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What makes conservationists persevere? Resilience strategies at work.

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Abstract Modern day conservation professionals are faced with cognitive and emotionally demanding tasks and a wide range of working conditions, which may include long hours, isolation from friends and family, and high levels of uncertainty, e.g. the socio-political contexts in which organizations and their staff must function. Positive adaptation to professional challenges, here referred to as resilience, can help individuals thrive in their role. In this qualitative study, we explored factors relating to positive and negative psychological states. We interviewed twenty-two individuals with professional experience working in high-biodiversity countries that have limited informational, human and financial resources. We used thematic analysis to identify themes and strategies to promote resilience in the workplace. Results revealed factors associated with positive psychological states included answering an occupational calling, achievements, and recognition and appreciation for work. Organisational policies and administration, especially perceived unfairness regarding salaries, recruitment policies, promotion and professional development, were connected to negative psychological states, as were other factors related to the job context. Respondents shared their professional resilience strategies, such as appreciating the positives and maintaining optimism,

aligning work with one's values, and personal reflection and goal setting. Organisations can play an important role in supporting employees in the process of building resilience by addressing basic needs and factors that are of motivational value.

Introduction

To reach our collective goal of conserving the world's natural biodiversity, we need a workforce that has the capacity to learn and adapt whilst taking effective and timely conservation. Workplace adversity is an issue gaining increasing attention in the context of health care and social work (Jackson et al., 2007; Kašpárková et al., 2018), and slowly gaining traction in conservation (Moreto, 2016; Spira et al., 2018; Belhekar et al. 2020). Conservation professionals are located around the world and often are the first line of defence when dealing with urgent environmental issues. For example, recent studies report that law enforcement rangers experienced negative psychological states (e.g. stress, anxiety, fear, and demotivation) due to the risk of dangerous encounters with wildlife, poachers and rebels (Moreto, 2016; Spira et al., 2018). Indeed, 79.9% of 1,742 rangers working across Asia, Africa and Latin America reported having faced a life-threatening situation due to such dangerous encounters (Singh et al., 2020). Working in remote areas with less developed infrastructure also increases chances of aviation and car accidents (Sasse, 2003). Desk-based conservation jobs often require particular cognitive demands, e.g. complex problem-solving dealing with local to global-scale drivers of biodiversity loss, and emotionally straining tasks, such as dealing with stakeholders who hold conflicting interests. Such demanding aspects in the workspace could cause negative psychological states, including burnout which is defined as a prolonged cognitive-emotional response to chronic stressors characterised by exhaustion, cynicism and reduced personal accomplishment (Maslach & Leiter, 2008). These negative psychological states can, in turn, lead to reduced work performance and other negative organisational outcomes such as staff turnover (De Jonge & Dormann, 2003). Enhancing professionals' ability to positively adapt to changing conditions, uncertainty and adversity, here referred to as resilience (Jackson et al., 2007), is therefore desirable. This link between the work environment and an individual can also be found in a rapidly growing body of research on resilience in social-ecological systems that illustrates that the capacity of any individual or society to cope and adapt to change depends on the resilience of the institutions they are part of and the natural resources they depend on (e.g. Adger, 2000; Berkes et al., 2003; Biggs et al., 2015). In this body of work, resilience in social and ecological systems, whether this concerns an individual, a society, an institution or a forest, is seen as an ongoing process to build the capacity to deal with change and still retain its function and structure or state, and increase the capacity for learning and adaptation (e.g. Berkes et al. 2003). In a similar vein, resilience seen through the lens of organisational psychology, is considered a process. In the workplace, the ability to overcome adversity (including stress) and adjust in a positive way, i.e. resilience (Jackson et al., 2007), is critical to increase one's capacity for learning and adaptation. Previously perceived as a personal characteristic, resilience is now seen as a process, linked to skills that may be learned for two functions: preventative, i.e. to protect against

adversity, and coping, i.e. handling traumatic situations effectively (Beresin et al., 2016; Zwack & Schweitzer, 2013). In this study, we have adapted Deci et al. (2017) conceptual model (Fig 1) to match our research question, linking workplace factors with individual outcomes (i.e. work behaviour, health and wellness, and resilience) through psychological states. The relationship between workplace factors and psychological states is moderated by individual differences, included resilience strategies. In understanding the resilience process it is important to explore the sequences of psychosocial experiences in the workplace that explain these relationships, rather than considering these as one-directional causal relationships (Salanova et al., 2011). However, the conceptual model will give us a starting point in our investigation of resilience in the conservation context. We will discuss the elements of this model in the next paragraphs.

Individual differences

Self-efficacy is a characteristic that has been associated with resilience and relates to how one perceives one's abilities, including the ability to influence one's environment (Bandura, 2000). A person can experience a high sense of efficacy in one domain, e.g. work, but low-efficacy in another, e.g. personal relationships (Bandura, 2000). Resilience influences positive individual outcomes; in a study among 360 Czech workers in helping professions, resilient individuals experienced higher job satisfaction and work engagement than their less resilient co-workers (Kašpárková et al., 2018). Whereas job satisfaction results from an individual's evaluation of whether job conditions and characteristics facilitate one's job values, work engagement refers to an individual's experiences resulting from doing the work and is characterised by energy (Christian et al., 2011). Job satisfaction and work engagement are two critical dimensions of work-related well-being (Kašpárková et al., 2018). In this study, we examined well-being from the hedonic perspective, characterised by high levels of satisfaction and enjoyment, and from the eudaimonic tradition which explores well-being from a perspective of actualising one's potential, to address fulfilment and meaning in one's life (Deci & Ryan, 2008). Building on the concept of eudaimonia, we considered here both the constructs of work value orientation and work motivation.

Work value orientation concerns how people value work for a wide range of reasons (Berg et al., 2010), whether a calling orientation (i.e. work is one of the most important aspects of life), job orientation (i.e. income-focus and to support lives outside of work), or career orientation (i.e. work is used as a ladder to move to better, higher-level positions). The first category, also called occupational

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calling, can be recognised when an individual feels drawn to pursue a specific occupation, believes it to be meaningful and/or intrinsically enjoyable, and views that occupation as a central part of their identity (Berg et al., 2010). A calling orientation is associated with intrinsic motivation, whereby an individual takes up an activity because they find it interesting and enjoyable. The second type of motivation is extrinsic motivation and refers to engaging in an activity for instrumental reasons, such as monetary and non-monetary rewards and avoiding punishments or criticism (Ryan & Deci, 2000). Efforts aimed at helping others is termed prosocial motivation; it focuses on others, both in values and in goals, intending to produce beneficial outcomes (Grant, 2008) and is therefore distinguishable from intrinsic motivation. Fulfilling the psychological needs for autonomy, competence and relatedness (i.e. feelings of belonging to a social group) positively influence an individual's motivation and engagement for certain activities, which in turn may enhance their performance, persistence, and creativity (Ryan & Deci, 2000).

Despite recent studies on the significant professional risks (e.g. Moreto, 2016; Spira et al., 2018), few sources in the conservation literature have examined the importance of resilience in its professionals and, to the best of our knowledge, no empirical studies on this topic exist to date (Moreto, 2016). Past studies on resilience in professionals mainly concern health care providers (Beresin et al., 2016; Jackson et al., 2007; Zwack & Schweitzer, 2013). The current study addresses this knowledge gap in the conservation sector. We defined conservation professional (hereafter referred to as 'conservationists') as an individual who is paid or receives compensation in exchange for work, and works towards nature conservation goals. In light of the workplace adversity that conservationists face (Sasse, 2003; Moreto, 2016; Spira et al., 2018; Belhekar et al., 2020; Singh et al., 2020) and the limited literature on this topic mostly studying rangers, we examined which workplace factors contributed to positive and/or negative psychological states in a broad sample of conservationists and which resilience strategies they employed to cope with adversity and recover after setbacks at work. We were especially interested in conservationists working in countries with high biodiversity that have limited informational, human and financial resources, in an effort to guide both individual professionals and organizational management in those countries in optimising positive psychological states and resilience. Understanding ways in which conservationists positive psychological states and resilience can be optimised and how this process can be supported by the wider environment (e.g. organisation and sector levels) is key to their wellbeing and performance, and, in turn, could translate to more effective and timely conservation action. Our study contributes to the scarce literature on conservationists' wellbeing and performance, and we hope that it will encourage more

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conservationists and managers to identify and support resilience strategies to optimise feelings of energy, fulfilment, motivation, and job satisfaction at work.

Methods

Participants and interview guide

Due to the limited empirical evidence associated with this field of enquiry, qualitative data collection and analysis is best suited to enable the identification and development of propositions to guide future research (Newing, 2011). We chose convenience sampling (Newing, 2011) and participants were recruited from three sources: i) the University of Kent, UK, ii) attendees at an international conference of conservation professionals hosted by the University of Pune, India, 18-21 March 2017, and iii) through the authors' professional networks, with all three sources drawing people from a range of ages, job positions, and settings. Our selection criteria was that respondents had to have professional experience working in high-biodiversity countries that have limited informational, human and financial resources (i.e. countries that are in Africa, Latin America and the developing parts of Asia). The sample size was deemed adequate to identify meta-themes across different sites and reach theoretical saturation, i.e. when new data from interviews result in little to no change to the codebook (Hagaman & Wutich, 2017). Prior to the interview, respondents were informed by email of the research aims, assured anonymity and confidentiality, and that they were free to withdraw from the study at any time. Interviews were conducted in English by TACL between March and June 2017 at a location convenient to the interviewee, i.e. place of work or work activity, with no non-participants present, with the exception of one interview where the interviewee's colleague was present. The semi-structured Interviews lasted an average of 74 minutes (range = 30-130 minutes). The interview guide was designed in English on the available literature and this study's research question (see interview guide, Supplementary Material 1). The interview guide was piloted with 10 people, including 4 non-native English speakers and 6 native English speakers, and minor wording adjustments were made based on their feedback. The COREQ checklist (Tong et al. 2007) was used to promote explicit and comprehensive reporting in this qualitative study (Supplementary Table S1).

Analysis

Interviews were audio recorded, transcribed verbatim, and coded in NVivo 12 (QSR International 2019) by TACL using keywords to categorize positive and negative perceptions and conceptual links between them, so that we could identify patterns and themes. We followed Braun and Clarke's (2006)

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Thematic Analysis, using both the inductive development of codes to identify workplace factors that were said to influence positive and negative psychological states (Bradley et al., 2007). This was followed by an deductive approach in which we used a 'start list' (Miles et al., 2014) based on previous research insights on these in other sectors, e.g. Zwack & Schweitzer (2013). Themes were identified, refined and/or expanded through the comparison of data to identify theoretical saturation (Hagaman & Wutich, 2017). Firstly, we categorised workplace factors associated with positive psychological states (e.g. energy, job satisfaction, fulfilment, motivation), and workplace factors linked to negative psychological states (e.g. stress, frustration, burnout). Secondly, we explored which strategies professionals employed to overcome workplace adversity; considered as indicators of resilience. Finally, we generated recommendations following our analysis to help conservation professionals and organisations understand how to build and maintain a healthy, motivated and productive conservation workforce.

Results

Characteristics of the participants

All interviewees had recent (< 6 months before interview) experience of employed professional work in conservation and had worked in high-biodiversity countries that have limited informational, human and financial resources, i.e. countries that are in Africa, Latin America and the developing parts of Asia. Eleven of the 22 participants were professionals in conservation roles at the time of interview. University-based participants included two senior lecturers, two lecturers, one post-doctoral Researcher, one doctoral student and five MSc students (Table 1). Respondents' nationalities comprised 9 biodiversity-rich countries with limited access to financial, informational and human resources, i.e. Bangladesh, Brazil, India, Indonesia, Mozambique, Seychelles, South Africa, Uganda, and Yemen, in addition to other countries, namely Singapore, UK and US. Respondents from the latter three countries drew on work experiences when being based in biodiversity-rich countries with limited resources, including but not limited to Costa Rica, Guyana, Liberia, Madagascar, Malaysia, Micronesia, Mexico, Peru, Polynesia, and Tanzania, and are therefore referred to as 'non-nationals'. No notable differences were found in themes across demographic variables (e.g. country-nationals versus non-nationals, career stage, gender).

Workplace factors influencing positive psychological states

In this section, comments focus on respondents' reference to positive psychological states (e.g. energy, job satisfaction, fulfilment, meaning, motivation) in the workplace. All interviewees shared

experiences covering at least one identified theme; 59% (n=13/22) of respondents reported experiences in two or more of these themes. We identified five factors linked to positive psychological states that more than 1 participant experienced in this study. The three major themes are discussed below and supportive quotes can be found in Supplementary Table S3. An overview of major (>25% respondents) and minor (≤25% respondents) themes is presented in Figure 2.

Most respondents referred to recognition and appreciation as sources of energy and job satisfaction (Table S3). The source of appreciation or recognition was important and included beneficiaries, superiors and through self-appreciation. Respondent 12 provided a management perspective: "*I think my own experience in running an environmental NGO was that people came and wanted to contribute, but everyone had different levels of commitment, different abilities and different amounts of time they had available. Everyone had a different contribution to make and the important thing was to make them feel needed and a part of the group*".

Work success or achievement was a source of motivation and/or energy according to half of the respondents (Table S3). Respondent 22 explained one example: "*In the community we are trying to change behaviours and as communities get more motivated, [..] they talk about how they want to protect the wildlife and all of that and they show it and you see it [..] and they are very appreciative of how you are helping them; you move together. [..] So maybe what inspires us is when we see some improvements, some positive changes, which are really long-term behaviour change*".

All 22 interviewees reported interest in and/or enjoyment of the work itself, indicating intrinsic motivation. Eighteen interviewees (82%) described conservation work as an occupational calling. These respondents felt drawn to conservation work using words such as "passion" and "love", felt intrinsic joy and meaning when performing such work, and saw it as central to their identity. For example, Respondent 11 mentioned: "*I knew when I was six years old what I was going to do. It's not even conceivable for me to be doing something that's not conservation*". Of these 18 respondents, 11 also referred to pursuing their occupational calling as a source of energy and gratification in their work (Table S3). Some indicated that activities which aligned with their work value orientation increased the meaningfulness of their work and their job satisfaction. The majority of the interviewees (n=12/22) indicated prosocial motivation as an additional drive in their work, illustrating the desire to help others.

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Workplace factors influencing negative psychological states

In this section, comments are included where respondents referred to sources that caused them to experience negative psychological states, such as disappointment, frustration, and dissatisfaction at work. With the exception of one interviewee due to the interview being cut short, all interviewees shared experiences covering at least one identified theme; 68% (15/22) of respondents reported experiences in two or more of these themes. We identified seven factors linked to negative psychological states that more than 1 participant experienced in this study. The four major themes are discussed below and supportive quotes can be found in Supplementary Table S4. An overview of major (>25% respondents) and minor (≤25% respondents) themes is presented in Figure 3.

This major theme includes interviewees' perceptions of organisational policies and administration, including views on the distribution of resources, recruitment policies, promotion and professional development opportunities, in relation to job dissatisfaction and negative psychological states. Resource inadequacies was identified as a sub-theme and included quotes concerning financial, human or informational resources. An example was provided by respondent 1: "*How many times I take money from my pocket! [..] Sometimes we can give money for conservation from our pockets, but how many times?*". This sub-theme also included living situations that, due to insufficient salary or resources, led to energy and/or health impairment (Table S4). Interviewees described that poorly defined work responsibilities and work scope can result in low quality performance appraisals and a perceived unfairness on the side of the employee. The credibility and trustworthiness of the person running performance appraisals also led to perceived unfairness and dissatisfaction in participants (Table S4). Dissatisfaction also occurred in situations where interviewees felt excluded from job opportunities, professional development opportunities and/or decision-making opportunities. This exclusion could be formal or informal (third sub-theme). Some interviewees reported a formal exclusion of socially perceived subordinate groups (including women) in the provision of job opportunities (Table S4). Across these three sub-themes, perceived unfairness emerged as a prominent theme.

Experiences regarding working conditions were divided into three sub-themes (Table S4): 1) cognitive demands, including workload and time pressure, 2) emotional demands, such as complexity (e.g. stakeholders with conflicting interests, power dynamics), and 3) physical demands related to unsafe working conditions, though none of the interviewees had worked as a law enforcement ranger as far as the authors are aware. For example, Respondent 9 shared: "*The area where I work [..] have*

many tropical diseases and every time armed force militants create disturbance to you, you cannot work".

The work-life balance theme includes experiences leading to negative psychological states, such as emotional exhaustion (Table S4). Some respondents illustrated how experiencing an occupational calling could intensify work stress: "*Your passion for what you do [..] drives you to perform better. You are willing to work harder and longer hours but you can also then get to a point where you start burning out and then it kind of just reverses and you don't perform as well [..]. The harder you work, the more people expect of you [..] I got to a point [..] thinking I need to find another job*" (Respondent 4).

The last main theme is relationship with supervisor and comprises interviewees' experiences with their supervisors, line managers or organisational leaders with feelings of dissatisfaction at work. Respondent 15 reported that overcontrolling leaders left her feeling dissatisfied at work after which she resigned from her job (Table S4). For people with an occupational calling in particular, it seems important that the work is meaningful and aligns with their personal beliefs and values. In cases where the meaningfulness of one's work was impeded by cultural factors, such as leadership, respondents described that job dissatisfaction occurred.

Resilience strategies to thrive at work

This section examines how conservation professionals keep themselves motivated when facing workplace adversity, and includes strategies that help them cope with or prevent work-related stress, whilst remaining engaged and productive. With the exception of one interviewee, everyone shared experiences covering at least one identified theme; 68% (15/22) of respondents reported experiences in two or more of these themes. We identified six resilience strategies for maintaining motivation at work that more than 1 participant experienced in this study. All six strategies are considered major themes (>25% respondents) as discussed below with quotes in Table 5. An overview of major themes is presented in Figure 4.

Appreciate the positives and maintain optimism: The first strategy includes comments drawing upon positives and appreciating what was good, both linked to freeing up energy and maintaining motivation (Table 5). Accepting personal boundaries was linked to maintaining optimism: "*I think*

that the biggest issue for me is to think about what is feasible and manageable for yourself. Because when you start taking on the whole world..[..] The more important thing is to really do well at the scale that works for you. And then connect that to other people who are working on that scale and collectively you can have a bigger impact" (Respondent 16).

Connect to your work value orientation: Respondents who described (re-)connecting with their work value orientation linked this to feelings of energy, motivation and job satisfaction (Table 5). Respondent 5 shared to be affected by barriers to reconnecting to their work value orientation: "*I think that for a long time [..] I was able to keep myself well-motivated because I was able to go to the field fairly regularly and since I haven't been as mobile over the past 5 years, I think that is another thing that has become a handicap in terms of keeping up my motivation*".

Reflect and set goals: Interviewees mentioned to take time to reflect on personal situations and evaluate (life) goals, which was said to help restore health, regain motivation, and provide a sense of direction for one's career. Respondent 18 provided an example: "*When I do appraisals of my senior managers [..] we realised that we worked a lot but we haven't got that sense of satisfaction and achievements. So we make that the practice, we say every year, there should be one thing that each of us does, which makes us feel proud when we look back [..] and that is also what motivates you*".

Look for opportunities to learn and grow: Work motivation was said to be enhanced through professional growth. Respondents described different types of professional development, such as pursuing formal degrees, individual inquiry-research (e.g. reading), study trips to other conservation sites, and professional networks or learning communities (Table 5). Professional growth could be pursued independently (e.g. self-study), though the majority of examples referred to activities that involved connecting with other professionals.

Invest in relationships that energise you: This strategy addresses the importance of contact with colleagues in the profession to enhance professional knowledge, and inspire and re-energise (Table 5). A feeling of relatedness was prominent in this strategy and overcoming feelings of isolation was regarded as an essential goal: "*Sending your staff away to a conference is about empowering your staff. Certainly if you're in small portfolio offices in a big country, you often feel that it is sort of*

isolated doing this thing called conservation. But it's about [..] communities of practices, realising [and] really witnessing how many people come together for a common theme" (Respondent 21).

Self-demarcate (set professional boundaries): Defining and maintaining boundaries at work helped safeguard energy sources (Table 5) and aided off-work recovery: "*I was starting to burn out and I had to make some decisions. [..] I need to try and be efficient but then leave between 5 and 6 [..] Then that started changing things again slowly where I actually started to look forward to getting to work again. [..] It helped that my boss [..] understood [..] He was very supportive of that*" (Respondent 4).

Behemoth battle and the role of self-efficacy

Respondent 16's account sums up the experiences among respondents in which they experienced a loss of self-efficacy: "*I have noticed that people leave the field of conservation because they are disaffected and may get tired, they feel like they are constantly trying to push against this behemoth. The people in the conservation arena [..] lack agency and power to make the difference that needs to be made to change [..] the threats. [..] I feel that some of it is disappointment with how things are going and how slow things are moving. Going to a place and trying to conserve and going back in a couple of years and finding it completely gone, it's hard on the heart, it's hard on the soul*".

Discussion

The study was designed to contribute to the literature on workplace factors contributing to positive and/or negative psychological states among conservationists, and the resilience strategies they employ to cope with workplace adversity. Resilience strategies among the conservationists we interviewed matched those of physicians (Zwack & Schweitzer, 2013), in terms of useful attitudes (e.g. appreciating the positives) as well as practices and routines (e.g. self-demarcation). Our results differed from Zwack & Schweitzer's (2013) results in that our interviewees said to reflect on their work value orientation and undertake activities to connect with it to increase and/or maintain their motivation. This reflection can be encouraged by managers if they know staff's work value orientation (Spira et al., 2018).

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Our results indicate that undertaking work in line with one's work value orientation, and especially the calling orientation, may free up energy and motivation, which can lead to job satisfaction, work engagement and wellbeing. This finding is in line with previous research demonstrating that people who see their work as a calling reported higher job satisfaction than those with a job or career orientation, and reported missing fewer days of work, which may indicate better health and/or motivation (Wrzesniewski et al., 1997). Additionally, ≥50% of our respondents experienced positive psychological states associated with work success and being recognised in this success, which corresponds to earlier studies across the primary, secondary and tertiary sector, including agriculture, manufacturing and health care (Herzberg, 1968). A study of job satisfaction among law enforcement rangers in Uganda showed similarities to our study whereby conducting work in line with one's values (e.g. protecting wildlife for future generations/as part of natural heritage), work success (i.e. not finding illegal activities or suspects during patrols), and personal growth contributed to job satisfaction (Moreto et al., 2016). Staff involved in a marine conservation project in Papua New Guinea reported that time for reflection, monitoring and evaluation, and thus growth was not prioritised as part of their everyday work and, at some levels of the organisation, actively discouraged by management, leading to emphasis being placed on project success rather than honest and complete overviews of project achievements (Benson-Wahlen, 2014). Sufficient and fairly distributed opportunities to learn and grow as well as supportive leaders who foster a learning culture were identified as two key components of effective professional development among conservationists (Loffeld et al., in press). Two resilience strategies identified in the current study are directly linked to professional learning and growth: Personal reflection and goal setting and looking for opportunities to learn and grow. We recommend for future research to test the relationship between learning opportunities (including time for regular reflection) and a learning climate supported by organisational leaders on the one hand, and outcomes including work performance and resilience on the other hand.

We identified workplace factors that were associated with negative psychological states, which resemble findings in previous conservation studies. For example, among African law enforcement rangers workplace factors that were associated with negative outcomes included human resource inadequacies, lack of informational resources (i.e. communication) and tools/equipment needed, lack of basic needs (e.g. sanitary facilities, food, water) and unsafe working conditions, resulting in physical injuries and sickness (Moreto, 2016; Spira et al., 2018). Among Ugandan rangers, high workloads, pressure for results, poor supervisory and peer relationships and perceived unfairness

were reported as additional sources of stress (Moreto, 2016), similarly reported by our respondents. Our study highlights that the groups at risk are not only law enforcement rangers and, building upon the burnout literature (Maslach & Leiter, 2008), this risk extends to all those conservation professionals who face a high workload, experience limited control at work, work in isolation, little recognition and rewards, perceive unfairness in their workplace, or experience work value conflicts in the workplace. Patterns of negative psychological states (e.g. exhaustion, cynicism) could develop into burnout over time, especially with limited off-work recovery (Sonnentag et al., 2010). Fairness (or its lack) has been reported to be a tipping point in this process, e.g. when staff feel angry about job inequities and lack faith in organisation policies to bring justice (Maslach & Leiter, 2008). It is therefore advisable for organisations to consider perceived fairness of rewards, e.g. promotion opportunities and salary, to prevent negative psychological states among employees. We would also like to highlight that exposure to unsafe working conditions (e.g. threats from wildlife, humans, and disease pressures) are not restricted to the ranger conservation cadre. In fact, none of the interviewees have worked as a law enforcement ranger, yet a few explicitly stated enduring psychological shock and physical pain due to unsafe working conditions. Working conditions that impede social relationships (e.g. with family, friends) were highlighted in this study and previous research for rangers and forest guards (Spira et al., 2018; Belhekar et al. 2020). We recommend that conservation organisations evaluate and mitigate working conditions that may impede employees' safety and personal relationships. Such initiatives would promote an organisational culture of care and enhance social support, leading to higher levels of resilience (Hobfoll, 2002) and positively influence well-being, work engagement, and productivity (Kašpárková et al., 2018).

Similar to previous findings (Herzberg, 1968; Moreto, 2016), factors identified in the current study were not mutually exclusive; although factors that related to positive psychological states were generally different to those factors that contributed to negative psychological states. Negative factors, also named 'dissatisfiers', relate to the context of the job and include basic human needs (e.g. safety, salary and benefits, personal life) and if not addressed, may cause negative psychological states (Herzberg, 1968). Positive psychological states are associated with a group of factors called 'motivators' that relate to the work itself and actualising one's potential (e.g. recognition, achievement, growth). Both motivators and dissatisfiers are linked to eudaimonic and hedonic perspectives of well-being (Deci & Ryan, 2008), respectively. Our study's sample size was modest and findings cannot be generalised to other conservation professionals. Although no notable differences were found in themes across demographic variables (e.g. country-nationals versus non-

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nationals, career stage, gender), the limitations of interviews being conducted in English means that the sample of this study is not completely representative of the overall population of conservation professionals globally and the influence of certain demographics cannot be excluded. Whilst this is a weakness of the study, the results can still give a useful indication of the situation among conservation professionals. Our findings included the views of 22 professionals across 12 different nationalities, and support previous research from other sectors. In addition, theoretical saturation was believed to have been reached in this qualitative study, since the data allowed us to identify areas of consensus and answer our research questions, and the data up to a certain point resulted in little new information (Newing, 2011). Based on our study results, we recommend considering both motivators and dissatisfiers (see also Henson et al. 2016 for examples) when organisations aim to support employees in the identification and implementation of resilience strategies and to be considered in future research. We furthermore have included practical recommendations below that can be of value across different contexts.

Implications for conservation professionals and organisations

Conservationists face multiple challenges that are complex, relentless and often outside their control (Bruyere, 2015). We recommend the conservation sector to take action at multiple levels in response to these findings in order to foster strong personal resilience in conservation work. Firstly, individual conservation professionals should be empowered to assess their own situation. We can encourage resilience building among conservationists by supporting individuals in this process of gathering sufficient means to safeguard their energy, positively adapt to adversity, and focus on growth and development (Hobfoll, 2002). Some conservation organisations including The Nature Conservancy and Fauna & Flora International are investing such support for their employees. Support includes access to 'mindfulness' tools, guidance and mentoring with the aim of helping staff to adopt strategies to lead thoughtfully, manage workloads and reduce stress, and enabling them to feel more resilient and self-compassionate in their actions. Supervisors have an important role to play at the individual level, noting employees will each have different requirements to fulfil their needs which only the employee can identify, i.e. they can be situational and dispositional in origin. It is therefore advisable for supervisors to adopt a coaching approach (e.g. asking reflective questions) versus a mentoring approach (e.g. sharing what worked in the past as the 'right' approach).

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At an institutional level, organisations should look to their cultures, norms and values to help facilitate the supportive environment required to foster and embrace personal resilience. One promising approach for organisations to promote employee health and well-being is to actively support employees in identifying, using and developing their unique strengths at work (Meyers et al., 2018). The perceived organisational support for strengths use (POSSU) approach has demonstrated to increase work engagement and satisfaction and decrease burnout across different contexts (Meyers et al,. 2018). Providing employees with sufficient job autonomy is key here as well as a strong and trusting feedback culture that values employee strengths and voices and uses this to foster the growth of individuals, teams, and the organisation (Belhekar et al. 2020; Meyers et al., 2018). Brief strengths interventions can help employees apply their strengths at work, and are found to be effective especially for those employees with lower levels of self-efficacy (van Woerkom & Meyers, 2018). Other people-centred initiatives such as those focusing on equality, diversity and inclusion, and workplace safety (e.g. first aid training, counselling; Belhekar et al. 2020), improved flexible working practices, sufficient off-work recovery and streamlined institutional systems, can all help reduce individual's negative psychological states. Organizations can aid positive outcomes in the workplace (e.g. optimised positive psychological states, work performance, wellbeing and resilience) by 1) reducing stressors that negatively influence their psychological states (e.g. fairness in the workplace), 2) ensuring that unavoidable job demands (e.g. pressing funding deadlines, demanding stakeholders) are met with factors associated with positive psychological states (e.g. recognition and appreciation, coaching), and 3) ensuring that staff are met in their basic needs (e.g. sufficient salary, work-life balance, physical safety in the workplace). Care should be taken that these three approaches are implemented to complement each other.

At a sectoral level, we recommend wider dialogue and lesson sharing on this topic, including integrating learning from other sectors. We should equip current and emerging leaders with the knowledge and tools to value and help support personal resilience. In light of our findings and recent research highlighting professional risks (Belhekar et al. 2020; Moreto, 2016; Spira et al., 2018), we recommend that greater attention is given to the importance and significance of self-care in conservation graduate programmes and the career development of conservation professionals. We hope our study will encourage dialogues on the importance of developing resilience strategies early on in one's career, preferably during one's education, and on pragmatic approaches to prevent and alleviate workplace adversity.

If enabling strategies are supported, and personal resilience levels for conservationists are better nurtured; resulting motivation, energy and optimism in individuals should translate to more effective and timely action for the protection of the planet.

Author contributions

Conceptualisation and design: TL, SB, TH; Data collection, analysis and interpretation: TL; Writing and revision: all authors.

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Conflicts of interest

ES was one of the current study's respondents and is a co-author of the manuscript. No other conflicts of interests exist.

Ethical standards

This research was supported by a Vice Chancellor's Research Scholarship of the University of Kent, Canterbury, UK, and has been approved by the Research Ethics Advisory Group of the School of Anthropology and Conservation, University of Kent (Ref no 0401617). All authors have abided by the Oryx guidelines by following the British Sociological Association Statement of Ethical Practice 2017.

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TABLE 1 Demographic characteristics of twenty-two conservation professionals, across twelve different nationalities, participating in semi-structured interviews in 2017.

Characteristics	Total Sample (n = 22)	Female Professionals (n = 12)	Male Professionals (n = 10)
Demographics			
Average professional experience in years (±1SD)	17.5 (±9.8)	16.1 (±10.1)	19.1 (±9.8)
Average age in years*(±1SD)	41.3 (±9.9)	38.9 (±10.5)	43.3 (±9.5)
Country nationals**	12	7	5
Non nationals	10	5	5
Employer			
University	5	1	4
Students	6	4	2
Non-Governmental Organisation (NGO)	4	3	1
Government	1	0	1
Charitable organisation or trust	2	2	0
Non-Profit corporation	2	2	0
Not-for profit company	2	0	2

*Average age based on 8 female and 10 male professionals (n = 18), ** Country nationals here refer to those interviewees who are nationals of countries with high biodiversity and limited access to informational, financial and human resources.
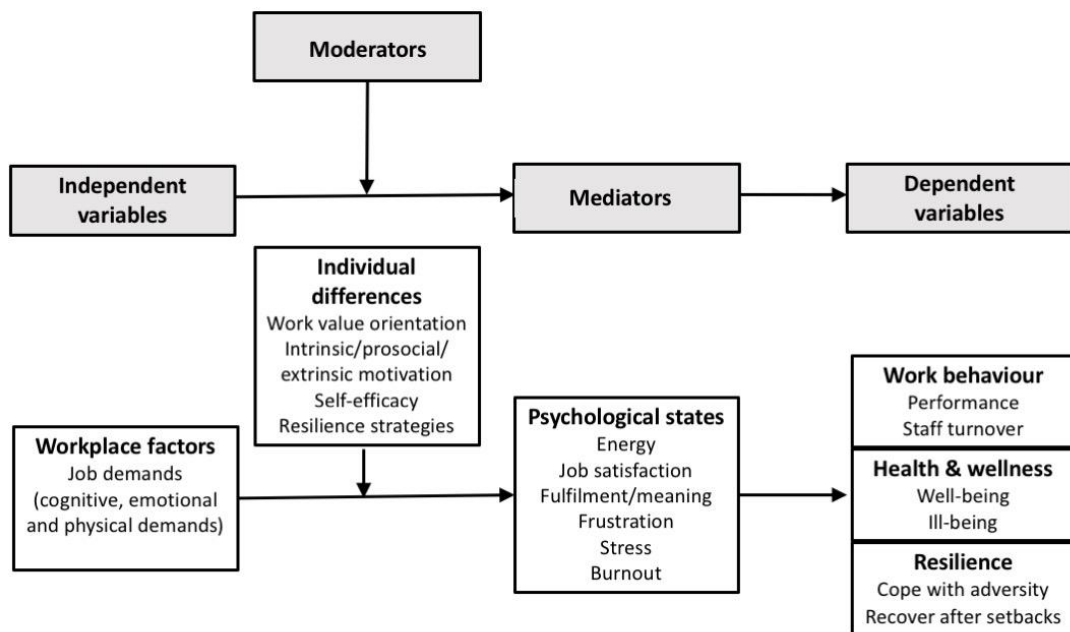
Figure 1: Conceptual model, adapted from Deci et al. (2017), linking workplace factors with individual outcomes (i.e. work behaviour, health and wellness, and resilience) through psychological states. The relationship between workplace factor and psychological states is moderated by individual differences, included resilience strategies.
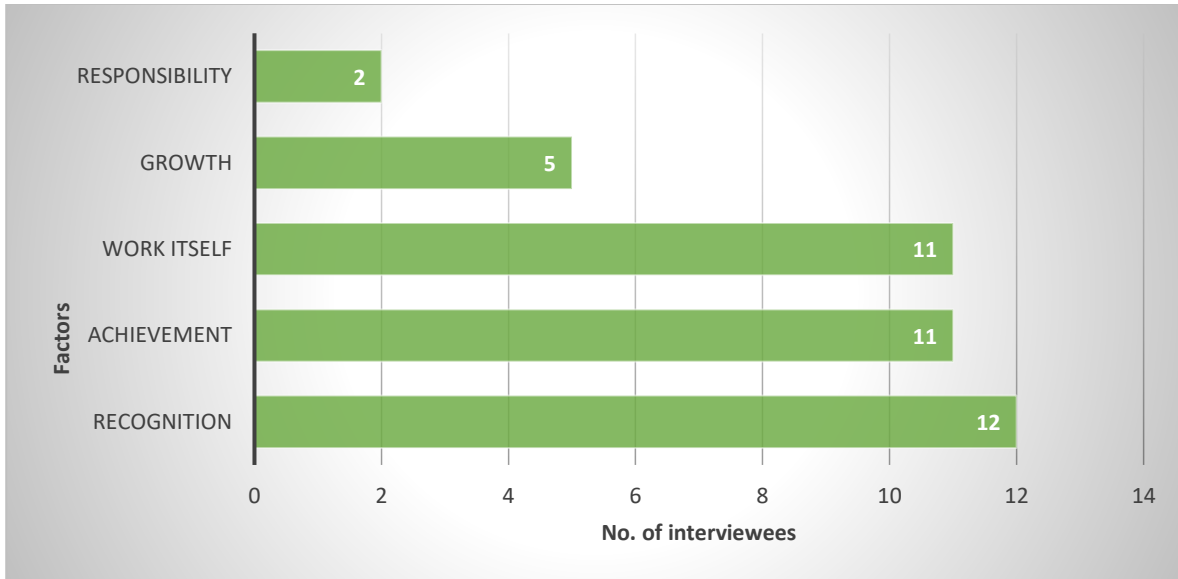
Figure 2: Main factors associated with positive psychological states identified from interviews with 22 conservation professionals.
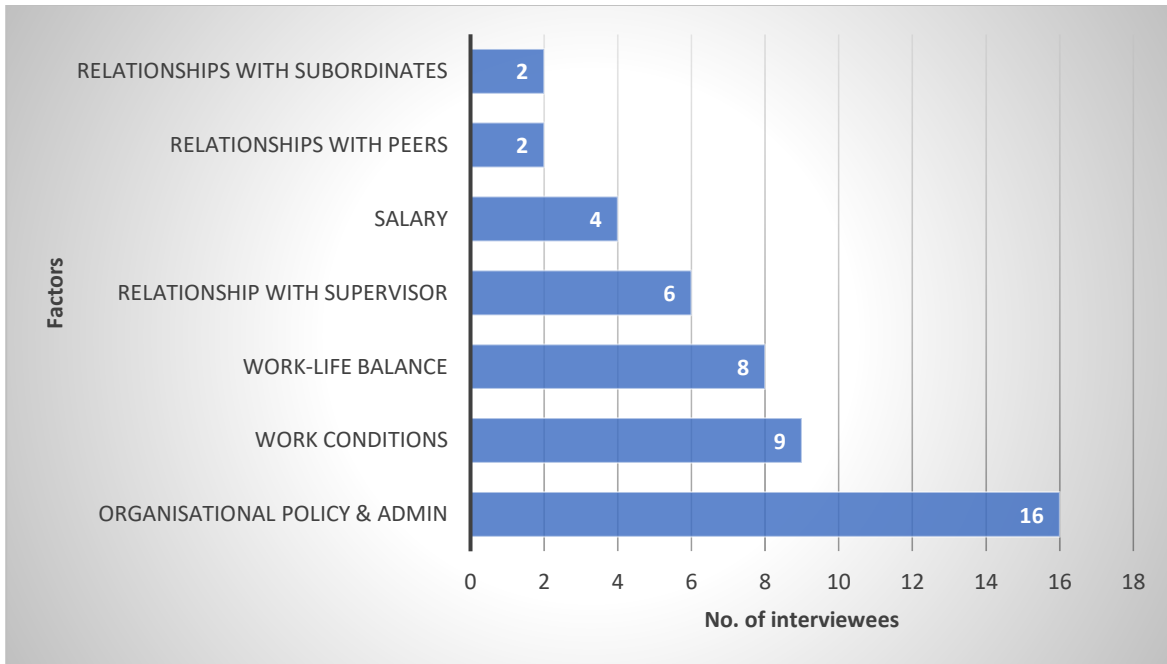
Figure 3: Main factors associated with negative psychological states identified from interviews with 22 conservation professionals.
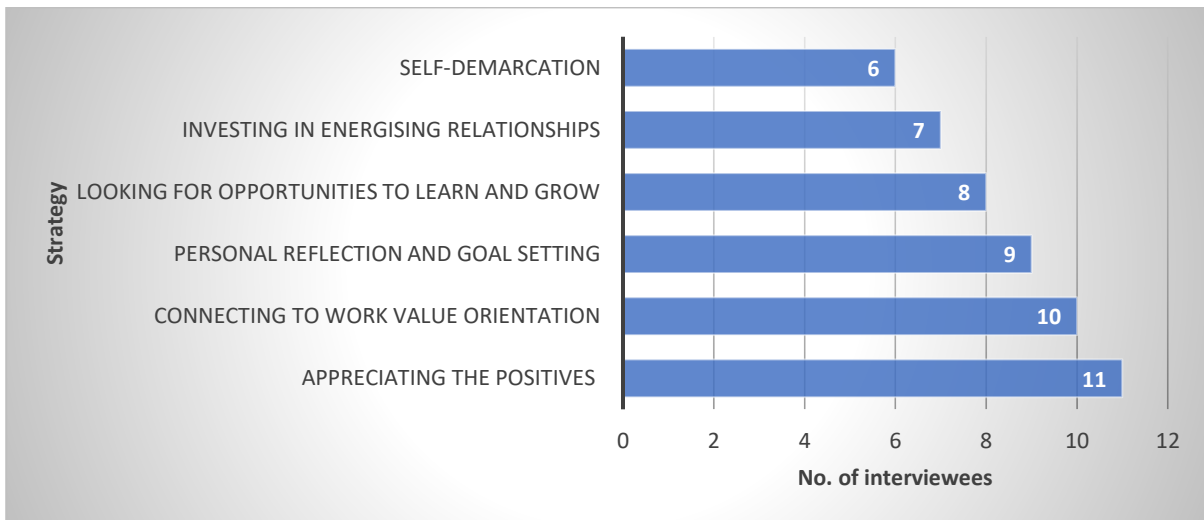

Figure 4: Resilience strategies identified from interviews with 22 conservation professionals

TABLE 5 Quotes from interviews with conservation professionals (n = 22), during March – June 2017, illustrating major themes and example activities indicating resilience strategies related to maintaining motivation at work.

Major theme and example activities	Illustrative quote from interviews
1. Appreciate the positives and maintain optimism	
Actively look for positive stories; learn from work challenges	"I think you need to be optimistic, you need to make sure that you expose yourself to success stories, as well as lessons learned.[..] It might be difficult to maintain motivation knowing that you're only going to be a tiny cog in that huge engine of conservation but that's an important cog." (Respondent 2)
2. Connect to your work value orientation	
Connect to your work value orientation, e.g. visit field sites/nature	"[I] definitely have a passion for conservation, and I have passion for being in the field. [..] Being in the field is very motivating [..] When I track gorillas I get highly motivated, just being there with them that's what it is all about." (Respondent 22)
3. Reflect and set goals	
Create time to evaluate and reflect on (life) goals	"It's good practice to reflect [..] What do I want in 5 or 10 years? [..] You should have a goal in your life [..], it could change but it's good practice to keep you motivated on one side but also [to] keep focussed." (Respondent 8)
4. Look for opportunities to learn and grow	
Research; formal education; study trips; networks	"I get myself motivated by reading a lot. [..] To get ideas. When I took on my new job I realised there was so much I was lacking [..] and then gradually I got sucked into this kind of learning mode." (Respondent 20)
5. Invest in relationships that energise you	
Participate in professional communities	"I was working in a silo. [..] But for me to be able to fit what I do into this network and to share that knowledge [..] I feel like it really has allowed me personally to grow, it allows me to feel more motivated in my work, it allows me to be more open to change." (Respondent 17)
6. Self-demarcation (set professional boundaries)	
Prioritise tasks; select which projects to engage in; limit working hours	"We wanted to support some litigation and it started getting so [..] negative. So we said we will provide you with all the inputs [..] but we are not going to be closely associated because all the lies [..] it drains me." (Respondent 10)