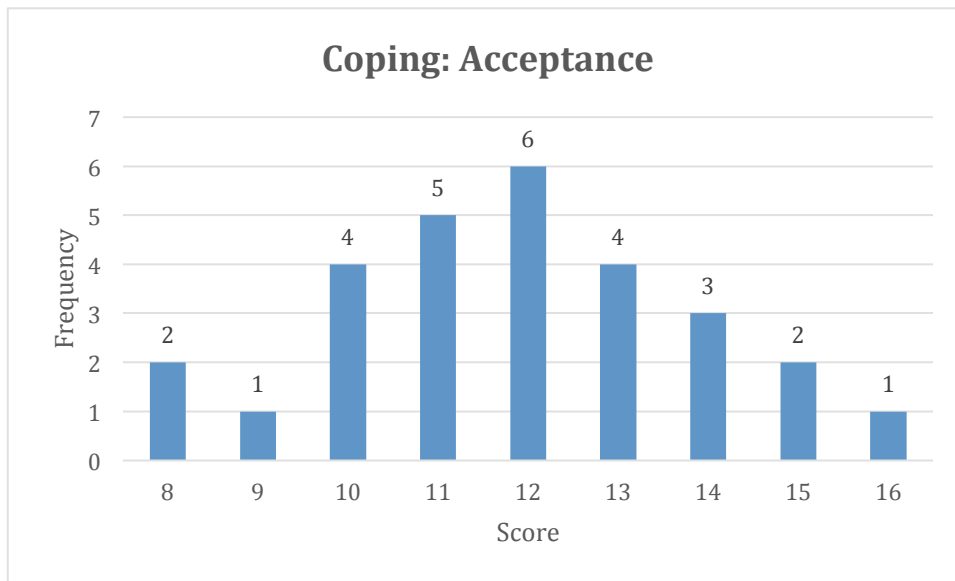
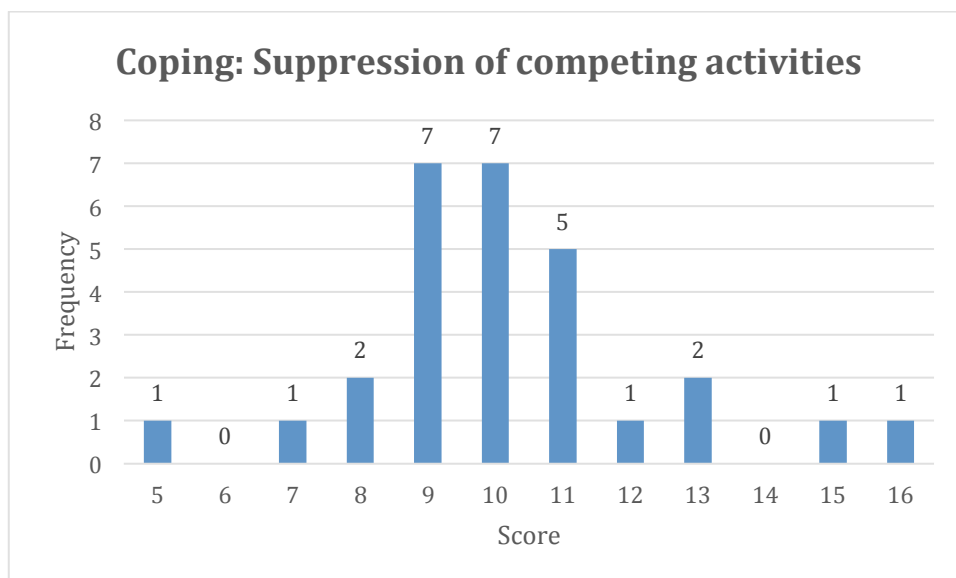
Figure 4.15*Acceptance as a coping mechanism*

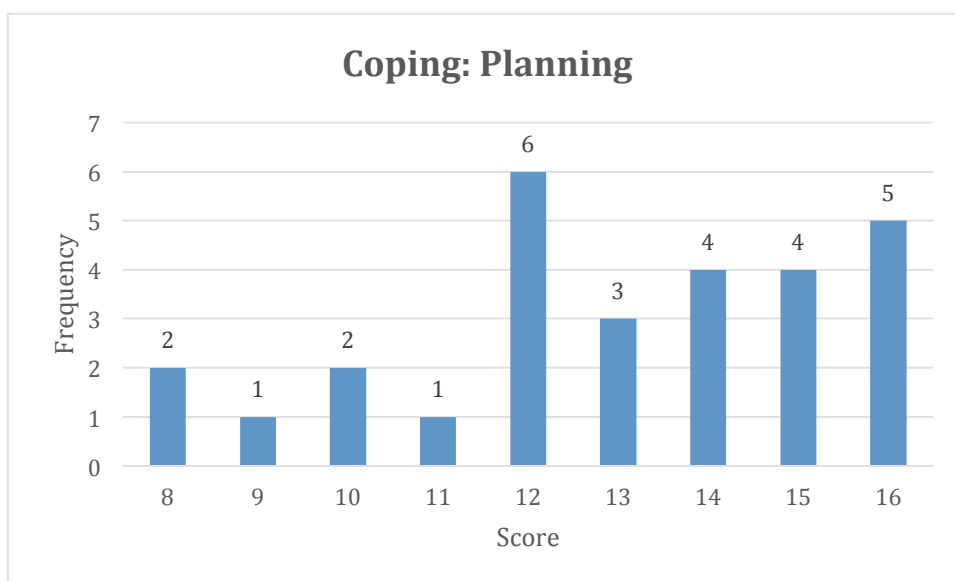
Figure 4.15 indicates that ten TP conservationists utilise acceptance as a coping mechanism, whereas 18 TP conservationists are moderately inclined to utilise it.

Figure 4.16*Suppression of competing activities as a coping mechanism*

Suppression of competing activities as a coping mechanism is depicted in Figure 4.16. This coping mechanism is moderately likely to be utilised by TP conservationists (n = 24). Only four TP conservationists suggested that they would rely on this coping mechanism to mitigate stress.

Figure 4.17

Planning as a coping mechanism



From Figure 4.17, it can be seen that 16 TP conservationists embark on planning in order to handle stressors.

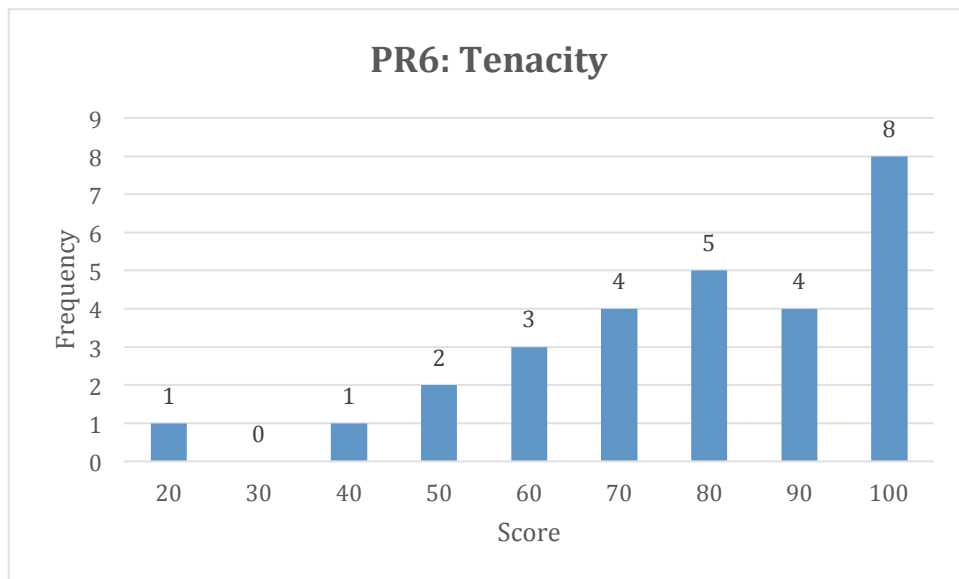
4.5 The predictive 6 factor resilience scale (PR6)

In order to investigate the incidence of resilience displayed by TP conservationists, descriptive statistics were calculated. The descriptive statistics of the PR6 and all its subscales / dimensions are shown in Table 4.5.

Table 4.5*Descriptive statistics of the PR6 (n = 28)*

		PR6: Tena-city	PR6: Vision	PR6: Collabo-ration	PR6: Compo-sure	PR6: Reason-ing	PR6: Momen-tum	PR6: Health	PR6: Overall
N	Valid	28	28	28	28	28	28	28	28
	Missing	0	0	0	0	0	0	0	0
Mean		77,86	75,71	73,93	85,00	63,57	41,43	54,82	65,8929
Std. Deviation		21,145	18,141	14,489	16,443	23,128	18,402	16,526	7,89732
Range		80	70	60	60	80	80	55	32,50
Minimum		20	30	40	40	20	20	30	45,00
Maximum		100	100	100	100	100	100	85	77,50
Percen-tiles	25	62,50	62,50	62,50	70,00	50,00	30,00	40,00	61,5625
	50	80,00	80,00	70,00	90,00	65,00	40,00	52,50	65,6250
	75	100,00	90,00	87,50	100,00	80,00	50,00	65,00	72,1875

Table 4.5 reveals that tenacity (77.86), vision (75.71) and composure (85.00) all fall within the high range of scores. The overall resilience mean score falls within the mid-range with a mean of 65.8929. Momentum has the lowest mean of 41.43; however this still falls within the mid-range. The frequencies of the resilience scales are presented in graph format in figures 4.18 to 4.24 below.

Figure 4.18*Tenacity*

Based on Figure 4.18, it can be seen that the majority of the sample ($n = 17$) have described themselves as tenacious. One TP conservationist has suggested that they possess low tenacity.

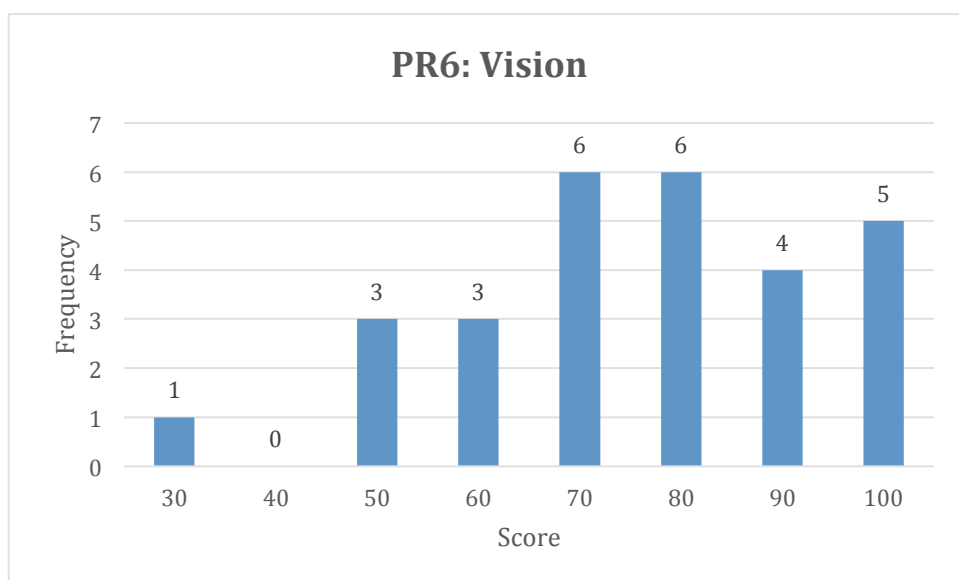
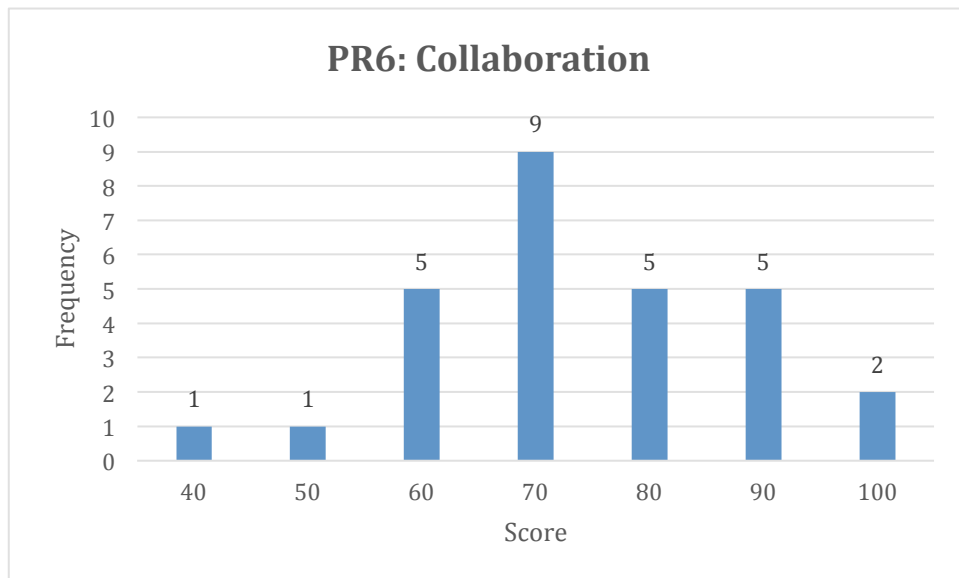
Figure 4.19*Vision*

Figure 4.19 depicts that 27 TP conservationists have suggested they possess vision, while one TP conservationist does not believe they possess vision.

Figure 4.20

Collaboration



In Figure 4.20, it is shown that 15 TP conservationists believe they are moderately inclined to collaborate.

Figure 4.21

Composure

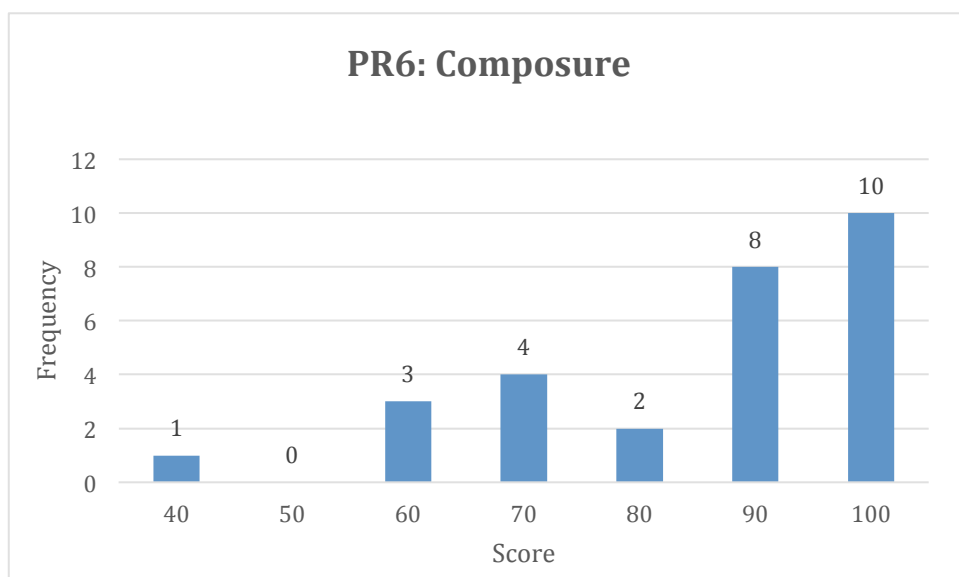
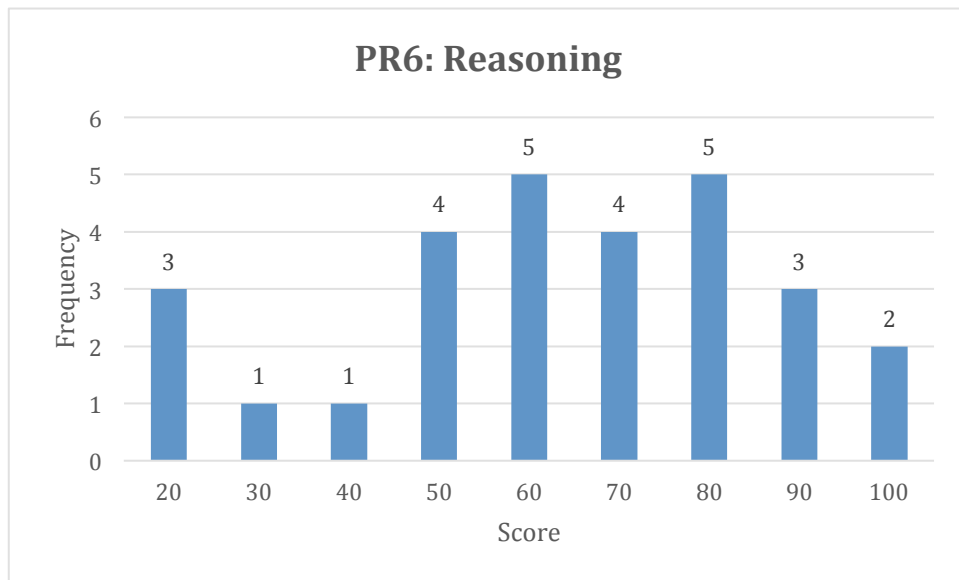


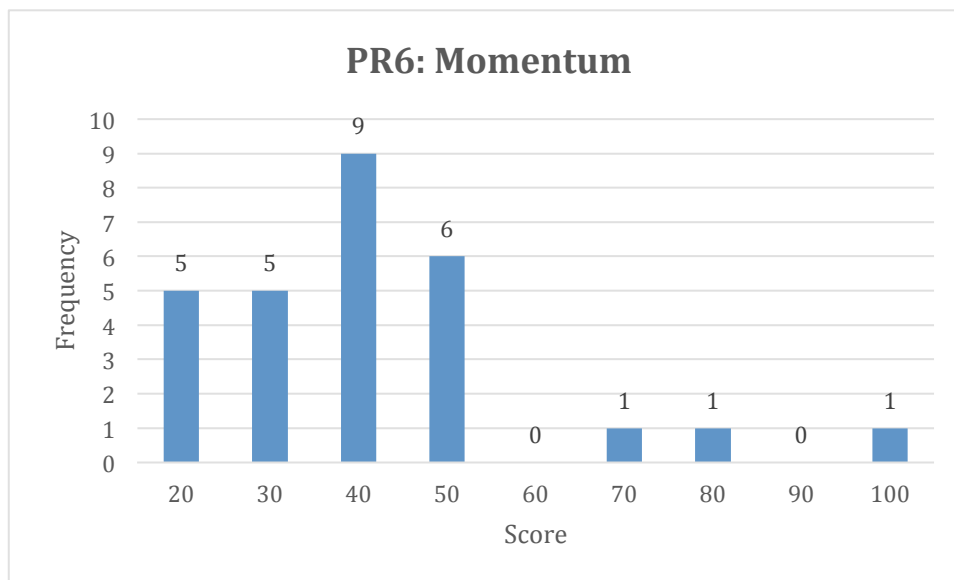
Figure 4.21 suggests that 20 TP conservationists believe they are composed, whereas one believes they are not.

Figure 4.22

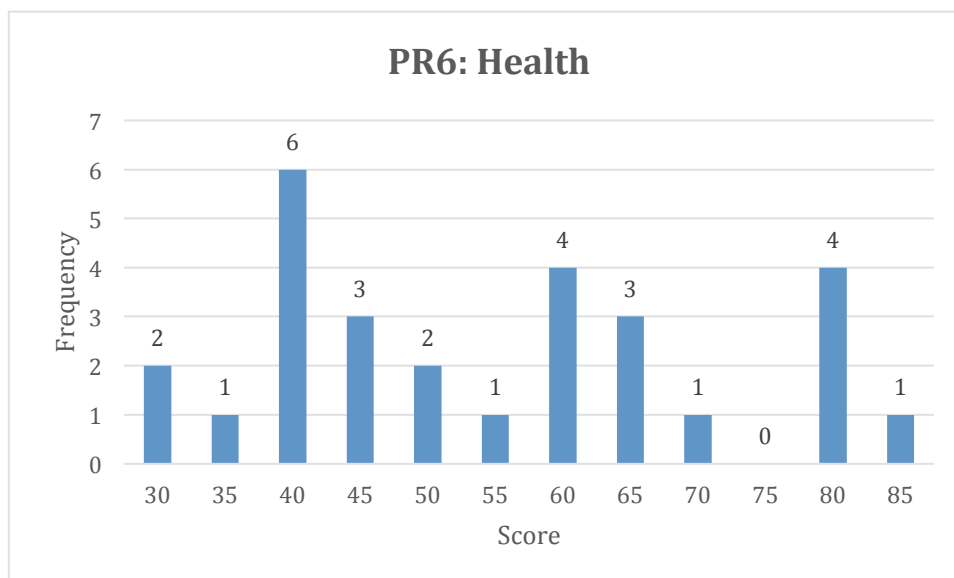
Reasoning



According to Figure 4.22, while 10 TP conservationists reported to utilise reasoning, the majority of the sample ($n = 15$) believe they are moderately inclined to rely on reasoning.

Figure 4.23*Momentum*

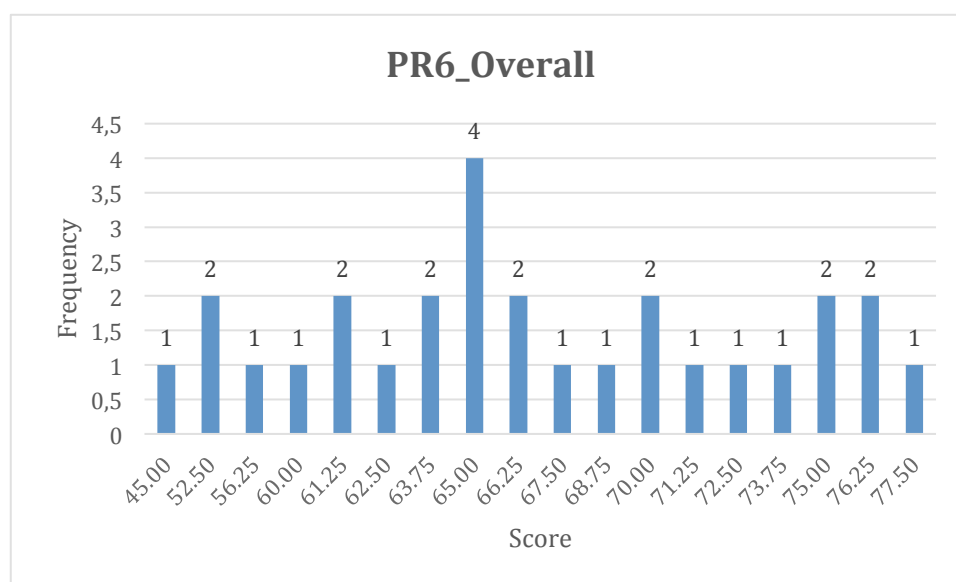
Based on the results depicted in Figure 4.23, only two of the TP conservationists believe they have momentum. The majority of the sample is within the moderate range ($n = 20$).

Figure 4.24*Health*

As can be seen in Figure 4.24, most of the sample (n = 23) believes that their health is within the moderate range.

Figure 4.25

Frequency scores PR6 overall



Regarding overall resilience, Figure 4.25 indicates that five TP conservationists scored within the high range of resilience, with the rest of the sample falls within the moderate range.

4.6 Relationships between Burnout, State and Trait Depression, Coping Mechanisms and Resilience

In order to determine if relationships exist between burnout, state and trait depression, coping mechanisms and resilience, a correlation matrix was computed (Pallant, 2010). Furthermore, the correlation matrix will suggest the strength of the relationship between the constructs as well as the extent to which the related constructs impact one another (Pallant, 2010). These relationships were investigated with a Spearman's Rho two-tailed test (non-parametric statistics), as the data did not meet the requirements for parametric statistics (Pallant, 2010). This computation was

applied to the realised sample; $n = 28$. The results are presented over a number of tables that follow.

Table 4.6

Correlation between MBI and the COPE

			MBI: Exhaustion	MBI: Cynicism	MBI: Professional efficacy	MBI Overall
Spearman's rho	Coping: Positive reinterpretation and growth	Correlation Coefficient	0,110	-0,088	0,374	0,100
		Sig. (2-tailed)	0,577	0,656	0,050	0,611
		N	28	28	28	28
	Coping: Focus on and venting of emotions	Correlation Coefficient	0,196	0,353	0,127	0,283
		Sig. (2-tailed)	0,318	0,066	0,521	0,144
		N	28	28	28	28
	Coping: Use of instrumental social support	Correlation Coefficient	0,183	0,128	0,020	0,184
		Sig. (2-tailed)	0,352	0,516	0,918	0,348
		N	28	28	28	28
	Coping: Active coping	Correlation Coefficient	0,093	-0,026	-0,068	0,047
		Sig. (2-tailed)	0,637	0,894	0,732	0,812
		N	28	28	28	28
	Coping: Denial	Correlation Coefficient	0,129	0,130	-0,168	0,075
		Sig. (2-tailed)	0,512	0,510	0,393	0,704
		N	28	28	28	28
	Coping: Religious coping	Correlation Coefficient	-0,143	-0,284	-0,137	-0,262
		Sig. (2-tailed)	0,469	0,143	0,486	0,179
		N	28	28	28	28
	Coping: Humour	Correlation Coefficient	-0,016	0,018	0,350	0,119
		Sig. (2-tailed)	0,935	0,929	0,068	0,546
		N	28	28	28	28
	Coping: Mental disengagement	Correlation Coefficient	0,327	0,228	0,153	0,355
		Sig. (2-tailed)	0,089	0,243	0,436	0,064
		N	28	28	28	28
Coping: Behavioral disengagement:	Correlation Coefficient	-0,012	0,030	-0,181	-0,029	
	Sig. (2-tailed)	0,950	0,880	0,358	0,885	
	N	28	28	28	28	
Coping: Restraint	Correlation Coefficient	0,053	0,066	-0,033	0,054	
	Sig. (2-tailed)	0,787	0,738	0,869	0,785	
	N	28	28	28	28	

Table 4.6 continued.

	Coping: Use of emotional social support.	Correlation Coefficient	.464	0,196	0,240	.428
		Sig. (2-tailed)	0,013	0,319	0,219	0,023
		N	28	28	28	28
	Coping: Substance use	Correlation Coefficient	0,100	0,239	-0,228	0,127
		Sig. (2-tailed)	0,613	0,220	0,244	0,519
		N	28	28	28	28
	Coping: Acceptance	Correlation Coefficient	-0,115	0,092	0,051	-0,021
		Sig. (2-tailed)	0,562	0,642	0,798	0,915
		N	28	28	28	28
	Coping: Suppression of competing activities	Correlation Coefficient	-0,003	-0,108	-0,014	-0,038
		Sig. (2-tailed)	0,986	0,585	0,942	0,847
		N	28	28	28	28
	Coping: Planning	Correlation Coefficient	0,022	-0,146	0,024	0,006
		Sig. (2-tailed)	0,912	0,458	0,903	0,974
		N	28	28	28	28
	Coping_Overall	Correlation Coefficient	0,253	0,169	0,109	0,275
		Sig. (2-tailed)	0,194	0,390	0,581	0,157
		N	28	28	28	28

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

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

Table 4.6 indicates that there is a moderate positive significant correlation between professional efficacy (MBI) and positive reinterpretation and growth (COPE) ($r = .374, p < 0.05$). This suggests that there is a reasonably strong relationship between the two constructs. With a positive correlation, it is suggested that high levels of professional efficacy are associated with high levels of positive reinterpretation and growth.

Furthermore, there is a moderate positive significant correlation between exhaustion (MBI) and use of emotional social support (COPE). Specifically, the results revealed that there is a strong relationship between high levels of exhaustion and high levels of the use of emotional social support ($r = .464, p < 0.05$).

Lastly, there is a moderate positive significant correlation between the MBI overall and the coping strategy of using emotional social support ($r = .428, p < 0.05$). This suggests that there is a strong relationship between high levels of burnout and an increased tendency to rely on social support.

Table 4.7

Correlation between MBI and STPI depression subscale

			STPI: State	STPI: Trait	STPI: Overall
Spearman's rho	MBI: Exhaustion	Correlation Coefficient	-0,281	-0,238	-0,287
		Sig. (2-tailed)	0,147	0,223	0,138
		N	28	28	28
	MBI: Cynicism	Correlation Coefficient	-0,274	-.449	-0,366
		Sig. (2-tailed)	0,158	0,017	0,056
		N	28	28	28
	MBI: Professional efficacy	Correlation Coefficient	.399	.443	.438
		Sig. (2-tailed)	0,035	0,018	0,020
		N	28	28	28
	MBI Overall	Correlation Coefficient	-0,177	-0,239	-0,217
		Sig. (2-tailed)	0,366	0,220	0,268
		N	28	28	28

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

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

Table 4.7 indicates that there is a moderate negative significant correlation between STPI trait depression and cynicism (MBI) ($r = -.449, p < 0.05$). Thus, the more cynical the TP conservationist is, the less likely they are to experience trait depression.

Furthermore, table 4.7 indicates that there is a moderate positive significant correlation between professional efficacy and state depression ($r = .399$, $p < 0.05$), trait depression ($r = .443$, $p < 0.05$) as well as the depression subscale overall ($r = .438$, $p < 0.05$). Thus, the higher the TP conservationist's professional efficacy is, the higher the likelihood of the experience of overall, state and trait depression.

Table 4.8*Correlation between the MBI and the PR6*

			PR6: Tenacity	PR6: Vision	PR6: Collaboration	PR6: Composure	PR6: Reasoning	PR6: Momentum	PR6: Health	PR6: Overall
Spearman's rho	MBI: Exhaustion	Correlation Coefficient	-0,160	- 0,253	0,059	-0,033	-,404	,383	-0,109	-0,175
		Sig. (2- tailed)	0,415	0,193	0,765	0,866	0,033	0,044	0,580	0,372
		N	28	28	28	28	28	28	28	28
	MBI: Cynicism	Correlation Coefficient	-0,079	-,388	0,044	-0,069	-,529	,574	-0,295	-0,369
		Sig. (2- tailed)	0,689	0,041	0,824	0,728	0,004	0,001	0,128	0,053
		N	28	28	28	28	28	28	28	28
	MBI: Professional efficacy	Correlation Coefficient	0,087	- 0,016	0,068	0,053	0,066	-0,052	-0,010	0,063
		Sig. (2- tailed)	0,661	0,934	0,731	0,789	0,740	0,792	0,959	0,751
		N	28	28	28	28	28	28	28	28
	MBI_ Overall	Correlation Coefficient	-0,107	- 0,320	0,088	-0,031	-,414	,417	-0,222	-0,245
		Sig. (2- tailed)	0,588	0,097	0,655	0,877	0,028	0,027	0,257	0,208
		N	28	28	28	28	28	28	28	28

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

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

Table 4.8 indicates that there is a moderate negative significant correlation between the experience of exhaustion (MBI) and reasoning (PR6) ($r = -.404, p < 0.05$). This suggests that there is quite a strong relationship between the two constructs. With a negative correlation, it is suggested that high levels of exhaustion are associated with low levels of the use of reasoning. Additionally, Table 4.8 indicates a moderate positive significant correlation between exhaustion (MBI) and momentum (PR6) ($r = .383, p < 0.05$). This suggests that there is quite a strong relationship between the experience of exhaustion and maintaining momentum.

Cynicism (MBI) has a moderate negative significant correlation with vision (PR6) ($r = -.388, p < 0.05$) and a strong negative significant correlation with reasoning (PR6) ($r = -.529, p < 0.01$). Thus a moderate relationship exists between cynicism and lack of vision, and a strong relationship exists between cynicism and lack of the use of reasoning. Cynicism also exhibits a strong positive significant correlation with momentum (PR6) ($r = .574, p < 0.05$).

Overall scores on the MBI exhibit a moderate negative significant correlation with reasoning (PR6) ($r = -.414, p < 0.05$) and a moderate positive significant correlation with momentum (PR6) ($r = .417, p < 0.05$). Thus high levels of burnout tend to be associated with decreased use of reasoning. A high level of burnout also tends to be associated with the use of momentum.

Table 4.9*Correlation between STPI Depression subscale and the PR6*

			PR6: Tenacity	PR6: Vision	PR6: Collaboration	PR6: Composure	PR6: Reasoning	PR6: Momentum	PR6: Health	PR6 Overall
Spearman's rho	STPI_State	Correlation Coefficient	.422*	0,180	0,121	0,102	.410*	-.513**	.436*	.502**
		Sig. (2- tailed)	0,025	0,360	0,540	0,604	0,030	0,005	0,020	0,006
		N	28	28	28	28	28	28	28	28
	STPI_Trait	Correlation Coefficient	0,318	0,266	0,135	0,143	.538**	-.451*	.468*	.610**
		Sig. (2- tailed)	0,099	0,172	0,492	0,467	0,003	0,016	0,012	0,001
		N	28	28	28	28	28	28	28	28
	STPI_Overall	Correlation Coefficient	0,368	0,227	0,143	0,109	.504**	-.502**	.451*	.565**
		Sig. (2- tailed)	0,054	0,245	0,467	0,579	0,006	0,007	0,016	0,002
		N	28	28	28	28	28	28	28	28

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

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

Table 4.9 reveals a moderate positive significant correlation between tenacity (PR6) and state depression (STPI) ($r = .422, p < 0.05$). Thus a moderate relationship was found between experiencing a current depressive mood and the use of tenacity. Furthermore, state depression (STPI) had a moderate positive significant correlation with reasoning (PR6) ($r = .410, p < 0.05$) and health (PR6), ($r = .436, p < 0.05$). This suggests a moderate relationship between the experience of state depression (STPI) and both the use of reasoning (PR6) and health (PR6) as resilience indicators.

A strong negative significant correlation was found between state depression (STPI) and momentum (PR6) ($r = -.513, p < 0.01$). This suggests that the current experience of a depressive mood is related to a decrease in momentum. State depression has an overall strong positive significant correlation with the overall scores on the PR6 resilience measure ($r = .502, p < 0.01$). Thus, a strong relationship exists between the experience of a depressive mood and being resilient.

A strong positive significant correlation exists between trait depression (STPI) and reasoning (PR6) ($r = .538, p < 0.01$). This suggests that a strong relationship exists between those experiencing depression and the use of reasoning. Furthermore, there is a moderate negative significant correlation between trait depression (STPI) and momentum (PR6) ($r = -.451, p < 0.05$). This suggests that a moderately strong relationship exists between the experience of depression and a decrease in momentum. A moderate positive significant correlation suggests that a moderately positive relationship exists between trait depression (STPI) and the perception of health (PR6) ($r = .468, p < 0.05$). Lastly, trait depression (STPI) revealed a strong positive significant correlation with the resilience measure overall (PR6) ($r = .610, p < 0.05$). This reveals that TP conservationists that experience trait depression are very likely to exhibit resilience.

The STPI depression subscale overall exhibited a strong positive significant correlation with reasoning (PR6) ($r = .504, p < 0.01$) and the PR6 resilience measure overall ($r = .565, p < 0.01$). Thus, a strong relationship exists between reported state and trait depression and the use of reasoning, as well as the capacity for resilience overall. There was also a strong negative correlation between STPI depression overall and PR6 momentum ($r = -.502, p < 0.01$). This indicates that the experience of state and trait depression is likely to be associated with a decreased level of momentum. Lastly, state and trait depression (STPI) exhibited a moderate positive significant correlation with the perception of health (PR6) ($r = .451, p < 0.05$ level). Thus a moderate relationship exists between the TP conservationists' perception of being healthy and their experience of state and trait depression.

Table 4.10

Correlation between the STPI Depression subscale and the COPE

			STPI: State	STPI: Trait	STPI Overall
Spearman's rho	Coping: Positive reinterpretation and growth	Correlation Coefficient	0,267	.451	0,369
		Sig. (2-tailed)	0,170	0,016	0,053
		N	28	28	28
	Coping: Focus on and venting of emotions	Correlation Coefficient	-.405	-.477	-.445
		Sig. (2-tailed)	0,032	0,010	0,018
		N	28	28	28
	Coping: Use of instrumental social support	Correlation Coefficient	-0,121	-0,030	-0,075
		Sig. (2-tailed)	0,540	0,880	0,705
		N	28	28	28
	Coping: Active coping	Correlation Coefficient	0,107	0,199	0,158
		Sig. (2-tailed)	0,589	0,310	0,422
		N	28	28	28
	Coping: Denial	Correlation Coefficient	-0,372	-0,316	-0,357
		Sig. (2-tailed)	0,051	0,101	0,063
		N	28	28	28
	Coping: Religious coping	Correlation Coefficient	0,176	0,256	0,228
		Sig. (2-tailed)	0,371	0,189	0,243
		N	28	28	28

Table 4.10 continued.

Coping: Humour	Correlation Coefficient	0,222	0,133	0,199
	Sig. (2-tailed)	0,256	0,498	0,309
	N	28	28	28
Coping: Mental disengagement	Correlation Coefficient	-0,236	-0,288	-0,263
	Sig. (2-tailed)	0,226	0,138	0,176
	N	28	28	28
Coping: Behavioral disengagement:	Correlation Coefficient	-0,064	-0,086	-0,064
	Sig. (2-tailed)	0,745	0,662	0,745
	N	28	28	28
Coping: Restraint	Correlation Coefficient	0,073	0,176	0,123
	Sig. (2-tailed)	0,713	0,371	0,534
	N	28	28	28
Coping: Use of emotional social support.	Correlation Coefficient	-0,213	-0,102	-0,184
	Sig. (2-tailed)	0,276	0,607	0,348
	N	28	28	28
Coping: Substance use	Correlation Coefficient	-0,369	-.459*	-.411*
	Sig. (2-tailed)	0,053	0,014	0,030
	N	28	28	28
Coping: Acceptance	Correlation Coefficient	0,074	0,189	0,134
	Sig. (2-tailed)	0,709	0,336	0,497
	N	28	28	28
Coping: Suppression of competing activities	Correlation Coefficient	0,369	.394*	.401*
	Sig. (2-tailed)	0,053	0,038	0,034
	N	28	28	28
Coping: Planning	Correlation Coefficient	0,208	0,205	0,214
	Sig. (2-tailed)	0,289	0,295	0,275
	N	28	28	28
Coping: Overall	Correlation Coefficient	-0,070	-0,021	-0,037
	Sig. (2-tailed)	0,725	0,915	0,854
	N	28	28	28

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

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

Table 4.10 shows a moderate positive significant correlation between trait depression (STPI) and positive reinterpretation and growth (COPE) ($r = .451, p < 0.05$). Thus, TP conservationists experiencing trait depression are likely to embark on positively reinterpreting things and experiencing growth from the situation. Moderate negative significant correlations exist between focus on and venting emotions (COPE) and state depression (STPI) ($r = -.405, p < 0.05$), trait depression (STPI) ($r = -.477, p < 0.05$) and the STPI depression subscale overall ($r = -.445, p < 0.05$). Thus the more a TP conservationist focuses on and vents their emotions, the less likely they are to experience state or trait depression.

Additionally, a moderate negative significant correlation exists between substance abuse (COPE) and trait depression (STPI) ($r = -.459, p < 0.05$) as well as the depression overall (STPI) score ($r = -.411, p < 0.05$). This suggests that a low score on substance abuse is likely to be associated with a high score on trait depression as well as depression overall. Suppression of competing activities (COPE) has a moderate positive significant correlation with trait depression (STPI) ($r = .394, p < 0.05$) and depression overall score (STPI) ($r = .401, p < 0.05$). This suggests that substance abuse is more likely in conservationists who experience trait depression and depression overall.

Table 4.11

Correlation between the COPE and the PR6

			PR6: Tenacity	PR6: Vision	PR6: Collaboration	PR6: Composure	PR6: Reasoning	PR6: Momentum	PR6: Health	PR6: Overall	
Spearman's rho	Coping: Positive reinterpretation and growth	Correlation Coefficient	0,295	0,069	0,046	0,067	0,241	0,035	.423	.485	
		Sig. (2-tailed)	0,127	0,727	0,816	0,735	0,216	0,862	0,025	0,009	
		N	28	28	28	28	28	28	28	28	28
	Coping: Focus on and venting of emotions	Correlation Coefficient	0,041	-0,373	0,072	0,107	-0,147	0,240	0,240	-.383	-0,200
		Sig. (2-tailed)	0,834	0,050	0,717	0,588	0,456	0,219	0,219	0,044	0,307
		N	28	28	28	28	28	28	28	28	28
	Coping: Use of instrumental social support	Correlation Coefficient	0,153	-0,204	-0,015	-0,282	0,182	0,232	0,232	-0,010	0,021
		Sig. (2-tailed)	0,438	0,298	0,940	0,146	0,354	0,234	0,234	0,961	0,916
		N	28	28	28	28	28	28	28	28	28
	Coping: Active coping	Correlation Coefficient	.376	.518	.484	0,124	.376	-0,114	0,250	.647	.647
		Sig. (2-tailed)	0,049	0,005	0,009	0,530	0,049	0,565	0,199	0,000	0,000
		N	28	28	28	28	28	28	28	28	28
	Coping: Denial	Correlation Coefficient	-0,344	-.506	-.576	-0,195	-0,331	.389	-0,189	-.517	-.517
		Sig. (2-tailed)	0,073	0,006	0,001	0,320	0,085	0,041	0,336	0,005	0,005
		N	28	28	28	28	28	28	28	28	28
	Coping: Religious coping	Correlation Coefficient	0,008	-0,100	0,029	0,080	0,260	-0,145	0,000	0,139	0,139
		Sig. (2-tailed)	0,967	0,614	0,885	0,687	0,182	0,462	0,998	0,479	0,479
		N	28	28	28	28	28	28	28	28	28
	Coping: Humour	Correlation Coefficient	0,063	0,271	0,141	0,153	-0,112	-0,129	-0,145	-0,023	-0,023
		Sig. (2-tailed)	0,750	0,163	0,475	0,438	0,572	0,514	0,463	0,908	0,908
		N	28	28	28	28	28	28	28	28	28
	Coping: Mental disengagement	Correlation Coefficient	-0,332	-.488	-.434	0,001	-0,252	0,088	-.478	-.648	-.648
		Sig. (2-tailed)	0,085	0,008	0,021	0,998	0,196	0,656	0,010	0,000	0,000
		N	28	28	28	28	28	28	28	28	28
	Coping: Behavioral disengagement:	Correlation Coefficient	-0,097	-0,316	-0,292	-0,180	-0,167	0,056	-0,108	-0,341	-0,341
		Sig. (2-tailed)	0,625	0,101	0,132	0,359	0,395	0,777	0,584	0,076	0,076
		N	28	28	28	28	28	28	28	28	28
Coping: Restraint	Correlation Coefficient	.439	-0,014	0,010	0,190	0,171	0,177	0,148	0,292	0,292	
	Sig. (2-tailed)	0,019	0,946	0,962	0,332	0,385	0,367	0,453	0,131	0,131	
	N	28	28	28	28	28	28	28	28	28	

Table 4.11 continued.

Coping: Use of emotional social support.	Correlation Coefficient	0,071	-0,167	0,016	0,037	0,032	0,077	-0,099	0,008
	Sig. (2-tailed)	0,719	0,396	0,934	0,853	0,872	0,696	0,617	0,967
	N	28	28	28	28	28	28	28	28
Coping: Substance use	Correlation Coefficient	-0,248	-0,179	-0,011	-0,050	-0,303	0,178	-0,250	-.396
	Sig. (2-tailed)	0,203	0,361	0,955	0,802	0,118	0,365	0,200	0,037
	N	28	28	28	28	28	28	28	28
Coping: Acceptance	Correlation Coefficient	0,346	.380	.488	.385	0,107	0,118	0,042	.424
	Sig. (2-tailed)	0,072	0,046	0,008	0,043	0,587	0,550	0,832	0,025
	N	28	28	28	28	28	28	28	28
Coping: Suppression of competing activities	Correlation Coefficient	0,276	0,182	0,230	0,012	0,134	-0,068	0,261	0,365
	Sig. (2-tailed)	0,155	0,355	0,240	0,951	0,497	0,732	0,180	0,056
	N	28	28	28	28	28	28	28	28
Coping: Planning	Correlation Coefficient	.517	0,318	.412	0,345	0,324	-0,246	0,194	.594
	Sig. (2-tailed)	0,005	0,099	0,029	0,072	0,093	0,206	0,321	0,001
	N	28	28	28	28	28	28	28	28
Coping: Overall	Correlation Coefficient	0,252	-0,202	0,100	0,119	0,078	0,136	-0,185	0,067
	Sig. (2-tailed)	0,197	0,302	0,613	0,545	0,694	0,491	0,346	0,735
	N	28	28	28	28	28	28	28	28

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

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

Table 4.11 presents the correlation between the COPE and the PR6, with 25 correlations of significance ($p < 0.01$; $p < 0.05$). Positive reinterpretation and growth (COPE) exhibited a moderate positive significant correlation with the PR6 overall score ($r = 0.485$; $p < 0.05$) as well as health (PR6) ($r = .423$, $p < 0.05$). Focus on and venting emotions (COPE) exhibited a moderate negative significant correlation with health (PR6) ($r = -.383$, $p < 0.05$).

Furthermore, active coping (COPE) has a moderate positive significant correlation with being tenacious (PR6) ($r = .376$, $p < 0.05$), being collaborative (PR6) ($r = .484$, $p < 0.01$) and using reasoning (PR6) ($r = .376$, $p < 0.05$). Additionally, active coping (COPE) is also strongly positively significantly correlated with vision (PR6) ($r = .518$, $p < 0.01$), as well as with resilience overall (PR6) ($r = .647$, $p < 0.01$).

The COPE's denial factor is strongly negatively correlated with having vision (PR6) ($r = -.506, p < 0.01$), collaborating (PR6) ($r = -.576, p < 0.01$) and the PR6 overall ($r = -.517, p < 0.01$). However, denial is moderately positively significantly correlated with momentum (PR6) ($r = .389, p < 0.05$). Mentally disengaging as a coping mechanism is moderately negatively significantly correlated with having vision (PR6) ($r = -.488, p < 0.01$), collaboration (PR6) ($r = -.434, p < 0.05$) and being healthy (PR6) ($r = -.478, p < 0.05$). Furthermore, mental disengagement (COPE) is also strongly negatively correlated with resilience overall (PR6) ($r = -.648, p < 0.01$).

Restraint (COPE) is moderately positively correlated with being tenacious (PR6) ($r = .439, p < 0.05$). Substance abuse (COPE) is moderately negatively significantly correlated with overall resilience (PR6) ($r = -.396, p < 0.05$). Acceptance as a coping strategy is moderately positively significantly correlated with vision (PR6) ($r = .380, p < 0.05$), collaboration (PR6) ($r = .488, p < 0.01$), composure (PR6) ($r = .517, p < 0.05$) as well as overall resilience ($r = .594, p < 0.01$). There is also a moderately strong positive significant correlation between planning (COPE) and collaboration (PR6) ($r = .412, p < 0.05$).

4.7 Regression Analyses

From the correlation matrix, it is suggested that several constructs correlate with each other. Hence, further analyses were computed to understand how these constructs impact on each other. Regression analyses were conducted to further explore the relationships between continuous dependent variables with numerous independent variables (Pallant, 2010). This was achieved by determining which independent variable(s) had the least significant effect on the dependent variable, using stepwise regression analyses (Pallant, 2010). This was done to determine the extent to which coping strategies, resilience or state and trait depression contributed most significantly to burnout (Pallant, 2010).

The following dependent and independent variables were entered into the various regression analyses conducted:

Table 4.12

Dependent and independent variables utilised for the regression analyses

Dependent variables	Independent variables
MBI Exhaustion	State and trait depression, coping mechanisms, resilience
MBI Cynicism	
MBI Professional efficacy	
MBI Overall	

Despite the correlations indicated in 4.6, no significant models were obtained for the dependent variables of MBI exhaustion, MBI professional efficacy or MBI overall. These results were likely a function of the small sample size ($n = 28$) of the study (Pallant, 2010). However, it was found that trait depression was a significant predictor of MBI cynicism. The results of this regression analysis are presented below.

4.7.1 MBI – Cynicism

In order to determine whether state and trait depression, coping mechanisms or resilience contributes most significantly to the variance in the Cynicism subscale of the MBI, a stepwise multiple regression analysis was conducted. The initial step of the analysis conducted was to include state and trait depression, coping mechanisms and resilience as independent variables. The final model yielded the following results:

Table 4.13*Model evaluation MBI - Cynicism*

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.551 ^a	.303	.277	1.05260

a. Predictors: (Constant), STPI_Trait

Table 4.13 indicates that 30.3% of the variance that occurred in MBI-Cynicism was explained by this model.

Table 4.14*Statistical significance of model evaluation results MBI – Cynicism*

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.547	1	12.547	11.325	.002 ^b
	Residual	28.807	26	1.108		
	Total	41.354	27			

a. Dependent Variable: MBI: Cynicism

b. Predictors: (Constant), STPI_Trait

Table 4.14 confirms that the final model yielded significant results. In Table 4.15 it is indicated that trait depression appeared to be the only predictor of MBI-Cynicism (beta = .002; $p < 0.05$). The results suggest that the higher trait depression, the lower the likelihood of cynicism.

Table 4.15*Evaluation of the significant independent variables MBI – Cynicism*

Coefficients^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.527	1.071		5.161	.000
	STPI_Trait	-.120	.036	-.551	-3.365	.002

a. Dependent Variable: MBI: Cynicism

4.8 Conclusion

This chapter contained the results of the quantitative data collected during phase one of this sequential mixed method design. The results were presented initially revealing descriptive statistics, a correlation matrix and regression analyses. The descriptive statistics revealed that while only three TP conservationists are exhibiting a burnout profile, all of them are currently experiencing state and trait depression. In addition, while many effective coping mechanisms are utilised by TP conservationists, only five conservationists were shown to be high in resilience overall. Results further indicated that while there is a correlation between a large number of variables across the different assessments, resilience appears to be most significant as a contributor to burnout results overall. The results of this chapter will be discussed in depth in relation to the results of Chapter 5, in Chapter 6.

Chapter 5:

Qualitative Results

5.1 Introduction

Chapter 4 involved descriptions of the quantitative analyses completed as well as the results they yielded for the data collected during phase one of the study. This chapter will focus on the qualitative analyses completed on the data collected from phase two of the study.

5.2 Qualitative results of semi-structured interviews

As was mentioned previously in 3.2, phase two of the study consisted of the use of semi-structured interviews. These interviews were recorded and transcribed. The qualitative data obtained from these transcriptions were analysed by utilising Braun and Clarke's six-phase method to thematic analysis. The flexibility of thematic analysis makes it particularly useful for this study as a mixed methods approach since thematic analysis is free from theoretical frameworks (Braun & Clarke, 2006; Terry et al., 2017). Using the data as a starting point to eventually develop themes means that an inductive approach to thematic analysis was chosen (Terry et al., 2017). Thus all meaning was derived from the data itself, and themes were developed based on what information had been extracted from the data. In terms of the focus of analysis, a combined semantic and latent approach was taken (Braun & Clarke, 2006). While some codes might be identified as surface level, others had a deeper meaning or concept that was not explicitly stated. However, given the research question at hand as well as the data itself, many of the codes were surface level (Braun & Clarke, 2006; Terry et al., 2017).

5.2.1: Phase 1: Familiarisation of data

The first phase of the thematic analysis process involves the researcher becoming familiar with the data set. In order to achieve this, the data was read and re-read by the researcher. This also included not only reading each participant's transcription in isolation, but also reading each answer in numerical order across participants (Braun & Clarke, 2006). This assisted in gaining insight into the data itself, which meant that patterns and ideas were formulated just from immersion into the data via active reading (Terry et al. 2017). Thus, the initial noting of ideas or potential patterns became the beginning and the foundation phase of the thematic analysis (Braun & Clarke, 2006).

5.2.2 Phase 2: Initial coding

While phase one included casual note making while familiarising oneself with the data, phase two involved active and systematic note making. These notes need to be meaningful toward the specific datasets to which they are being attached (Braun & Clarke, 2006). Additionally, the notes, or codes assigned to segments of the data also need to be relevant toward the research question as well as to capture the meaning of that data (Braun & Clarke, 2006). It is also possible that some segments or portions of data are rich with information and thus were present in more than one code (Braun & Clarke, 2006; Terry et al., 2017). Table 5.1 represents the codes that were derived from the data set.

Table 5.1

Phase 2 coding

	Code	Data extract
1	Negative emotions	<i>"It's just heart breaking to see that these seemingly quiet little creatures are being poached at a rate of knots and, um, the way that they are treated by the poachers in the videos that we see, um it's absolutely heart breaking in</i>

	<p>the conditions that they come in, um you know these animals have not been feeding for two weeks plus, and they're underweight and got wounds or broken bones or... and that's just really, you know, nothing deserves that, and especially not these creatures." – Participant A</p> <p>"...anger at the conditions that these animals are in and how they're kept, um anger that they've been taken out of the, their natural environment..." - Participant A</p> <p>"... um, and then there's also a lot of um, sadness and that when you lose a pangolin" – Participant B</p> <p>"... when you need to put them down and things like that. So, I mean you do go through those different emotions, um, and then, yeah." – Participant B</p> <p>"... it's obviously very draining, very taxing. Um, it, it also has an impact, I suppose, outside of that, where, um, you know I find that sometimes I need to disconnect and sort of try and replenish my energy." – Participant D</p> <p>"Um, it can get a bit difficult wondering if you actually are making the impact that you hope for, because I'm only involved in a certain ah, piece of, I guess, the, the rehabilitation process, and you know when pangolins are released then, ah, you know, I'm not specifically involved in that, so I only get to see a small part of that. So I just in some ways hope that I am making a difference and that uncertainty can also be a bit difficult..." - Participant D</p> <p>"Um, negative experiences going through the process would be once that pangolin comes through, if it's in a very</p>
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		<p>debilitated, compromised, emaciated um, state, and dies, or we have to watch it dying over the next week or ten days or whatever it is, and we can't save it, that is, that is extremely debilitating for us emotionally, for me emotionally." – Participant C</p> <p>"... I think the negative emotions would be um, debilitated; um, helpless, hopeless, um, drained. I think those would be the, the emotions on the negative side. Um, occasionally angry, um, I don't get angry that often..." - Participant C</p> <p>"... emotionally I suppose ah, it just takes the joy out of, out of life for that period of time. You know, it just um, brings me sort of down to a very um, um, sort of sad state, not depressed, I wouldn't say, but sad state. Um, until I get through it, and then manage to lift my way up again." - Participant C</p>
2	Positive emotions	<p>"...and then of course when they are released, the joy that comes with them going back to where they come from." - Participant A</p> <p>"...good emotions like specially when you get to release the pangolin at the soft release. So there's a lot of joy and that..."- Participant B</p> <p>"And, you know, the positive side, I mean that's really easy because, you know, I wanted to join this to make a difference and, you know, assist with conservation, and that in itself is, is very rewarding. Um, it can get a bit difficult wondering if you actually are making the impact that you hope for, because I'm only involved in a certain ah, piece of, I</p>

		<p><i>guess, the, the rehabilitation process, and you know when pangolins are released then, ah, you know, I'm not specifically involved in that, so I only get to see a small part of that. So I just in some ways hope that I am making a difference and that uncertainty can also be a bit difficult but positive-wise, um, it's obviously very rewarding. Um, you know, you're giving back, you can see the progress, um, you know, every day and you tend to get a bit attached as well, and you know, feel personally responsible, which, which is also great, yeah.” – Participant D</i></p> <p><i>“Ok, well, a positive experience is always when a pangolin is actually retrieved um, and we get it. It's a huge relief, um, and we're extremely grateful..” – Participant C</i></p> <p><i>“...the uplifting emotions are satisfaction, relief, sometimes absolute elation, um, and just gratitude at being able to work with these animals every day.” - Participant C</i></p>
3	Recognition of physical effect	<p><i>“So ah, with all, you know, with everything going on in my mind, about, you know, whether or not I'm making a contribution, or if it's actually impactful, and the stresses and the fatigue that go with that, I find I'm also dealing with a bit of insomnia. At least until I'm able to move my mind off those things and distract myself.” – Participant D</i></p> <p><i>“I mean I do have a stress-related autoimmune disease, so that is possibly, you know, it could be um, all these sort of emotions could, could have been a trigger for that” - Participant C</i></p>
4	Retreat into	<p><i>“...just like when I'm out with a pangolin in the bush, that</i></p>

	<p>perceived palliative space</p>	<p>is de-stressing for me, you know.” – Participant B</p> <p><i>I don't know If I necessarily cope with it the best possible way, but I, I find most of my coping mechanism is um, very much about ah, distraction and disconnection...I'd say like, you know, watching series 'til all hours of the morning...” – Participant D</i></p> <p>“Um, just small things will help me. You know, taking the dog for a walk, um, being out in nature. Being out in nature always helps me. Um, I don't find lying around in bed watching videos helpful. It doesn't really alleviate my stress but doing something completely different, and it's usually, usually involves being in nature. So perhaps taking another pangolin out walking, um, just being in nature, doing other releases with other animals. And when, when it becomes overwhelming, then I tend to focus right down on an individual animal again rather than being overwhelmed by the huge um, problem which I can't solve. You know, um, we're sort of helping to, to solve bits of it. But I like to then sort of let it bubble back down to this animal, and that pangolin, and helping them.” - Participant C</p>
5	<p>Persist in the face of adversity</p>	<p>“...strive for a hundred percent success rate. Although it might sound a bit, um far-fetched but try your absolute best to do the the best by the next one that comes in, and the next one and the next one.” – Participant A</p> <p>“I've never been a person just to sit down and just you know, let things go, it's just, you know, you got to put yourself in there and just do what needs to be done, um and that's</p>

		<p><i>always been my thing. It, you know, there's no use in stressing about things, or, or breaking down; just do what needs to be done, and get things done.</i> - Participant A</p> <p><i>"I have learnt with my work is to keep your emotions out of it..."</i> – Participant B</p> <p><i>"endurance (laughs). You have to be, ah, so strong emotionally, I'd say. Um, you have to have a lot of patience, you have to be, yeah, just very strong emotionally because there's going to be a lot to deal with, there's, it's a very full-on um, I'd say a very full-on experience, even if it's part time. You have to be so ready for, you know, anything. Because every day is going to be different and um, you, you can't dictate the pace of, of healing or even feeding, um, sometimes can, you know, take a lot of um, not just energy but a lot of time as well, so you need to have a strong endurance..."</i> – Participant D</p> <p><i>"I get more just frustrated because it, it seems to be unending..."</i> – Participant C</p> <p><i>"...emotionally I suppose ah, it just takes the joy out of, out of life for that period of time. You know, it just um, brings me sort of down to a very um, um, sort of sad state, not depressed, I wouldn't say, but sad state. Um, until I get through it, and then manage to lift my way up again."</i> - Participant C</p>
6	Tangibly making a difference	<p><i>"It's basically the starfish analogy, so you know, you might not be able to save them all but each one that you can, is worth fighting for."</i> - Participant A</p>

		<p><i>“...that we’re making a difference. Um, you know, I suppose the easiest thing to guarantee that nothing changes is to actually just do nothing. And even if this is a drop in the ocean, even though it feels like that sometimes, it is making a difference, and I think for me personally that’s just the biggest motivation. Um, obviously when you’re on the ground, so to speak, um, actually at the, at the centre and actually physically helping out, you get to see so much tangible um, progress and so much help being appreciated. Um, and that, I mean, that’s obviously its own reward, but um, absolutely, I just, like I said, I just wanted to do more and that’s why I reached out and got in touch and I’m finding that I’m, that I’m doing that, so it’s definitely, definitely worth it.” – Participant D</i></p> <p><i>“Um, it’s um, what would the alternative be? What would happen if I stopped going? I think that would be er, selfish, because I think I can make a difference. Um, and then I think of all those pangolins and it would be one less passionate person rooting for them, or fighting for them, helping them. And knowing them personally, you know, the characters and the personalities, and the nature of the species, and the fact that they’ve been here for so long, why wouldn’t I want to help forever, you know?” - Participant C</i></p>
7	Speaking to others to process	<p><i>“Ag, um normally with talking with my mom and that” - Participant B</i></p>
8	Temmincks	<p><i>“...a pangolin walker, where you’ve taken pangolins out to</i></p>

<p>pangolin conservation role</p>	<p>go and forage, um in a more natural environment; and then as well as on the medical side, um tubing them, medicating them, checking that they're ok; um waiting for them to come in once they've been taken out of the illegal trade, and doing the initial assessments on them, um yeah.” - A</p> <p>“... pangolin sting operations and everything; and then I also assist with the walking of pangolins and taking them to release sites.” – Participant B</p> <p>“So mostly, um, I walk the pangolins. So I'd say that's my main activity. I'd say I spend a few hours every now, every few days just walking them around so that they can feed, um, yeah, that's the main activity, yeah.” – Participant D</p> <p>“Ok, so I'm involved with quite a few aspects of um, the pangolin's retrieval off the, off the trade. Um, making sure that they get through to the vet, um, at times doing, collecting them from a police station, bringing them through to um, our veterinary hospital myself, um, doing statements and filling out all the, the paperwork at the police stations. Um, once they're through at the vet, I will assist with the examinations, um, and the treatment um, feeding um, making sure that they are taken out and walked, and all their weights and um, things recorded, um, and then afterwards I will be part of the team that makes the decision as to where the pangolin goes for the soft release. And then I oversee the soft release process, um, and am in touch with all the research teams on the ground that are collating the data about that released</p>
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		<p>pangolin.” – Participant C</p> <p>“Adding to that um, I do sometimes go to court to testify in mitigation of sentencing, um, and submit statements to the court to populate the dockets.” - Participant C</p>
9	Ruminating	<p>“And also just process everything” – Participant B</p> <p>“... lying in bed just thinking about things ‘til strange hours, just to work through everything is a very, is a very um, it can be quite a lengthy process sometimes, yeah.” - Participant D</p>
10	Experience of stress	<p>“I think the most stressful part is when you’re working on a sting operation waiting, I mean that anticipation – is it going to happen, is it going to go down, what the pangolin health is, um.” – Participant B</p> <p>“...life balance... It’s quite difficult to... dedicate time towards like life and work and then obviously spending a lot of time...at the centre as well... it’s also quite tricky to balance that but then I’d say that’s only just because the, the emotional impact’s quite heavy as well. Um, you know, you find yourself wanting to make a difference but then um, you know, it takes a lot, it takes a lot out of you, and I think that’s probably the biggest thing that actually impacts, impacts me.”</p> <p>– Participant D</p> <p>“it’s a challenge” – Participant D</p> <p>“it’s obviously very draining, very taxing. Um, it, it also has an impact, I suppose, outside of that, where, um, you know I find that sometimes I need to disconnect and sort of try and replenish my energy.” – Participant D</p>

	<p>“Um, it can get a bit difficult wondering if you actually are making the impact that you hope for, because I’m only involved in a certain ah, piece of, I guess, the, the rehabilitation process, and you know when pangolins are released then, ah, you know, I’m not specifically involved in that, so I only get to see a small part of that. So I just in some ways hope that I am making a difference and that uncertainty can also be a bit difficult...” - Participant D</p> <p>“... Yeah, it can get quite taxing.” – Participant D</p> <p>“All of it is stressful (laughs). Um, it’s stressful when you hear about a pangolin being on the, um, in the trade, because we get photographs from the poachers um, which, one of our team is setting up a relationship with in order to bring them in, um, to set up a sting operation to retrieve the pangolin off the trade and make arrests. But the minute you know there’s a pangolin in the trade, that the poachers have made contact, and you’re looking at the video footage of them handling and mishandling the pangolin and video footage, or photographs of the pangolin in their um, hands, um, it’s, it’s extremely stressful and um, upsetting. And sometimes those pangolins don’t get retrieved. And that is disturbing, because then we’ve lost a pangolin, and we know what’s going to happen to it.” – Participant C</p> <p>“Um, and a very positive experience is putting them out into the release process. Um, but it’s also extremely stressful, because they have to be monitored, we have to be able to interpret their behaviour, and what’s going on and um,</p>
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		<p><i>guide the people that are on the ground. And sometimes those people are, you know, on the other side of the country. So it's all done via telephone. Um, so that, that is a bit of a nerve-wracking experience until that pangolin is completely settled in its territory and it's doing well."</i> - Participant C</p>
11	Conservationist qualities	<p><i>"You need to be resilient."</i> - Participant A</p> <p><i>"Ah it's just the love and passion for wildlife and my job." – Participant B</i></p> <p><i>"endurance (laughs). You have to be, ah, so strong emotionally, I'd say. Um, you have to have a lot of patience, you have to be, yeah, just very strong emotionally because there's going to be a lot to deal with, there's, it's a very full-on um, I'd say a very full-on experience, even if it's part time. You have to be so ready for, you know, anything. Because every day is going to be different and um, you, you can't dictate the pace of, of healing or even feeding...and then definitely um, vision, I would say to, to maintain that can be a very difficult ah, very difficult um, thing to do, get right as well. Um, oh yeah, resilience as well..." – Participant D</i></p> <p><i>"...tenacity, possibly, um, perseverance, um, a degree of stubbornness and pig-headedness, because I want to get that pangolin, and I want to start, I want to change things for that species. Um, so I think it's probably perseverance and tenacity. And being able to hopefully pace myself." - Participant C</i></p>
12	Acceptance of	<p><i>"Literally just suck it up and get over, get, get on with it.</i></p>

	emotions that Temmincks pangolin conservation involves	<p><i>Can't do anything else</i>" - Participant A</p> <p><i>"I think, you know, I've learnt to deal with it..."</i> – Participant B</p> <p><i>It's a job, you're there to do a job.</i>" – Participant B</p> <p><i>"...and it takes time to be able to do that, I mean it's not easy for people just to start a job and not be able to put emotions into it."</i> – Participant B</p> <p><i>"I don't know, I think (laughs) that it's been so long, they've just kind of got part of my fabric. Ah, it sound, sounds terrible, but it's um, they're emotions that I know so well, and recognise when they come in, and um, I've got quite a good way of, I think, of, of dealing with them..."</i> - Participant C</p>
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5.2.3 Phase 3: Searching for themes

The above coding reflected in 5.2.2 flowed toward the creation of themes where these codes were grouped together under themes that adequately described the codes coherently (Terry et al., 2017). Thus, the themes developed were a core idea or concept that incorporated the codes. The themes created from the data set were distinct and unique from each other (Braun & Clarke, 2006; Terry et al., 2017). Table 5.2 includes the codes collated within five identified themes.

Table 5.2*Phase 3 themes*

THEMES	CODES
Theme 1: Emotions	<ul style="list-style-type: none"> • Positive emotions • Negative emotions
Theme 2: Stress	<ul style="list-style-type: none"> • Recognition of physical effect • Experience of stress
Theme 3: Coping	<ul style="list-style-type: none"> • Retreat into perceived palliative space • Tangibly making a difference • Speaking to others to process • Ruminating • Acceptance of emotions that Temmincks pangolin conservation involves
Theme 4: Conservationist qualities	<ul style="list-style-type: none"> • Persist in the face of adversity • Conservationist qualities
Theme 5: Temmincks pangolin conservation role	<ul style="list-style-type: none"> • Temmincks pangolin conservationist role

5.2.4 Phase 4: Reviewing the themes

During the fourth phase of thematic analysis, the themes that were identified in 5.2.3 were reviewed (Braun & Clarke, 2006). This was undertaken to ensure that the themes accurately portray the coded data, the data set, and are related to the research question (Terry et al., 2017). Each theme was confirmed as being distinct from the others as well as meaningful to the data and the coding that it represents (Braun & Clarke, 2006; Terry et al.,

2017). In reviewing the themes in relation to the research question, theme five was excluded, as it does not speak directly to the information that is needed from the qualitative analysis (Terry et al., 2017). Specifically, theme five encompassed the role that the participants play in TP conservation. However, while the participants' involvement in TP conservation was a requirement for participation in the study, this does not add insight to addressing the particular aims of this study. Thus, the themes that remain for the data set are:

- Theme one: emotions
- Theme two: stress
- Theme three: coping
- Theme four: conservationist qualities

5.2.5 Phase 5: Defining and naming of themes

In the fifth phase of thematic analysis, the themes that were created in 5.2.4 were now defined (Terry et al., 2017). This ensures clarity and cohesion within each theme. Furthermore, these definitions serve as short summaries for the themes (Braun & Clarke, 2006; Terry et al., 2017).

5.2.5.1 Theme one: Emotions. Theme one covers the emotions that are experienced by the TP conservationists. This theme thus encompasses the feelings and state-like moods that are felt in relation to TP conservationist work. The emotions felt are in two specific categories: positive and negative emotions. The experience of negative emotions was related to the debilitated state that some of the TPs are in when they arrive off the trade. Participant A articulated this in the following excerpt: *"it's absolutely heart breaking the conditions that they come in"*. Additionally, the death of a pangolin, or witnessing the treatment of pangolins by poachers evokes negative emotions. The negative emotions

associated with TP conservation include: feeling emotionally drained, anger, sadness and heartbreak. Participant C described their negative emotions as “*debilitated; um, helpless, hopeless, um, drained.*” Additionally, Participant C further suggested that being involved in TP conservation sometimes “*takes the joy out of, out of life for that period of time. You know, it just um, brings me sort of down to a very um, um, sort of sad state*”. In contrast, in terms of positive emotions, TP conservationists describe their work as rewarding when releasing TPs back into the wild, and expressed the joy that is experienced when this occurs. Other positive emotions include relief and gratitude. Specifically, Participant C experienced gratitude when receiving a TP out of the illegal wildlife trade: “*when a pangolin is actually retrieved um, and we get it. It’s a huge relief, um, and we’re extremely grateful*”.

5.2.5.2 Theme two: Stress. This theme encapsulates the traditional definition of stress, also contained in 2.3.1. Thus, stress here is depicted as a multitude of factors in one’s work environment that exceeds the person’s ability to cope, thereby endangering their well-being (Görgens-Ekermans & Brand, 2012; Mostert & Joubert, 2005). Stress is reportedly experienced when working on a sting operation and hoping to get the pangolin away from poachers safely. Participant B describes this here: “*I think the most stressful part is when you’re working on a sting operation waiting, I mean that anticipation*”.

The concept of life balance and the difficulty thereof was also mentioned, suggesting that the work can at times exceed the TP conservationists’ resources to cope, and as a result, the TP conservationists can experience stress. Even in positive experiences, such as releasing a healthy pangolin, stress is encountered as the safety of that pangolin as well as its well-being is the responsibility of a specifically assigned TP conservationist. Participant C mentioned that “*it’s also extremely stressful, because they have to be monitored, we have to be able to interpret their behaviour, and what’s going on and um, guide the people that are on the ground. And sometimes those people are, you know, on the other side of the country. So it’s all done via telephone.*”

This theme also encompasses the physiological experience of stress. Specifically, some TP conservationists described their work as taxing, or feeling fatigued. The experience of insomnia was suggested as Participant D mentioned; *“I’m also dealing with a bit of insomnia”*. Participant C shared her stress related ailment: *“I do have a stress-related autoimmune disease, so that is possibly, you know, it could be um, all these sort of emotions could, could have been a trigger for that”*.

5.2.5.3 Theme three: Coping. While theme two encapsulates the lack of coping, theme three involves coping strategies that are employed by TP conservationists. Thus, while theme two refers to the depletion of resources, theme three encapsulates how the TP conservationists manage to work within TP conservation when it is perceived to be a stressful field (refer to 2.2). Coping for the interviewed TP conservationists includes spending time in nature, which was seen as a palliative space, as well as reminding themselves that they are making a difference with the work that they are involved in. Participant C mentioned being in nature and said; *“taking the dog for a walk, um, being out in nature”* assists in coping. Participant B speaks through emotions and mentioned *“talking with my mom”* to process his feelings and emotions. Other TP conservationists ruminate on their work and the daily occurrences, such as Participant D: *“lying in bed just thinking about things ‘til strange hours, just to work through everything”*. Another coping mechanism involves accepting the emotions and occurrences that TP conservation involves, with Participant C suggesting that *“they’re emotions that I know so well”*. The strength of character involved in acknowledging emotions and accepting them leads to the final theme regarding qualities that are believed to be necessary to work in TP conservation.

5.2.5.4 Theme four: Conservationist qualities. Within this theme, the qualities that are described as essential for TP conservationists are summarised. While describing the qualities that the participants think they possess, key elements involved being patient,

emotionally strong, having a passion for pangolins as well as not losing sight of the goal of conservation. Tenacity and resilience were mentioned, as well as perseverance. Participant C suggested; *“being able to hopefully pace myself”*, as the work is continuous. Furthermore, the ability to persist in the face of adversity, and continue despite the struggles was seen as an important quality to possess in order to work in TP conservation. This was highlighted by Participant A who suggested *“there’s no use in stressing about things, or, or breaking down; just do what needs to be done, and get things done”*, as well as Participant C; *“tenacity, possibly, um, perseverance, um, a degree of stubbornness.”*

5.2.6 Phase 6: Outcome report

For the purposes of this study, the outcome report will not be reported. However, the themes will be discussed in the following chapter where the themes will be integrated with the quantitative data and analysed in order to address the aims of this study.

5.3 Conclusion

Within this chapter, the phases included and followed with thematic analysis were detailed. This process was followed in order to analyse the qualitative data. Four themes were extracted, namely: emotions, stress, coping and conservationist qualities. These themes will be discussed in more depth in relation to the quantitative results in Chapter 6.

Chapter 6

Discussion, limitations of the study, recommendations for future research and conclusion

6.1 Introduction

Chapters 4 and 5 respectively presented the results of the quantitative and qualitative analyses that were conducted. This chapter will discuss those findings in relation to the objectives of the study. Furthermore, the quantitative and qualitative data will be integrated to give a richer understanding of the data. Next, limitations of the study will be considered, recommendations for future research will be delineated, and the study will be concluded.

6.2 Quantitative results

Quantitative results were obtained from the psychological assessments conducted in the first phase of the study. The objective of this was to determine the prevalence of burnout and state and trait depression in TP conservationists. Another objective was to investigate if TP conservationists were coping, and if so, what coping mechanisms they were employing. Furthermore, the study aimed to investigate if there was a relationship between the constructs, and if so, the strength thereof. Lastly, the study wanted to see if TP conservationists displayed resilience. The results pertaining to these objectives are discussed across the next few sections.

6.2.1 Prevalence of state and trait depression

The sample consisted of individuals currently involved in TP conservation (excluding undercover specialists). When measuring the prevalence of state and trait depression amongst TP conservationists, the STPI depression subscale was utilised (refer to 3.5.2.2). The STPI depression subscale results indicate that most of the sample is currently experiencing state depression ($n = 25$) (see Figure 4.1) as well as trait depression ($n = 26$) (see Figure 4.2). This coincides with research conducted by Fraser et al (2013) who

indicated that climate change conservationists experience depression due to the stress of their work. This finding is also consistent with research that suggests that acute work-related stress contributes to feeling depressed in helping professions (Tennant, 2001; Wang et al., 2015; Papazisis et al., 2008). Human helping professions can be likened to animal helping professions since both work with vulnerable individuals, albeit from different species. It is hence posited that TP conservationists, who are also taking care of a vulnerable species, could be viewed as part of an animal helping profession. Thus the results are consistent with helping professions as TP conservationists as an animal helping profession are currently experiencing both state and trait depression.

6.2.2 Prevalence of burnout

It has been established in literature that while depression (as discussed in 6.2.1) and burnout are related, they are two distinct variables (Iacovides et al., 2003; Maslach & Leiter, 2016a; Maslach et al., 2001; Maslach & Leiter, 2008). It was established that the participants of the current study are currently experiencing state and trait depression. Iacovides et al. (2003) postulated that burnout and depression are related. In order to determine the prevalence of burnout amongst TP conservationists the MBI was utilised (refer to 3.5.2.1).

The MBI results indicated that three TP conservationists met the requirements for burnout (see Table 4.2). Thus the experience of burnout within the sample was small and it appears that most of the sample was not experiencing burnout ($n = 25$). Given that TP conservation is a highly stressful environment to work in (Mjo, 2018), the results are not aligned with current literature that suggests that burnout occurs after chronic or prolonged exposure to stress (Görgens-Ekermans & Brand, 2012; Khamisa et al., 2015; Maslach et al., 2001; Salvagioni et al., 2017; Wiese et al., 2003).

Despite the fact that only three conservationists appeared to have burnout, six TP conservationists exhibited significantly high scores on the exhaustion subscale. This,

together with the three TP conservationists currently experiencing burnout, accounts for almost a third of the sample (see Table 4.2). Exhaustion is considered essential to the experience of burnout and is one of the core dimensions of burnout (Maslach & Leiter, 2008; Wiese et al., 2003). Thus, given the significant role that exhaustion plays in burnout, it is posited that the subsequent six TP conservationists are at risk of experiencing burnout. This corroborates the postulation by Iacovides et al. (2003) who suggested that burnout is related to depression, as all TP conservationists are currently experiencing state and trait depression. This result is also in line with findings with regard to nurses (who also need to take care of those who are vulnerable), which indicated that nurses experience high levels of exhaustion (Khamisa et al, 2015). It is hence postulated that TP conservationists, who are also taking care of a vulnerable species (as established in 6.2.1) and are viewed as part of an animal helping profession, are at risk of developing burnout.

6.2.3 Prevalence of coping mechanisms

The completion of the COPE questionnaire gave an indication of whether or not the TP conservationists are coping currently, and what coping mechanisms are being relied upon the most (see Table 4.4). According to the descriptive statistics, the TP conservationists are currently coping and relying on the following coping mechanisms most strongly: positive reinterpretation and growth (n = 11), active coping (n = 12), acceptance (n = 10) and planning (n = 16) (see Table 4.4). Thus, the TP conservationists are currently accepting of their current reality and the stressors that they face in attempting to save a species from extinction. Furthermore, they are managing their stressful emotions and are actively taking steps to curtail the stress experienced. The TP conservationists exhibit the tendency to ruminate and come up with strategies to embark on to ward off stress. As the coping mechanisms mentioned here (excluding positive reinterpretation and growth) are classified as problem-focused, the TP conservationists are working toward changing the sources of stress (Baqutayan, 2015; Krohne, 2001; Lazarus, 1993; Stanislawski, 2019). These coping mechanisms are facilitative in terms of warding off stress effectively, and thus, the TP

conservationists are currently utilising effective coping mechanisms (Krohne, 2001; Lazarus, 1993).

While it has been established that three TP conservationists are currently experiencing burnout, a third of the sample ($n = 9$) is experiencing exhaustion (see Table 4.2). The use of active and problem focused coping strategies (such as active coping, planning and acceptance) does not ameliorate the experience of exhaustion (Anderson, 2000; Wiese et al., 2003). Thus, the mediating factor between experiencing burnout or merely just the exhaustion component of burnout is suggested to be the effective coping mechanisms utilised (Anderson, 2000; Wiese et al., 2003).

6.2.4 Prevalence of resilience

Sample one was also assessed using the PR6. When interpreting the scores, the components of resilience that most of the TP conservationists scored highest on are tenacity ($n = 17$), vision ($n = 15$) and composure ($n = 20$) (see Table 4.5). The high prevalence of vision coincides with the primary aim of TP conservation that has the ultimate goal of survival of the TP species (Rossouw & Rossouw, 2018). The high occurrence of tenacity illustrates the TP conservationists' ability to persevere and get back on their feet after a setback, which is an on-going necessity with the rise in TP poaching (Pietersen et al., 2014). The high frequency in the composure score is in alignment with literature that suggests the procedure to follow in assisting a TP out of the trade, which requires complete control of one's emotions (Wright & Jimerson, 2020). Specifically, dealing with criminals, in high stakes situations to rescue a TP often from horrific conditions, would require poise in order to ensure the TP is rescued and none of the conservationists are harmed in the process (Pietersen et al., 2016; Wright & Jimerson, 2020).

However, when considering the overall resilience scores, only five TP conservationists exhibit resilience (see Figure 4.25). From the results, it is evident that most of the sample (n

= 23) are in the moderate range of resilience overall. This suggests that most of the sample are not experiencing, or benefitting from possessing all the elements of resilience.

Research has indicated that the presence of resilience is indicative of combatting burnout and stress in helping professions (Grant & Kinman, 2015; O'Dowd et al., 2018). Tennant (2001) indicated that burnout has been shown to contribute to the experience of depression. It is thus understandable that almost a third of the sample of TP conservationists are experiencing exhaustion (see Table 4.2), the core component of burnout (Maslach & Leiter, 2008; Wiese et al., 2003), and that there is a high experience of both state and trait depression (n = 28) (see Figures 4.1 and 4.2 respectively).

In the next section, attention will be paid to the relationships observed between burnout, depression, coping mechanisms and resilience.

6.2.5 Relationships between burnout, depression, coping mechanisms and resilience

A correlation matrix was computed to investigate the relationships between all the variables of the four assessments utilised, namely the MBI, the STPI depression subscales, the COPE and the PR6. As the reliability of the scales overall was acceptable (see Table 3.4, Table 3.6, Table 3.8 and Table 3.10), and as the subscales of each measure contribute to the overall score, correlations with the total scores for each measure will not be discussed here. Specifically, focus will be given to the significant correlations displayed between the subscales of the measures used.

6.2.5.1 Relationship between the MBI and the STPI depression subscale

While 6.2.1 and 6.2.2 focus on the prevalence of depression and burnout respectively, this section will investigate the correlations between the measures utilised, namely the STPI depression subscale and the MBI. A moderate negative significant correlation between trait depression (STPI) and cynicism (MBI) ($r = -.449, p < 0.05$) was observed (see Table 4.7).

The MBI manual defines cynicism as distancing and detachment from work as well as feelings of indifference (Maslach, Jackson & Leiter, 2018). Trait depression (STPI) measures depressive feelings that are experienced over time (Spielberger & Reheiser, 2009). Within this study, depression is being explored as the absence of well-being (refer to 2.4.1) (Spielberger et al., 2003).

The results of the stepwise regression analysis indicated that trait depression is a significant predictor of cynicism. The results also indicated that, as levels of trait depression increase, cynicism would also increase. The results of the correlation analysis hence contradict the results obtained by the stepwise multiple regression analysis. Recent research supports the findings of the stepwise regression where depression has been found to facilitate disengagement (which is included in the description of the MBI's cynicism) (Dickson, Moberly, O'Dea & Field, 2016; Koppe & Rothermund, 2017). Additionally, Kroska, Calarge, O'Hara, Deumic and Dindo (2017) further support the regression analysis findings in their study with medical students where cynicism and depression were present in their sample. It has been established that TP conservationists are also a helping profession (refer to 6.2.1) and as such, these findings resonate well with the regression analysis findings. Thus, with regard to TP conservationists, the experience of depression will lead to detaching oneself from work. Further research would be beneficial to better understand the contradiction found here between the correlations versus the regression analysis and current research.

In addition to the significant inverse correlation found between trait depression (STPI) and cynicism (MBI), it was discovered that professional efficacy (MBI) has a moderate positive significant correlation with state depression (STPI) ($r = .399, p < 0.05$) and trait depression (STPI) ($r = .443, p < 0.05$). The MBI manual defines professional efficacy as feelings of satisfaction at work, and with past and present accomplishments (Maslach et al., 2018). Thus, the results are suggesting that the feeling of achievement and accomplishment

are related to the experience of depression. This suggests that TP conservationists maintain a sense of satisfaction with saving pangolins, despite experiencing trait depression.

However, recent research suggests that a high score on professional efficacy (MBI) is indicative of low scores on depression measures in specialist nurses (Bakir, Ozer, Ozcan, Cetin, Fedai, 2010; De Vasconcelos, De Martino & De Souza França, 2018). Therefore, TP conservationists may be unique in their propensity to maintain their feelings of success as they work tirelessly to save TPs from extinction, despite their experience of trait depression.

6.2.5.2 Relationship between the MBI and the COPE

A moderate positive significant correlation between professional efficacy (MBI) and positive reinterpretation and growth (COPE) ($r = .374, p < 0.05$) was found (see Table 4.6). As stated in 6.2.5.1, professional efficacy (MBI) is defined as feelings of satisfaction at work, and with past and present accomplishments (Maslach et al., 2018). Positive reinterpretation and growth (COPE) is defined as managing distressful emotions (Carver et al., 1989; Litman, 2006). If distressful emotions are reappraised appropriately, this coping mechanism will lead to an active coping strategy (Carver et al., 1989; Litman, 2006). Nixon (1996) as well as Basson and Rothmann (2012) found that frequent use of positive reinterpretation and growth (COPE) was associated with high levels of professional efficacy (MBI) within helping professions such as TP conservation (refer to 6.2.1). Additionally, Viljoen (2012) found a moderate positive correlation between positive reinterpretation and growth (COPE) and professional efficacy (MBI) when studying engineers. It hence appears that when TP conservationists manage their emotions, they experience greater satisfaction in conserving TPs.

Furthermore, there is a moderate positive correlation between exhaustion (MBI) and use of emotional social support (COPE) ($r = .464, p < 0.05$) (see Table 4.6). Thus, high levels of exhaustion correlate with high levels of the use of emotional social support. In addition, the correlation suggests that while many coping mechanisms are available to the TP

conservationists when they become exhausted, it may be easier to rely on the assistance of others than trying to cope in isolation. Research has indicated that the availability and utilisation of social support does mediate the experience of exhaustion (Kim, Lee & Min Lee, 2017; Sochos & Bowers, 2012). It is hence important for TP conservationists to receive social support, not only to prevent the occurrence of burnout, but also to make them more efficient at what they are doing.

6.2.5.3 Relationship between the MBI and the PR6

In addition to the COPE, the MBI was correlated with the PR6. The correlation matrix indicated a moderate negative significant correlation between the experience of exhaustion (MBI) and reasoning (PR6) ($r = -.404, p < 0.05$) (see Table 4.8). Thus, a high level of exhaustion is indicative of a lower usage of reasoning when experiencing a stressful situation. According to the multidimensional theory of burnout, exhaustion includes feeling as if one's resources are depleted (Maslach & Leiter, 2008; Wiese et al., 2003) (refer to 2.3.2.1). Reasoning is defined as seeing challenges as opportunities, being resourceful and thinking creatively during a stressful situation (Rossouw & Rossouw, 2018).

As exhaustion includes feeling depleted, it thus makes sense that a lack of reasoning and a decreased cognitive ability would ensue. Grossi, Perski, Osika and Savic (2015) showed that cognitive impairments in memory and executive functioning exist when experiencing burnout and particularly exhaustion. Furthermore, exhaustion has also been shown to impact on cognitive difficulties in general as well as specifically with regard to paying attention (Horvat & Tement, 2020). Thus, the results of this correlation correspond with current literature in terms of exhaustion (MBI) and reasoning (PR6). It hence appears that TP conservationists' reasoning might be affected by their levels of exhaustion. It is therefore recommended that more awareness should be raised with regards to what these conservationist do, to ensure they receive all the support they need. Awareness of TP

conservation will also indicate how few conservationists there are and could be used as a platform to encourage others to join in and help.

Exhaustion (MBI) also exhibited a moderate positive significant correlation with momentum (PR6) ($r = .383, p < 0.05$) (see Table 4.8). Momentum is defined as focusing on future movement and being open to new challenges (Rossouw & Rossouw, 2018). The correlation suggests that even while feeling exhausted and emotionally depleted, TP conservationists maintain a forward-looking approach (Rossouw & Rossouw, 2018). Thus despite feeling fatigued, the ultimate goal of pangolin conservation and saving a species assists the TP conservationists to keep moving forward and continuing with their highly important work. The relationship is validated in the desperate need for intervention to save the TPs from extinction (Pietersen et al., 2014; Regchand, 2019; Wright & Jimerson, 2020). Furthermore, despite being exhausted, TP conservationists are known for their dedication and persistence in the pursuit of securing the health and freedom for each patient that is saved from the illegal wildlife trade (Bega, 2020; Mjo, 2018; Pietersen et al., 2014; Wright & Jimerson, 2020). Therefore, despite exhibiting exhaustion, TP conservationists display resilience in some form, for the benefit of their pangolin patients.

Similarly, cynicism (MBI) exhibited a strong positive significant correlation with momentum (PR6) ($r = .574, p < 0.05$) (see Table 4.8). Thus, in addition to the significant correlation between exhaustion and momentum, cynicism exhibits a similar correlation. This correlation suggests that the more emotionally detached the TP conservationist is with the conserving of TP pangolins, the more likely they are to persist and endure in the pursuit of the ultimate goal of pangolin conservation. Both cynicism and exhaustion are critical indicators of burnout (Maslach & Leiter, 2008; Wiese et al., 2003). It appears that TP conservationists are unique in this sense because research found that while burnout involves the absence of well-being, resilience facilitates well-being (Gloria & Steinhardt, 2016; Mayordomo et al., 2016; Trompetter et al., 2017). Thus, it is postulated that within TP

conservation, momentum facilitates the sentiment of resilience as the correlation indicates that notwithstanding the experience of elements of burnout, TP conservationists persist in their conservation efforts.

Additionally, a moderate inverse significant relationship was also seen between cynicism (MBI) and vision (PR6) ($r = -.388, p < 0.05$) (see Table 4.8). Vision is defined as being goal-directed, having clarity within goals set, as well as having a sense of self-worth (Rossouw & Rossouw, 2018). As above, cynicism is defined as distancing and detachment from work (Maslach, Jackson & Leiter, 2018). Thus the correlation indicates that the more engaged with the health of TP patients the TP conservationist is, the higher their goal-focused demeanour will be. Goal orientation has been found to relate to a decrease in burnout and explained up to 14% of the variance in burnout amongst emergency nurses (Adriaenssens, De Gucht & Maes, 2015). These findings support the correlation above, and suggest that the ultimate goal of saving TPs from extinction is likely to decrease the experience of burnout due to the decrease in cynicism felt.

Furthermore, a strong inverse significant relationship exists between cynicism (MBI) and reasoning (PR6) ($r = -.529, p < 0.01$) (see table 4.8). As was indicated in 6.2.5.3, cynicism is related to burnout while reasoning is a cognitive component of resilience. Within anaesthesia practitioners, burnout was associated with a decrease in cognitive performance (Orena, Caldiroli & Cortellazzi, 2013). As indicated above, cynicism is one of two significant factors contributing to burnout (Maslach & Leiter, 2008; Wiese et al., 2003). Thus, these results are indicative that a high level of cynicism contributes to a decrease in cognitive performance. These results echo the correlation between exhaustion (MBI) and reasoning (PR6). The decrease in cognitive functioning suggests that the more burnt out the TP conservationists are, the less likely they are to be thinking and cognitively processing. These cognitive deficiencies may have an impact on their propensity to focus and perform at their optimum in their conservationist role. Therefore, it would be beneficial to decrease burnout by building a

larger TP conservation team, thus distributing the exposure to prolonged stress. This would hopefully result in less burnout and thus less compromised cognitive abilities.

6.2.5.4 Relationship between STPI depression subscale and the PR6

Following from the MBI's correlations with the STPI depression subscale, the COPE and PR6, the STPI depression subscale's correlations will now be explored. Both state depression (STPI) and trait depression (STPI) displayed significant correlations with reasoning (PR6), momentum (PR6) and health (PR6).

When considering the correlations specifically, momentum (PR6) displayed a strong inverse significant correlation with state depression (STPI) ($r = -.513, p < 0.01$), and a strong positive significant correlation with trait depression (STPI) ($r = .538, p < 0.01$) (see Table 4.9). Based on the premise that trait depression infers state depression, these findings are contradictory. Specifically, Spielberger & Reheiser (2009) indicated that a higher trait depression score is indicative of a higher state depression score. Thus, the higher the experience of a depressive mood over time (trait depression), the higher the likelihood that TP conservationists will currently experience state depression. The finding related to the inverse correlation between momentum and state depression makes sense, since MacLeod and Salaminiou (2010) discovered that, as the experience of depression increases, the propensity for anticipating future events decreases. Based on these, it is posited that most of the TP conservationists are unlikely to look forward to future events, opportunities and challenges as most of the participants are all experiencing high levels of state and trait depression. In light of these findings, and since the premise of the STPI is that there is a positive correlation between state and trait depression, one would assume that the correlation between trait depression and momentum would also be positive. Since it was not the case in the current situation, more research is warranted on the issue.

Furthermore, reasoning (PR6) was strongly positively correlated with trait depression (STPI) ($r = .538, p < 0.01$) as well as positively correlated with state depression (STPI) ($r = .410, p < 0.05$) (see Table 4.9). These findings contradict previous correlational results that indicated that reasoning is significantly positively correlated with exhaustion (MBI) and cynicism (MBI) (refer to 6.2.5.3 above). This contradiction is further echoed in the literature that states that cognitive functioning decreases when depression is experienced (Lam, Kennedy, McIntyre & Khullar, 2014; Perini, Ramusino, Sinforiani, Mernini, Petrachi & Costa, 2019). Moreover, negative emotions such as depression have been shown to deplete the occurrence of resilience, of which reasoning is a component (Gloria & Steinhardt, 2016; Trompeter et al., 2017). Thus it seems that TP conservationists, whilst experiencing depression, still hold the propensity for reasoning. This correlation does not make sense given the correlations with the MBI as well as the understanding of depression including a lack of well-being and compromising TP conservationists' physiological and psychological experiences (Spielberger, 2006; Spielberger et al., 2003). Specifically, Krohne et al. (2002) found that experiencing a lack of well-being and depression includes somatic symptoms such as insomnia as well as the lack of the ability to concentrate. Thus, it is suggested that further research explores the relationship between state and trait depression and reasoning abilities.

Health (PR6) displayed a moderate positive significant correlation with state depression (STPI) ($r = .436, p < 0.05$) as well as a moderate positive significant correlation with trait depression (STPI) ($r = .468, p < 0.05$) (see Table 4.9). The PR6 manual defines health as the foundation of resilience and includes getting enough exercise, sleep and nutrition (see Table 3.9). A significant relationship has been found to exist between depression and a poor diet, impaired sleep and reduced physical activity (Lopresti, Hood, Drummond, 2013). Thus, this correlation does not make sense. No correlation was exhibited between health and any subscale of the MBI (refer to 6.2.5.3). Additionally, the latter correlated with state and trait depression (refer to 6.2.5.1). In addition, it was found that the participants were at risk of

burnout and display some level of resilience (refer to 6.2.5.3). Thus, this finding is contradictory not only to previous findings of the study but also to Lopresti et al.'s (2013) article that summarised research stating that there is an inverse relationship between health and depression. More research is needed to explain why this correlation was observed within this research with TP conservationists.

The last correlation between the PR6 and state depression suggests that tenacity (PR6) was positively significantly correlated with state depression (STPI) ($r = .422, p < 0.05$) (see Table 4.9). The PR6 manual describes tenacity as the ability to persevere through strife and the ability to bounce back after a setback (Rossouw & Rossouw, 2018). The results hence indicate that while TP conservationists experience an increase in depression at the moment, they are still persevering through arduous circumstances. Conversely, current research suggests that perseverance is related to decreased depressive symptoms (van Doren, Tharp, Johnson, Staudenmaier, Anderson, Freeman, 2019). Thus the findings of this research contradict current literature on perseverance and depression. This comes as no surprise however, because thus far the findings discussed indicate that the TP conservationists tend to display resilience even when experiencing exhaustion and cynicism.

6.2.5.5 Relationship between the STPI depression subscale and the COPE

In terms of the STPI and COPE correlation matrix, focus on and venting emotions (COPE) indicated a moderate inverse significant correlation with state depression (STPI) ($r = -.405, p < 0.05$), and a moderate inverse significant correlation with trait depression (STPI) ($r = -.477, p < 0.05$) (see Table 4.10). These correlations suggest that TP conservationists expressing emotions are less likely to experience state or trait depression. Recent research corroborates these findings and indicates that focus on, and venting of emotions (COPE), will decrease the experience of depressive symptoms and a depressive mood (Klostermann, Chen, Kelly, Schroeder, Braitman & Mignone, 2011). Thus, the more that TP

conservationists share their emotions amongst each other, the less likely they are to experience depression.

Additionally, positive reinterpretation and growth (COPE) revealed a moderate positive significant correlation with trait depression (STPI) ($r = .451, p < 0.05$) (see Table 4.10). Positive reinterpretation and growth (COPE) is defined as managing distressful emotions (Carver et al., 1989; Litman, 2006). If distressful emotions are reappraised appropriately, it will lead to an active coping strategy (Carver et al., 1989; Litman, 2006). Managing stressful situations that involve distressful emotions, such as poached and ill TPs, could understandably lead to experiencing trait depression (Mjo, 2018). Other literature on the issue, however, contradicts the current findings and Mjo's assertion. Orzechowska, Zajackowska, Talarowska and Galecki (2013), for example, noted that individuals experiencing depression are more likely to use coping mechanisms that involve denial and avoidance and circumvent finding positive aspects of the stressor. Thus, it is assumed that TP conservationists are experiencing depression despite reinterpreting situations and negative emotions. As they are a finite team, they reinterpret a situation and actively cope with the stressors at hand, such as severely ill TPs from the illegal wildlife trade, as well as sting operations and long working hours. Consequently, while seeing the positive within a situation and successfully coping, they still experience a depressive mood and depression overall.

Trait depression (STPI) also had a moderately strong significant positive correlation with suppression of competing activities (COPE) ($r = .394, p < 0.05$) (see Table 4.10). Suppression of competing activities (COPE) is defined as placing other projects aside in order to focus entirely on the stressor (Carver et al., 1989; Litman, 2006). The current results appear to make sense within the context of TP conservation. Specifically, as all focus is on the stressful experience of TP conservation and the illegal wildlife trade, there are no distractions to ease the experience of continuing stress and sadness with ill pangolins or

failed sting operations. Recent research contradicts the current finding of the study. Several researchers noted that multi-tasking and thus not focusing on one activity at a time is associated with depression (Becker, Alzahabi, Hopwood, 2012; Kurz, Fabian, Pelle, Lewis, Lublin, Miller, Sumowski, 2018). It is however argued that while the TP conservationists are focusing on one task at a time (saving a species from extinction), the task at hand might be the source of the depression. TP conservation has been shown to be highly stressful (Mjo, 2018). This highly stressful environment detracts from their well-being (Mjo, 2018). Furthermore, research has consistently shown that acute work related stress results in burnout and contributes to the likelihood of depression (Pienaar & Rothmann, 2006; Salvagioni, et al, 2017; Tennant, 2001). Thus, it is plausible that in this instance the TP conservationists are being exposed to highly stressful work that in turn is adding to their feelings of depression.

Lastly, a moderate strong inverse significant correlation was observed between substance abuse (COPE) and trait depression (STPI) ($r = -.459, p < 0.05$) (see Table 4.10). This suggests that a low score on substance abuse is likely to be associated with a high score on trait depression. Thus, the less substances are abused as a means to cope, the higher the chances of experiencing trait depression (STPI). These results contradict current literature. Research studies revealed a positive correlation between depression and substance abuse (Grattan, Sullivan, Saunders, Campbell, Von Korff, 2012; Mochrie, Whited, Cellucci, Freeman, Corson, 2018; Ortíz-Gómez, López-Canul, Arankowsky-Sandoval, 2014). These statistics could be suggesting that the regular abuse of substances blurs the feeling of depression, and thus the participants would not realise how much trait depression they experience. In this instance, as the sample is experiencing trait depression and does not partake in substance abuse, they are inherently aware of their feelings and experiences. More research is needed in order to explore this correlation fully.

6.2.5.6 Relationship between the COPE and the PR6

Tenacity (PR6) demonstrated a moderate positive significant correlation with active coping (COPE) ($r = .376, p < 0.05$), and restraint (COPE) ($r = .439, p < 0.05$), as well as a strong positive significant correlation with planning (COPE) ($r = .517, p < 0.05$) (see table 4.11). This is corroborated by Hurley's (2018) finding that there is a positive correlation between living through difficulties, being tenacious, and utilising what Hurley (2018) summarised as problem-focused coping. Hurley (2018) and Litman (2006) defined problem-focused coping to include the following coping mechanisms on the COPE: active coping, planning and restraint. Thus it appears that TP conservationists are able to persevere through stressful situations by utilising problem-focused coping mechanisms. These stressful situations furthermore enable TP conservationists to be tenacious (PR6) - an element that aids in being resilient (PR6).

Vision (PR6) showed a strong positive significant correlation with active coping (COPE) ($r = .518, p < 0.01$) and a moderate positive significant correlation with acceptance (COPE) ($r = .380, p < 0.05$) (see Table 4.11). As mentioned earlier, vision is defined as being goal-directed, having clarity within goals set, as well as having a sense of self-worth (Rossouw & Rossouw, 2018). According to Hurley's (2018) research, having vision and focusing on a goal is positively correlated with problem-focused coping. As was mentioned previously, problem-focused coping includes active coping mechanisms (Hurley, 2018; Litman, 2016). While this research supports the correlation between vision (PR6) and active coping (COPE), Hurley's (2018) research indicated an inverse correlation with emotion-focused coping, which includes acceptance as a coping mechanism. Thus, the correlation in this research between vision (PR6) and acceptance (COPE) is not aligned to current literature. In terms of TP conservation, having a sense of worth and being goal directed enhances the propensity for TP conservationists to actively cope within their stressful conservation realm. However, in contrast to current literature, it seems that TP conservationists work in a unique realm where being goal directed suggests an inclination to

accept the current status quo as a way to cope. This makes sense within this unique conservation environment, as the TP conservationists need to actively accept the current reality that pangolins are facing extinction in order to stand any chance of reaching their goals, which ultimately include ensuring this species of pangolin does not become extinct.

Vision (PR6) also displayed a strong inverse significant correlation with denial (COPE) ($r = -.506, p < 0.01$) (see Table 4.11). Hurley (2018) posited that vision is negatively correlated with avoidance coping. Avoidance coping includes mental disengagement which is deemed a form of denial (Hurley, 2018; Litman, 2016). Therefore, Hurley's (2018) research provides further support for the findings in this research. Denial as a coping mechanism is the opposite of acceptance as a coping mechanism (Litman, 2006). Carver defines denial as refusing to believe that a problem is real, whereas acceptance includes accepting the problem (Litman, 2006). Therefore this correlation gives further support for the correlation depicted above between vision (PR6) and acceptance (COPE).

Vision (PR6) additionally showed a moderate inverse significant correlation with mental disengagement (COPE) ($r = -.488, p < 0.01$) (see Table 4.11). Hurley (2018) stated that vision is positively correlated with emotion-based coping, which includes denial. Mental disengagement is defined as distracting oneself from thinking about the problem being faced (Litman, 2006). The current research is in disagreement with this finding. However, the negative correlation between vision and mental disengagement makes sense in the TP conservationist research. Additionally, this correlation makes sense in light of the two formerly reported correlations between vision and denial as well as vision and acceptance.

Collaboration (PR6) displayed a moderate positive significant correlation with active coping (COPE) ($r = .484, p < 0.01$), a moderate inverse significant correlation with planning (COPE) ($r = -.434, p < 0.05$) and a moderate positive significant correlation with acceptance (COPE) ($r = .488, p < 0.01$) (refer to table 4.11). According to the PR6 manual, collaboration

is defined as the ability to connect, ask for help and relate to others (Rossouw & Rossouw, 2018). These findings thus indicate that the TP conservationists are willing to collaborate, support other TP conservationists and request assistance from each other where needed.

Furthermore, a strong inverse significant correlation was found between collaboration (PR6) and denial (COPE) ($r = -.576, p < 0.01$) as well as a moderate inverse significant correlation between collaboration (PR6) and mental disengagement (COPE) ($r = -.434, p < 0.05$) (see table 4.11). As mentioned above, denial is defined as refusing to believe that a problem is real (Litman, 2006). Additionally, mental disengagement was defined previously as distracting oneself from thinking about the problem that has to be faced (Litman, 2006). These inverse correlations make sense as TP conservationists would not be able to ask for assistance or relate to others with regard to their work environment and stressors experienced if they are denying the stressors and trying to distract themselves as a way to cope with stress experienced. Thus it is assumed that TP conservationists cannot effectively connect with others when they select denial and mental disengagement as coping mechanisms.

Composure (PR6) displayed a moderate significant correlation with acceptance (COPE) ($r = .385, p < 0.05$) (see Table 4.11). Composure refers to regulating emotions and managing negative environments (Rossouw & Rossouw, 2018) (see Table 3.9). It is argued that the stressful nature of TP conservation creates a negative environment in which TP conservationists must function. Negative environments have been linked to the utilisation of several sources of coping mechanisms, one of which is acceptance (Shukla, Kalra & Pakhare, 2012). Thus it is suggested that TP conservationists are able to accept the stressful environment in which they work. This result is supported by previously mentioned findings where TP conservationists displayed resilience despite being exhausted.

Reasoning (PR6) showed a moderate positive significant correlation with active coping (COPE) ($r = .376$, $p < 0.05$) (see Table 4.11). Reasoning is defined as seeing challenges as opportunities and thinking critically about the stressful situation (Rossouw & Rossouw, 2018). This ability to rework a stressful situation has correlated with problem-focused coping, which includes active coping as a coping mechanism (Hurley, 2018). Thus reasoning (PR6) corresponds to actively coping (COPE) with stressors experienced by TP conservationists. As reasoning involves seeing challenges as opportunities and thinking critically about the stressful situation, it resonates with active coping where direct action is taken to cope (Rossouw & Rossouw, 2018). Thus TP conservationists that possess this component of resilience may critically analyse a situation, and enjoy the challenge of solving the stressor, prior to actively managing the stressor encountered.

Momentum (PR6) showed a moderate positive significant correlation with denial (COPE) ($r = .389$, $p < 0.05$) (see Table 4.11). Momentum is defined as being forward-looking and open to new challenges (Rossouw & Rossouw, 2018). In Hurley's (2018) research, the propensity to regroup and face new challenges has shown a positive correlation with emotion-focused coping, which includes denial as a coping mechanism (Hurley, 2018). Thus, the results contained in this study are aligned to current literature. Accordingly, denying the current stressors enables the TP conservationists to continue with their conservation work.

Health (PR6) showed a moderate inverse significant correlation with focus and venting of emotions (COPE) ($r = -.383$, $p < 0.05$) (see Table 4.11). This finding contradicts Rossouw and Rossouw's (2018) finding that reasonably good health is considered an essential building block for resilience to flourish (Rossouw & Rossouw, 2018). Spielberger's research also found that the venting of emotions promoted health (Spielberger & Reheiser, 2009). Again, this is in contradiction with a previous correlation found between state and trait depression (STPI) and focus on and venting of emotions (COPE) (refer to 6.2.5.5). Both

state and trait depression exhibited a moderate inverse significant correlation with focus on and venting of emotions, which indicated that expressing emotions decreased their propensity to experience depression. Adding to this, health (PR6) demonstrated a moderate positive significant correlation with state depression (STPI) and a moderate positive significant correlation with trait depression (STPI). This finding was suggested to be confusing previously, as was this finding between health (PR6) and focus and venting of emotions (COPE). Therefore further research is needed within the TP conservationist context to determine why this result was obtained.

In addition, health (PR6) showed a moderate positive significant correlation with positive reinterpretation and growth (COPE) ($r = .423, p < 0.05$) (see Table 4.11). This finding is in agreement with Naseem and Khalid's research (2010) that suggested that positive thinking causes health benefits. Thus, as TP conservationists reappraise stressors, their health is likely to improve (Carver et al., 1989; Litman, 2006). It is hence assumed that TP conservationists' health is reasonably good when they are engaging in reinterpreting negative situations in order to cope.

Furthermore, health (PR6) showed a moderate inverse significant correlation with mental disengagement ($r = -.478, p < 0.05$) (COPE) (see Table 4.11). As suggested above, mental disengagement involves distracting oneself from thinking about the problem being faced (Litman, 2006). This inverse correlation with mental disengagement suggests that being aware of the stressors being faced is related to being healthy. Recent research suggests that disengaging as a way of coping is related to lower health scores (Boyras, Waits, Felix & Wynes, 2015; Chang, Daly, Hancock, Bidewell, Johnson, Lambert & Lambert, 2006). Thus the results within this study do not align with current literature. Therefore, the assumption about TP conservationists here is that actively facing their problems and not trying to distract themselves from the stressors of TP conservation is associated with better health.

Based on the above correlations between the COPE and the PR6, TP conservationists appear to maintain their goals of protecting TPs from wildlife poachers, and to effectively care for the patients through medical intervention as well as safe release protocols and post release monitoring. Despite the stress experienced, a few facilitative coping mechanisms, such as active coping, planning and acceptance are utilised. These coping mechanisms infer their goal clarity, and tenacious resilience despite the stressful working conditions, depression and burnout experienced.

6.3 Qualitative results

The qualitative analyses conducted during the second phase of the study aimed to understand the subjective experiences of TP conservationists. The main themes noted were: emotions, stress, coping and conservationist qualities. These themes will be discussed below. The themes will be discussed within the context of the quantitative results, as this study was a sequential mixed method design (refer to 3.3). Thus, these qualitative results serve to add richness and depth to the findings gathered in the quantitative phase of the research (see Figure 3.1).

6.3.1 Emotions

This theme was prominent within the interviews and encompasses feelings and state-like moods that are felt in relation to the TP conservation work that the participants are involved in (refer to 5.2.5.1). During the interviews, both positive and negative emotions were articulated. Positive emotions were linked to the work being rewarding and the joy that comes with releasing TPs back into the wild. Gratitude was suggested as a positive emotion experienced by participant C: *“when a pangolin is actually retrieved um, and we get it. It’s a huge relief, um, and we’re extremely grateful”*. These positive emotions suggested the presence of well-being, as well-being includes positive feelings (Keyes, 2002) (refer to 2.7). Positive emotions and resilience have shown to buffer against negative emotions (Gloria & Steinhardt, 2016; Grant, Guille & Sen, 2013; Keyes et al, 2010; Trompetter et al., 2017).

This provides additional evidence for the presence of resilience within the TP conservationists. Even though the experience of depression is prolific in the participants, they still push forward to positively reinterpret current experiences (refer to 6.2.5.4). This further supports the presence of resilience within the participants and the utilisation of effective coping mechanisms.

In contrast, the negative emotions experienced included feeling emotionally drained, anger, sadness and heartbreak. Participant A suggested the experience of anger: “...*anger at the conditions that these animals are in and how they’re kept, um anger that they’ve been taken out of the, their natural environment...*”. The experience of negative emotions such as anger is a critical indicator of the absence of well-being (Spielberger & Reheiser, 2009). Furthermore, anger is a major contributor to the experience of depression (Spielberger & Reheiser, 2009). The experience of anger gives further insight to the experience of depression as anger is positively correlated with the experience of depression (Spielberger & Reheiser, 2009).

Participant C described their negative emotions as “*debilitated; um, helpless, hopeless, um, drained.*” Additionally, Participant C further suggested that being involved in TP conservation sometimes “*takes the joy out of, out of life for that period of time. You know, it just um, brings me sort of down to a very um, um, sort of sad state*”. Participant C’s experience of negative emotions such as hopelessness, lack of joy and a sad state were reflected in the high prevalence of state and trait depression within all the TP conservationists (refer to 6.2.2). Additionally, the mention of feeling drained mirrors the results of the MBI exhaustion subscale where a third of the sample was identified as feeling exhausted, which is one of the core dimensions of burnout (refer to 6.2.2). These results give further clarity on the samples’ experience of depression, and the subsequent experience of burnout (Iacovides et al., 2003). Furthermore, given the experience of feeling

depleted, this is further evidence for the risk of participants experiencing burnout (Maslach & Leiter, 2008; Wiese et al., 2003).

6.3.2 Stress

Stress was the second theme identified (refer to 5.2.5.2) and was reportedly experienced when working on sting operations: *“I think the most stressful part is when you’re working on a sting operation waiting”* – Participant B. In addition, releasing a pangolin also encompassed stress as the responsibility of the survival of that animal and the species at large rested with the TP conservationist. This was articulated by Participant C: *“Um, and a very positive experience is putting them out into the release process. Um, but it’s also extremely stressful, because they have to be monitored, we have to be able to interpret their behaviour...”*. Stress was experienced when battling a work/life balance: *“...life balance... It’s quite difficult to... dedicate time towards like life and work and then obviously spending a lot of time...at the centre as well... it’s also quite tricky to balance that...”* – Participant D. This would also suggest that work could at times be exceeding their resources to cope, thus leading to stress (Krohne, 2001; Rauvola et al., 2019; Wiese et al., 2003).

Physiological experiences of stress were also mentioned, in particular insomnia by participant D: *“I’m also dealing with a bit of insomnia.”* Participant C mentioned the struggle with a stress-related autoimmune disease: *“I do have a stress-related autoimmune disease, so that is possibly, you know, it could be um, all these sort of emotions could, could have been a trigger for that.”* This coincides with literature on physiological symptoms of burnout in 2.3.5.2. While stress was not directly assessed, it is an antecedent to burnout, and is a threat to well-being (refer to 2.3.1). Thus, while only three participants qualified as suffering from burnout, a third of the sample reported suffering from exhaustion, and are at risk of experiencing burnout. Furthermore, good health is a foundation on which resilience is built (Rossouw & Rossouw, 2018). With the experience of ill health and lack of sleep, further

corroboration for the experience of depression is found (refer to 6.2.5.4), placing the TP conservationists' well-being under threat.

6.3.3 Coping

This theme encapsulates the opposite to stress and burnout in that coping refers to working within TP conservation despite the stressful experiences (Krohne, 2001; Rauvola et al., 2019; Wiese et al., 2003). Coping mechanisms suggested by the TP conservationists included being in nature as well as reminding oneself that the work they are involved in is making a difference. Specifically, participant C said *“being out in nature always helps me...”*, while Participant D mentioned remembering, *“...that we’re making a difference.”* helps him to cope. This gives further insight to the correlational findings where TP conservationists focusing on their primary goals decreases the experience of cynicism, a component of burnout, thus enhancing well-being (refer to 6.2.5.2).

Participant B mentioned, *“talking with my mom”*, and thus speaking through emotions with a family member assists in processing them. This is encapsulated within the relationship between venting emotions and an increase in health (refer to 6.2.5.6).

While one participant suggested that they think through their emotions to work through how they feel, another suggested accepting the emotions experienced, as they are so familiar. In particular, *“lying in bed just thinking about things ‘til strange hours, just to work through everything”* – Participant D. Additionally, Participant C spoke of accepting the emotions: *“it’s been so long, they’ve just kind of got part of my fabric. Ah, it sound, sounds terrible, but it’s um, they’re emotions that I know so well.”* The correlation matrix revealed that TP conservationists accept the problems to be faced, which is associated with collaborating with the rest of the conservation team as well as enhancing goal focus (refer to 6.2.5.6).

Moreover, these experiences and methods of coping are further substantiated in Hurley's research (2018). In particular, the use of problem focused coping mechanisms, such as active coping, and emotional focused coping such as seeking social support, acceptance and positive reinterpretation were all facilitative and corresponded with resilience (Hurley, 2018).

6.3.4 Conservationist qualities

This theme encompasses the essential qualities deemed necessary in order to be a TP conservationist (refer to 5.2.5.4). Participant A said: "*You need to be resilient*". This is corroborated in literature that suggested that resilience is indicative of combatting burnout and stress in helping professions (Grant & Kinman, 2015; O'Dowd et al., 2018). Persisting in the face of adversity was evidenced by a comment from Participant A: "*you got to put yourself in there and just do what needs to be done*". Persisting in the face of adversity and pacing oneself was also mentioned. This sentiment was evident in the correlation matrix where even though TP conservationists were exhibiting exhaustion (a component of burnout), they persevered and pressed through stressful times (refer to 6.2.5.2. and 6.2.5.3). Furthermore, even though the sample is experiencing state and trait depression, the correlation matrix revealed that the participants still exhibit tenacity – a stubbornness to persist, despite depressive moods felt (refer to 6.2.5.4).

Additionally, elements of being emotionally strong were suggested as being necessary from participant D: "*just very strong emotionally because there's going to be a lot to deal with*". This coincides with composure as a component of resilience where regulating of emotions is essential to resilience (Rossouw & Rossouw, 2018). TP conservationists that maintained composure were also likely to accept the stressors to be faced, therefore, actively dealing with the stress experienced (see 6.2.5.6).

6.4 Limitations of this study

As is the case with all research, there are a few limitations to consider when interpreting the results of this study:

- Even though the sample encompassed all TP conservationists (except those working undercover), the sample is relatively small and thus the results should be interpreted with caution.
- The sample included mostly females, and thus a gender imbalance was present. While this is a true reflection of the population working in conservation of TPs, research shows that there are gender differences in the experience of burnout (Adekola, 2010).
- The study did not assess stress levels. This was a theme that emerged in the qualitative interviews. It could have been beneficial to the study, as well as the participants, to have an indication of stress in addition to burnout.
- The study was cross-sectional in nature and thus only showed a snapshot in the lives of the TP conservationists. Consequently the experiences of burnout and depression may change, depending on the cases the TP conservationists are currently working with.
- This study was completed and data gathered during a global SARS-CoV-2 novel virus pandemic. This pandemic has placed a strain on the global population as well as individual experiences. This is likely to have impacted on the state of the conservationists during their participation.

These above limitations should ideally be addressed in future research within this field. Next, recommendations for future research will be given.

6.5 Recommendations for future research

Given the abovementioned limitations of the study, the following recommendations are suggested for future research:

- Future research will benefit from a larger sample size. Even though the sample utilised in this study was highly representative of the population (as it encompassed almost all of the population), the sample size was still small. It is recommended that future research is perhaps conducted on all conservationists that work with endangered species in order to increase the sample size.
- A longitudinal study that measures burnout, depressions, coping mechanisms and resilience over time may present a more accurate picture.
- A future study may enhance this study by potentially adding a developmental component to a longitudinal study in order to further build resilience and facilitate the use of adaptive coping mechanisms.
- Future research may consider assessing stress in addition to burnout. While many of the participants had markers of burnout, it is possible that many may be suffering from stress as an antecedent to burnout.
- Conducting future research in this field outside of a global pandemic may yield different results and thus may be beneficial.
- There is a lack of psychological research within the conservationist realm. Thus, conducting any future research within the conservationist realm would be advantageous.

6.6 Conclusion

The objectives of this study were to investigate the presence of burnout and depression in TP conservationists. Furthermore, the study sought to identify or discern the prevalence of resilience and coping mechanisms amongst TP conservationists. Lastly, the study wanted to understand the lived experiences of the TP conservationists. The sample utilised in this

study was relatively small even though it encompassed almost all of the non-undercover TP conservationists.

The study revealed that most the TP conservationists that participated in the study are currently experiencing state as well as trait depression. Additionally, while a third of the sample is currently at risk of experiencing burnout, only a small fraction of the participants are currently experiencing burnout. Within the TP conservationist participants, depression was shown to predict the onset of disengagement from work. Thus, depression and burnout are related within the TP conservationist community. While the experience of depression is considerably higher than the experience of burnout, should the TP conservationists not receive emotional and social support, the incidence of burnout is likely to increase.

Though the risk of an increase in burnout in the sample should not be diminished, the presence of elements of resilience within the participants facilitates their propensity to continue working through the most arduous tasks and the most stressful environments. Their goal focus, tenacity and collaborative spirit enable the TP conservationists to persist in the face of adversity. Therefore, although their experience of depression and burnout may hinder their well-being, the presence of resilience as well as utilisation of effective coping mechanisms enhances their experience of well-being. In terms of coping mechanisms, it was shown that the use of active coping mechanisms, accepting, planning and critically engaging with their perceived stressors enhanced the presence of resilience, most notably: tenacity, vision and collaboration.

While the experience of cynicism, exhaustion and depression can decrease cognitive clarity, the use of active coping mechanisms is associated with enhanced cognitive abilities. Therefore it is concluded that effective coping mechanisms facilitate the experience of resilience within TP conservationists. With a higher likelihood of resilience, it is indicated that the experience of burnout and depression will be diminished. Thus, it is suggested that

implementing a developmental workshop focusing on the utilisation of effective coping mechanisms may increase the well-being of the TP conservationists. This would assist in ensuring that they can continue their valiant efforts and remain resilient toward the environmental stressors experienced while hopefully saving TPs from extinction.

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APPENDIX A

ELECTRONIC INVITATION LETTER (PHASE ONE)



LETTER OF INTRODUCTION – PARTICIPATION IN ACADEMIC RESEARCH – COMPLETION OF QUESTIONNAIRES

Title of the Study: Depression, burnout, coping mechanisms and resilience amongst Temmincks ground pangolin conservationists: A mixed-methods approach.

Researcher: Sarah Kempen

kempen.sarah@gmail.com

Supervisor: Dr Nicoleen Coetzee

nicoleen.coetzee@up.ac.za

Your participation is requested in a research study for the completion of a Masters degree in the Department of Psychology at the University of Pretoria, focussing on the mental health of Temmincks ground pangolin conservationists.

Dear Temmincks ground pangolin conservationist,

As you are now aware, I am currently completing a Masters in Psychology. Research of an academic nature, which also has a strong practical application, forms the main component of the requirements for completion of this Masters degree.

During my own involvement in Temmincks ground pangolin rehabilitation and conservation, I have become aware of the personal stressors and hardships experienced by those practically involved in conserving an endangered species. The aim of this study is to investigate possible burnout and depression experienced by those involved in Temmincks ground pangolin conservation. The study also aims to determine if coping mechanisms and resilience are mitigating factors for possible burnout and depression. The findings of this study will be used to assist in identifying interventions and resources to assist conservationists. The study furthermore wants to create awareness and educate the population about Temmincks ground pangolin conservation and the challenges surrounding it.

To enable me to do this, I need to obtain information from those personally involved in Temmincks ground pangolin conservation. I would be sincerely grateful if you would assist me in my efforts, by completing four questionnaires regarding your current feelings and emotions as a Temmincks ground pangolin conservationist. These questionnaires will follow consecutively within this Google Forms document. This should not take longer than 45 minutes, at most. Please note, there are no right or wrong responses to the statements and I am interested in your honest opinion. Your answers will NOT be used for any diagnostic purposes

Room 11-2 Humanities Building
University of Pretoria, Private Bag X20
Hatfield 0028, South Africa
Tel +27 (0)12 420 2919
Fax +27 (0)12 420 3479
Email nicoleen.coetzee@up.ac.za
www.up.ac.za

Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomotheo

Due to the sensitive nature of pangolin conservation, your safety is of the utmost importance. This includes ensuring that your identity is protected, and your information is anonymised and kept confidential. The link included in this email includes information regarding informed consent. This is in order to ensure that you have willingly agreed to participate in the study, and are aware of what this entails. Due to the nature of this google form, there is no collection of personal data, and thus all information is automatically anonymised. All information gathered will be stored on a cloud based system that will be password protected, and only I, Sarah Kempen, the researcher will have access to it.

Statistical analysis will be performed on the data collected. No identifying information (such as your name, specific name of the organisation you work for) or any other identifying features will be included during this analysis. The results of this anonymised and confidential data might be used for future research purposes.

I am aware that Temmincks ground pangolin conservation is stressful. In the event that you do not want to participate or continue, you have the right to withdraw and not participate whatsoever. If as a result of this study, you feel that you would benefit from accessing support services, please feel free to contact me for assistance and possible referrals, or alternatively, contact the South African Depression and Anxiety Group (SADAG) on 080 012 1314 or Lifeline on 0861 322 322; both offering a freely available telephonic service.

Due to the fact that the data is confidential and anonymised, only feedback on the completed research will be produced in a generalised report format to the African Pangolin Working Group. The research results within the completed thesis will be made available at the University of Pretoria's library, and will be obtainable from the researcher too. The anonymised research data will be stored in compliance with the University of Pretoria's ethical rules (up to 15 years) as well as the rules that govern the profession of Psychology.

I am hoping that this research will be beneficial to a range of conservationists and related organisations. Your time and possible future contributions are greatly appreciated.

Please note, this questionnaire can be accessed and completed not only on a computer, but can be accessed successfully on a mobile device too.

Best regards,
Sarah Kempen
083 299 3160

Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomo

APPENDIX B

CONSENT FORM (PHASE ONE)

CONSENT

CONSENT TO PARTICIPATE IN THIS STUDY - Before the questionnaire begins, please ensure that you are comfortable with continuing and can AGREE to all the statements presented in the below paragraph.

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without any consequences or penalties. I understand that information collected during the study will not be linked to my identity and I give permission to the researchers of this study to access the information. I understand that this study has been reviewed by, and received ethics clearance from Research Ethics Committee Faculty of Humanities of the University of Pretoria. I understand who will have access to personal information and how the information will be stored with a clear understanding that I will not be linked to the information in any way. I understand how this study will be written up and published. I understand how to raise a concern or make a complaint. I give permission that the anonymised data can be used for future research. I have sufficient opportunity to ask questions and I agree to take part in the above study.

Agree

Disagree

By proceeding to the next step, you indicate that the above answers are correct and accurate.

Description (optional)

APPENDIX C

INVITATION LETTER (PHASE TWO)



LETTER OF INTRODUCTION – PARTICIPATION IN ACADEMIC RESEARCH –
COMPLETION OF A SEMI-STRUCTURED INTERVIEW

Title of the Study: Depression, burnout, coping mechanisms and resilience amongst Temmincks ground pangolin conservationists: A mixed-methods approach.

Researcher: Sarah Kempen
kempen.sarah@gmail.com

Supervisor: Dr Nicoleen Coetzee
nicoleen.coetzee@up.ac.za

Your participation is requested in a research study for the completion of a Masters degree in the Department of Psychology at the University of Pretoria, focussing on the mental health of Temmincks ground pangolin conservationists.

Dear Temmincks ground pangolin conservationist,

As you are now aware, I am currently completing a Masters in Psychology. Research of an academic nature forms the main component of the requirements for completion of this Masters degree.

During my own involvement in Temmincks ground pangolin rehabilitation and conservation, I have become aware of the personal stressors and hardships experienced by those practically involved in conserving an endangered species. The aim of this study is to investigate possible burnout and depression experienced by those involved in Temmincks ground pangolin conservation. The study also aims to determine if coping mechanisms and resilience are mitigating factors for possible burnout and depression. The findings of this study will be used to assist in identifying interventions and resources to assist conservationists. The study furthermore wants to create awareness and educate the population about Temmincks ground pangolin conservation and the challenges surrounding it.

To enable me to do this, I need to obtain information from those personally involved in every aspect of Temmincks ground pangolin conservation. I would be sincerely grateful if you would assist me in my efforts, by partaking in a conversation regarding your involvement in Temmincks ground pangolin conservation. This should not take more than 30 minutes to complete. Please note, there are no right or wrong responses to the statements and I am

Room 11-2 Humanities Building
University of Pretoria, Private Bag X20
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Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomotho

interested in your honest opinion. Your answers will NOT be used for any diagnostic purposes.

Following the completion of questionnaires, this interview will give you an opportunity to share information about your lived experience as a Temmincks ground pangolin conservationist. This information will be audio recorded to ensure that I can accurately transcribe the information you have shared.

Due to the sensitive nature of pangolin conservation, your safety is of the utmost importance. This includes ensuring that your identity is protected, and your information is anonymised and remains confidential. Your personal information will be required for the consent form, in order to ensure that you have willingly agreed to participate in the study, and are aware of what this entails. Thereafter, a unique number will be added to the transcribed interview documents. This unique number ensures that all information is anonymised. Consent forms and transcribed interview documents will be kept separately thereby ensuring that no identification can be made. All information gathered will be stored on a cloud based system that will be password protected, and only I, Sarah Kempen, the researcher will have access to it.

Statistical analysis will be performed on the data collected. No identifying information (such as your name, specific name of the ~~organisation~~ you work for) or any other identifying features will be included during this analysis. The results of this ~~anonymised~~ and confidential data might be used for future research purposes.

I am aware that Temmincks ground pangolin conservation is stressful. In the event that you do not want to participate or continue, you have the right to withdraw and not participate whatsoever. If as a result of this study, you feel that you would benefit from accessing support services, please feel free to contact me for assistance and possible referrals, or alternatively, contact the South African Depression and Anxiety Group (SADAG) on 080 012 1314 or Lifeline on 0861 322 322; both offering a freely available telephonic service.

Due to the fact that the data is confidential and ~~anonymised~~, only feedback on the completed research will be produced in a ~~generalised~~ report format to the African Pangolin Working Group. The research results within the completed thesis will be made available at the University of Pretoria's library, and will be obtainable from the researcher too. The ~~anonymised~~ research data will be stored in compliance with the University of Pretoria's ethical rules (up to 15 years) as well as the rules that govern the profession of Psychology.

I am hoping that this research will be beneficial to a range of conservationists and related ~~organisations~~. Your time and possible future contributions are greatly appreciated.

Best regards,
Sarah Kempen
083 299 3160

Faculty of Humanities
Fakulteit Geesteswetenskappe
Lefapha la Bomotheo

APPENDIX D
 CONSENT FORM (PHASE TWO)



Depression, burnout, coping mechanisms and resilience amongst Temmincks ground pangolin conservationists: A mixed-methods approach.

WRITTEN CONSENT & BIOGRAPHICALS TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

Biographical Information:

Age:

Gender:

How long have you been involved in Temmincks ground pangolin conservation:

Consent:

STATEMENT	AGREE	DISAGREE
I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, and without any consequences or penalties.		
I understand that information collected during the study will not be linked to my identity and I give permission to the researchers of this study to access the information.		
I understand that this study has been reviewed by, and received ethics clearance from Research Ethics Committee Faculty of Humanities of the University of Pretoria.		
I understand who will have access to personal information and how the information will be stored with a clear understanding that I will not be linked to the information in any way.		
I understand how this study will be written up and published.		
I understand how to raise a concern or make a complaint.		

I consent to being audio recorded.		
I consent to have my audio recordings to be used in research outputs such as publication of articles, thesis and conferences as long as my identity is protected.		
I give permission to be quoted directly in the research publication whilst remaining anonymous.		
I give permission that the data can be used for future research.		
I have sufficient opportunity to ask questions and I agree to take part in the above study.		

Name of Participant

Date

Signature

Sarah Kempen

Date

Signature

APPENDIX E

SEMI STRUCTURED INTERVIEW GUIDE (PHASE TWO)



SEMI-STRUCTURED INTERVIEW GUIDE

Briefly explain how you got involved in Temmincks ground pangolin conservation.

Describe what your involvement entails.

Tell me about the stressors or hardships you personally experience by being involved in Temmincks ground pangolin conservation.

Tell me about the impact of the stressors on you.

Describe the emotions you experience as a Temmincks ground pangolin conservationist. Probe for positive as well as negative emotions.

Explain how you cope with the stress and challenges related to being a Temmincks ground pangolin conservationist. Probe for coping with negative emotions.

What qualities or factors do you think assist you with the stressors experienced?

Tell me what motivates you to continue to be a Temmincks ground pangolin conservationist.

APPENDIX F
ETHICAL CLEARANCE LETTER



9 February 2020

Dear Ms S Kempen

Project Title: Depression, burnout, coping mechanisms and resilience amongst Temmincks ground pangolin conservationists: A mixed methods approach.
Researcher: Ms S Kempen
Supervisor: Dr N Coetzee
Department: Psychology
Reference number: 19390115 (HUM006/1219)
Degree: Masters

I have pleasure in informing you that the above application was **approved** by the Research Ethics Committee on 30 January 2020. Data collection may therefore commence.

Please note that this approval is based on the assumption that the research will be carried out along the lines laid out in the proposal. Should the actual research depart significantly from the proposed research, it will be necessary to apply for a new research approval and ethical clearance.

We wish you success with the project.

Sincerely

Prof Maxi Schoeman
Deputy Dean: Postgraduate and Research Ethics
Faculty of Humanities
UNIVERSITY OF PRETORIA
e-mail: PGHumanities@up.ac.za

Fakulteit Geesteswetenskappe
Lefapha la Bomotheo

Research Ethics Committee Members: Prof MME Schoeman (Deputy Dean); Prof KL Harris; Mr A Bizos; Dr L Blokland; Dr K Booysens; Dr A-M de Beer; Ms A dos Santos; Dr R Fasselt; Ms KT Govinder Andrew; Dr E Johnson; Dr W Kelleher; Mr A Mohamed; Dr C Puttergill; Dr D Reyburn; Dr M Soer; Prof E Tallard; Prof V Thebe; Ms B Tsebe; Ms D Mokalao

APPENDIX G
APWG LETTER



African Pangolin Working Group

18th September 2019

Dr Nicoleen Coetzee
Department of Psychology
University of Pretoria

Dear Dr Coetzee,

This letter is in support of Ms Sarah Kempen's proposed master's study in psychology entitled "*Investigating mental health amongst Temmincks ground pangolin conservationists: a mixed methods approach*".

I consider this a particularly important topic and one clearly worth investigating. A study of this nature has never previously been undertaken globally; that is investigating the mental drain and fatigue experienced by people working hands-on with pangolins. Pangolins are a unique mammal in that they are different to all other mammals. There is something in their make-up and nature that creates and incredible, invisible and vastly emotional bond to each individual. Not to say that other species such as rhino do not, but their is something unique in this species. When my team and those at the Johannesburg Wildlife Veterinary Hospital lose one and then another and then another and so on, it is not a sad event or an unfortunate event or even a regrettable event, it is a deeply spiritual event that is so completely draining and emotional on a level that is difficult to describe. The cumulative emotional fatigue of these people is of great concern to me and, as such, I am highly supportive of this study and my organisation will make ourselves available to whatever you require.

Yours sincerely,

Prof Ray Jansen
Chairman: African Pangolin Working Group

CC:
Nicci Wright
Alexis Kriel
Amanda Irving
Sarah Kempen

Postal Address: Private Bag X680, Pretoria 0001, Gauteng, South Africa
Tel: +27 (0) 82 555 1016 Fax: +27 (0) 12 382 6354 E-mail: jansen@tut.ac.za Web: <https://www.africanpangolin.org/>

The African Pangolin Working Group is a non-profit, public benefit organisation dedicated to conserving pangolins and their ecosystems in Africa

South African NPO Registration Number: 123-147 NPO
Board members: Prof Ray Jansen (Chairman), Nicci Wright (Executive Director), Alexis Kriel (Projects Manager), Amanda Irving

APPENDIX H

JWVH LETTER



Date: 16 September 2019

To whom it may concern,

We, the Johannesburg Wildlife Veterinary Hospital (JWVH), give permission to Sarah Kempen to approach individuals associated and working with our organisation in the efforts of Temminck's ground pangolin conservation. This permission is in order for her to complete her Master's degree entitled "Investigating the mental health and well-being amongst Temminck's ground pangolin conservationists: a mixed methods approach."

We understand that Sarah will need to gain informed consent for voluntary participation in the aforementioned study from conservationists associated with our hospital and Temminck's ground pangolin conservation. We understand the parameters of the study and understand that the information gathered will be for research purposes only, and will be treated with the strictest confidence, and in alignment with the latest update of the Protection of Personal Information (POPI) Act.

We have Sarah's contact details should we require further information and we are aware of the existence of organisations such as the South African Depression and Anxiety Group (SADAG) as well as Lifeline should any of our Temminck's ground pangolin affiliates require further assistance.

Best regards

Dr Karin Lourens

Johannesburg Wildlife Veterinary Hospital
101 Macgillivray Road
Midrand
Tel: 071 248 1514
NPC Number: 2016/492395/08
PBO Number: 930055522