Author's original manuscript for article:
Dobat, A.S., Wood, S.O. Jensen, B.S., Schmidt, S. & A.S. Dobat 2019. "*I now look forward to the future, by finding things from our past…*" Exploring the potential of metal detector archaeology as a source of well-being and happiness. International Journal of Heritage Studies 2019 https://doi.org/10.1080/13527258.2019.1639069

"*I now look forward to the future, by finding things from our past…*" [1]

Exploring the potential of metal detector archaeology as a source of well-being and happiness

Authors: Andres S. Dobat[2], Sultan Oruc Wood[3], Bo Søndergaard Jensen[4], Sören Schmidt[5], Armin S. Dobat[6]

***Abstract*:** *This article presents the results of a questionnaire-based survey of the perceived effects of metal detecting among British Armed Forces veterans with PTSD (Post Traumatic Stress Disorder) and/or other diagnosed or undiagnosed psychological disorders. Although the qualitative analysis presented here is only a first step towards understanding its beneficial effects, the authors conclude that archaeological metal detecting can be regarded as having the potential to positively influence well-being and happiness for people suffering from mental health problems. The findings suggest that practitioners feel that metal detecting has a significantly positive and lasting effect on their health and well-being. A significant number of respondents feel that metal detecting has alleviated specific symptoms of their mental disorders (PTSD, depression, anxiety disorders). The key factors for the beneficial effect of metal detecting appear to be of a mental, sensory, physical and social nature. First and foremost, however, its beneficial effect seems to be deeply rooted in the fact that the participants interact with archaeological heritage.*

Keywords: mental health, therapy, well-being, public archaeology, metal-detecting

Introduction

Dialogue with the archaeological past comes in many different shapes and forms and is driven by a multitude of motivations and goals. One relatively newly evolved avenue is the use of archaeology as a therapeutic tool. This particular use of the past is surprisingly apparent within the growing community of metal detector users. In particular, UK and Danish veterans with mental health impairments such as PTSD (Post Traumatic Stress Disorder) or other diagnosed or undiagnosed psychological problems consciously use metal detecting as a tool for self-therapy and feel that metal detecting alleviates their psychological impairments, or at least contributes positively to mental health and general well-being. The beneficial effect of metal detecting is a well-established concept within metal detector communities, and several community/veteran support groups actively promote and introduce veterans to metal detecting (e.g. Detecting for Veterans; Hampshire History Hunters, Beyond the Beep and others; see also Wood 2019) (Fig. 1). In order to further investigate this particular use of the past and to gain an impression of the potential of metal detecting as a source of well-being and happiness and as an element of mental health recovery, we conducted a questionnaire-based online survey among British Armed Forces veterans who use metal detectors.

[1] 50-year-old male war veteran and survey participant, suffering from PTSD and depression, on the effect of metal detecting.

[2] (Corresponding author) School of Culture and Society, Department of Archeology and Heritage Studies, Aarhus University, Moesgaard Allé 20, 8270 Højbjerg (DK), farkado@cas.au.dk

[3] School of Culture and Society, Department of Archeology and Heritage Studies, Aarhus University, Moesgaard Allé 20, 8270 Højbjerg (DK), sultanoruc28@gmail.com

[4] Clinic for PTSD and anxiety, Veteran Unit, Central Denmark Region, Palle Juul-Jensens Boulevard 175, 8210 Århus N (DK), bojensen@rm.dk

[5] Hochschule Fresenius, University of Applied Sciences, of Lilienstraße 5-9, 20095 Hamburg (D), soeren.schmidt@hs-fresenius.de

[6] Kohlweisslingsweg 7, 24941 Flensburg (D), armindobat@gmx.de

Author's original manuscript for article:
Dobat, A.S., Wood, S.O. Jensen, B.S., Schmidt, S. & A.S. Dobat 2019. "*I now look forward to the future, by finding things from our past…*" Exploring the potential of metal detector archaeology as a source of well-being and happiness. International Journal of Heritage Studies 2019 https://doi.org/10.1080/13527258.2019.1639069

Fig. 1. Briefing of participants at a metal detector charity event on a private estate in Oxfordshire, organised by the 'Detecting for Veterans' initiative and Jason Massey in 2017. None of the individuals in the picture necessarily participated in the study presented here. Used with kind permission from Jason Massey.

Study aims

The wider social value and positive effect of engaging with archaeological practice or the material past in a broader sense is widely acknowledged (cf. Ander et al. 2013; McMillan 2013; Sayer 2015; Finnegan 2016; Kiddey 2017; Bennet 2018; Schaepe et al. 2017; Sayer and Sayer 2016). A growing number of projects, especially in the UK, aim to exploit the therapeutic value of archaeology and its potential as a source of well-being (e.g. Breaking Ground Heritage (http://www.breakinggroundheritage.org.uk/), Waterloo Uncovered (http://www.waterloouncovered.com/), Defence Archaeology Group (http://www.dag.org.uk/).

But it is still not clear why and how and under what particular conditions participation in archaeology may improve life conditions, and what might be the particular contribution of archaeology in this field as compared to other activities. The study presented here aims to contribute to the construction of a methodological framework and an empirical basis for a scientific discussion of the value of archaeology as a means of mitigating symptoms of psychological problems in particular.

The study's more specific objective was to investigate how veterans with diagnosed or undiagnosed mental health issues perceived the effect of metal detecting on their personal health and well-being. More specifically, the survey addressed the following questions:

- Which motivating factors lay behind the engagement of participants in metal detecting and the archaeological past, and which attitudes did they have towards the hobby in general?
- Which specific symptoms of their psychological problems do they feel are alleviated as a consequence of their engagement with metal detecting (assuming that they felt that metal detecting had a positive effect on their personal health and well-being)?
- Is the positive effect of metal detecting limited in time, or does it have a lasting effect and generally improves health and well-being (assuming the same as above)?
- Does an engagement in a specific type of archaeological practice (metal detecting) have special potential as a therapeutic tool?

Author's original manuscript for article:
Dobat, A.S., Wood, S.O. Jensen, B.S., Schmidt, S. & A.S. Dobat 2019. "*I now look forward to the future, by finding things from our past…*" Exploring the potential of metal detector archaeology as a source of well-being and happiness. International Journal of Heritage Studies 2019 https://doi.org/10.1080/13527258.2019.1639069

Fig. 2. Social media/Facebook play a major role in the promotion of metal detecting within the veteran community. This figure shows the logos of two veteran-driven initiatives: Hampshire History Hunters (top) and Detecting for Veterans (bottom), both established in 2017. Used with kind permission from Ad Palmer and Jason Massey.

Metal detecting and detectorists in Britain

Recreational metal detecting, i.e. the use of metal detectors to find archaeological items from all historical periods by non-professionals, has grown significantly in popularity since the 1990s (Ferguson 2016; Lewis 2016). Metal detecting is a broad field, ranging from both the search for antiquities in a local setting over detecting tourism to an occasional beach hunt for lost coins and wedding rings during the bathing season. The metal detecting veteran community in Britain by and large reflects this diversity, with the majority of practitioners being interested in finds and discoveries from all periods of British history (see also survey results on practitioners' attitudes below). In this study, metal detecting is seen as a specific way of engaging with archaeology and history or heritage in a wider sense, and as a practice which is not only very hands-on and practical in nature, but also has an intellectual, emotional and social dimension (Winkley 2016).

Mental health and veteran communities

In this article, a veteran is defined as a person who has served in the armed forces who may have been involved in a military conflict zone. The 2014 Annual Population Survey estimated that there were around 2.6 million UK Armed Forces veterans living in the UK. Of these, over 50% are aged 75 or older (NEL 2016). Public perceptions often equate veterans with mental health impairments. This is based on a misconception, because only a limited – though nonetheless significant – number of veterans suffer from mental health issues. It is widely acknowledged that veterans are more likely to experience common mental health problems such as depression and anxiety disorders than comparable age groups in the general population, and that veterans who have experienced combat in particular are more likely to experience PTSD even years after they have left active service (Bashford et al. 2015; Kang et al. 2019).

Surveying method

The online questionnaire on which this paper is based was aimed at UK Armed Forces veterans who are metal detector users with either undiagnosed or diagnosed mental health problems. The participants had access to the survey through a URL link, and were asked initially to answer a set of questions to make sure they met the survey requirements. The questionnaire was distributed via selected Facebook groups or individuals (see acknowledgements) (Fig. 2). We selected specific groups with a good number of members who we felt would meet our survey criteria (1. veteran, 2. metal detector

user and 3. diagnosed or undiagnosed mental health issues), although none of the groups were limited to persons meeting all the requirements.

The questionnaire was designed to dynamically adapt to the participant's background and earlier responses, not least with respect to each participant's mental health condition and diagnosis. Diagnosis-specific questions incorporated diagnosis-specific symptoms as acknowledged by the ICD-10 (International Classification of Diseases) under the WHO (World Health Organisation).

It needs to be emphasised that the questionnaire involved self-assessment, so it could only produce data on the participants' experiences, feelings and judgements, data which not necessarily reflect any real effect of certain practices or activities on the health of the participants. It is equally important to note that the survey focussed on positive attitudes, which might very well have resulted in a biased reflection of the connotations and emotions surrounding metal detecting. In addition, it can be assumed that the participants had a biased attitude towards the effect of metal detecting. They were already metal-detecting enthusiasts, and were therefore likely to consider themselves ambassadors of the hobby, which very well might have influenced our data. In addition, the limited number of eligible survey participants (n = 42) means that our results do not have sufficient statistical merit; and as our survey did not include a reference group for control, it does not meet the requirements of a clinical study.

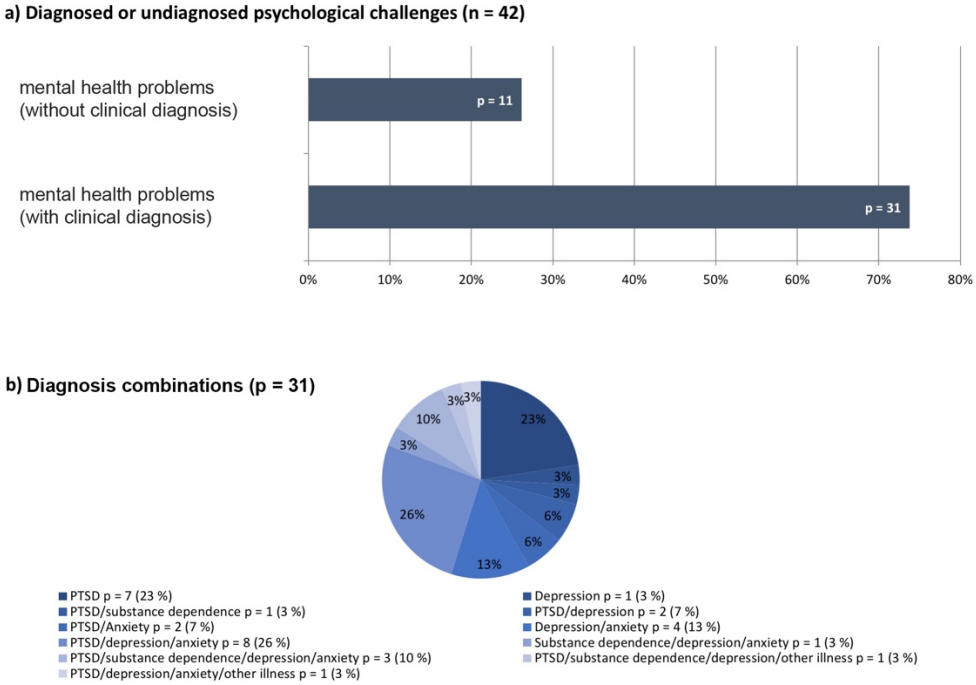

Fig. 3. Background data on the survey participants, including: a) the status (diagnosed or undiagnosed) of their psychological problems (n = 42), and b) combinations of diagnoses among all participants with diagnosed mental health problems (p = 31).

Survey results

Background data

The eligible survey participants (n = 42) were broadly distributed in terms of age, with an average age of 53.6 years. The vast majority (*p* = 40 (95%)) were male. 34 (81%) of the respondents had been deployed in a crisis/combat zone during their active military service. Our results show that apart from being UK Armed Forces veterans and facing mental health issues in various degrees, the majority of the 42 participants were more or less experienced detectorists, with 15 (36%) having detected for more than 5 or even 10 years. 14 (33%) participants had used a detector for more than a year, and 13 (31%) participants had only been detecting for less than a year. The respondents are frequent metal detector users, with the majority (*p* = 17 (41%)) detecting a couple of times a month and some up to two times a week (*p* = 13 (31%).

Author's original manuscript for article:
Dobat, A.S., Wood, S.O. Jensen, B.S., Schmidt, S. & A.S. Dobat 2019. "*I now look forward to the future, by finding things from our past…*" Exploring the potential of metal detector archaeology as a source of well-being and happiness. International Journal of Heritage Studies 2019 https://doi.org/10.1080/13527258.2019.1639069

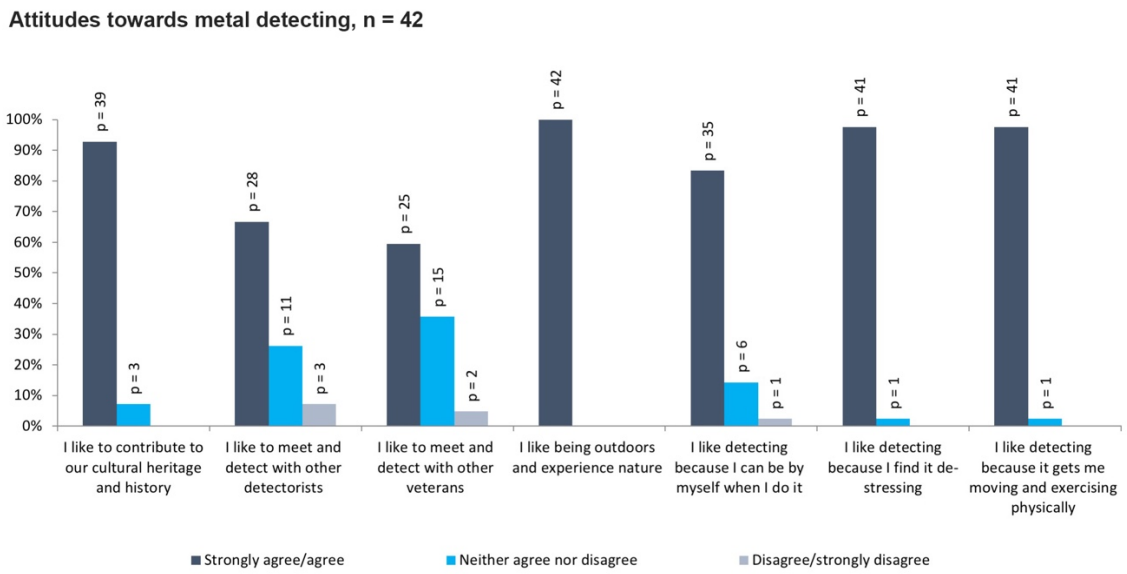

Fig. 4. Attitudes of respondents (n = 42) towards metal detecting, as reflected in their answer to the survey's multiple-choice statements on the topic.

When questioned on the nature of their mental health problems (Fig. 3), a small group of 11 (5%) out of 42 eligible participants said that they had mental health problems without ever having received a clinical diagnosis. 31 (74%) out of 42 eligible participants had a clinical diagnosis. Out of these, 23 (74%) said they had several comorbid diagnoses. The survey differentiated between PTSD (Post Traumatic Stress Disorder), substance dependence (abuse of alcohol/drugs), depression and anxiety, representing some of the most common types of mental health problems among veteran communities (Bashford 2015). All of the 31 eligible participants with clinical diagnoses had either previously been or are currently in psychiatric treatment for their mental health problems.

Attitudes towards metal detecting

Asked for different attitudes towards metal detecting in a multiple-choice question (Fig. 4), a large majority (more than 80% (>34) of the eligible participants (n = 42)) state that they like to contribute to their common heritage and history, they like being outdoors, they find it 'de-stressing', they like being alone when detecting, and they like detecting because they get exercise. Being outdoors, its physical dimension and its 'de-stressing' quality were the most important motivating factors for the participants to engage in metal detecting, followed by a general interest in heritage and history. The attitudes of the participants are more divided when it comes to the social aspect of metal detection. Compared with the unanimously positive attitudes of the participants with regard to all the other themes, only a relatively limited number of respectively 28 (67%) and 25 (60%) participants said that they liked to detect in the company of other detectorists or other veterans, and 3 (7%) and 2 (5%), did not value this particular aspect at all.

The participants were also encouraged to elaborate on their motivations to practise detecting in a free text field. In the survey, the free text field question A: "Please feel free to tell us (in your own words) why you metal detect" was posed in direct continuation of the above-mentioned multiple-choice question concerning the participants' attitudes (see supplemental file: Respondents' free text responses).

The general attitude of the participants towards metal detecting is, unsurprisingly, positive: there are recurring comments about the joy and satisfaction they get from metal detecting, and many participants see metal detecting as a relief from their mental health issues, stating that it reduces their stress levels and increases their concentration and a feeling of worth. Some respondents state that metal detecting gives them an active lifestyle, and some state that they like being outdoors and achieve increased levels of physical strength. Some respondents express the importance of being able to both socialise and be alone and to be able to think out loud while detecting, while some state that they are mainly motivated by their interest in history and in making discoveries. It is worth noting that none of the liable survey participants refers to a 'financial incentive' in the form of treasure (treasure trove) as a motivating factor.

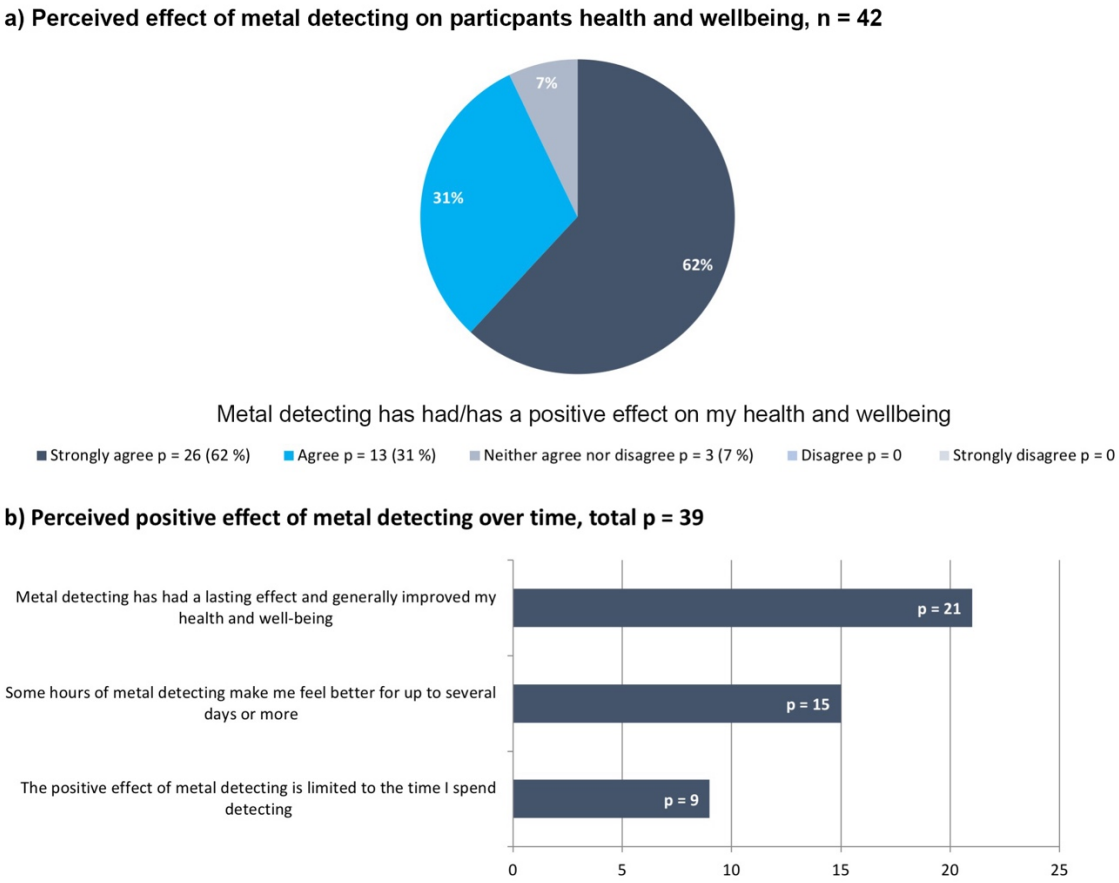

Fig. 5. The effect of metal detecting. A: The perceived effect on participants' (n = 42) health and wellbeing. B: The perceived positive effect over time

Effects of metal detecting on health and wellbeing

A vast majority of the participants (p = 39 (93%)) agree to various degrees that metal detecting has had a positive effect on their health and well-being (Fig. 5). 14 (33%) say that this positive effect lasted several days or more after they had been out metal detecting, and some even said that they had experienced a lasting effect and a general improvement of their health and well-being (p = 20 (47%)). For 9 (20%) respondents the positive effect of metal detecting was limited to the time they spent detecting (Fig. 5). A minority of 3 (7%) participants said that metal detecting did not have a significant effect on their health and well-being.

The survey asked for the perceived effect of metal detecting in relation to specific features and symptoms for respectively PTSD, substance dependence, depression and anxiety disorders (according to ICD-10) (Fig. 6) (Fig. 7). For example, participants who said they had been diagnosed with PTSD as a stand-alone diagnosis (7 (23%)) were asked whether or not metal detecting had a positive effect on: 1. their sleeping patterns, 2. their irritability, 3. their ability to concentrate, 4. their nervousness, 5. their consumption of alcohol and drugs, 6. their relationship to family and friends, and 7. their self-confidence (Fig. 8). A majority of the survey participants agreed (to various degrees and depending on the specific character of their mental health impairments) that metal detecting had a moderating effect on diagnosis-specific symptoms. However, across all the groups metal detecting was not perceived as having a positive effect on the consumption of alcohol and drugs.

In continuation of the last multiple-choice question about the mitigating effects of metal detecting, participants were again asked to comment freely, using their own words (see supplemental file: Respondents' free text responses). Question B: "Please feel free to tell us (in your own words) why and how metal detecting has affected your health and well-being". Although this question allows a broad range of possible answers, there is a strong correspondence between these responses and the responses given to free text question A.

Author's original manuscript for article:
Dobat, A.S., Wood, S.O. Jensen, B.S., Schmidt, S. & A.S. Dobat 2019. "*I now look forward to the future, by finding things from our past…*" Exploring the potential of metal detector archaeology as a source of well-being and happiness. International Journal of Heritage Studies 2019 https://doi.org/10.1080/13527258.2019.1639069

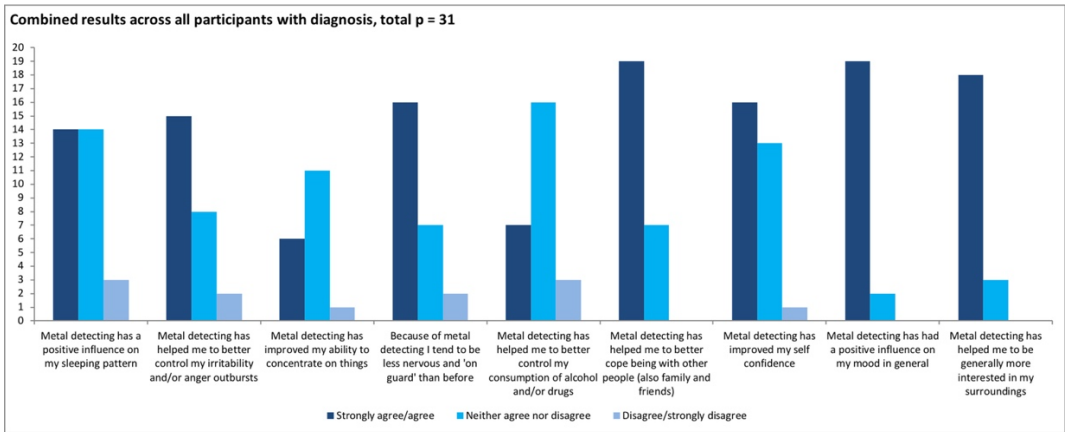

Fig. 6. The perceived alleviating effect of metal detecting in relation to specific symptoms: Combined results *across all participants with a diagnosis* (*p = 31*). *Note that questions 8 and 9 were only presented to participants with a depression diagnosis* (*p = 15*)).

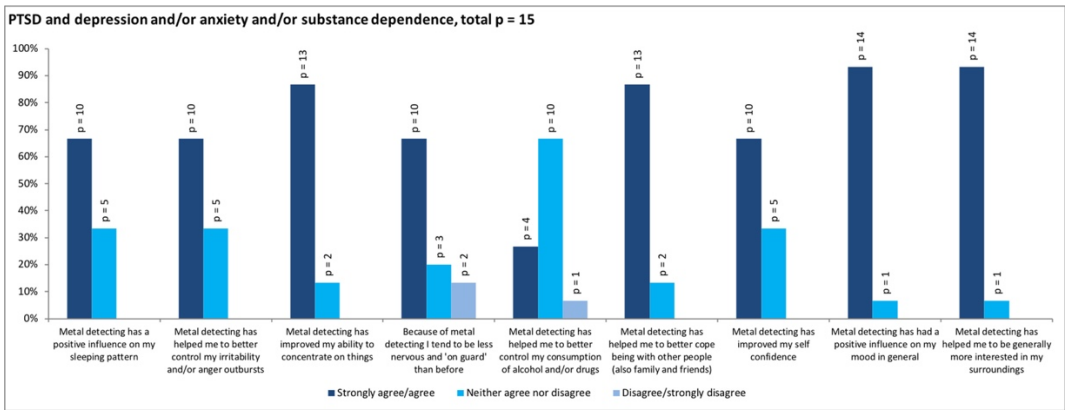

Fig. 7. The perceived alleviating effect of metal detecting in relation to specific symptoms: Results for participants suffering from PTSD in combination with depression, and/or anxiety disorders and/or substance dependence (*p = 15*).

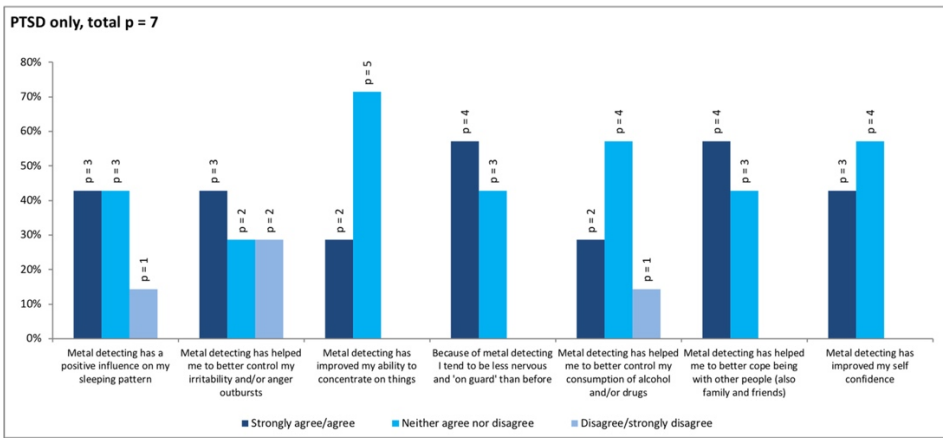

Fig. 8. The perceived alleviating effect of metal detecting in relation to specific symptoms: results for participants suffering from PTSD only (*p = 7*)

Author's original manuscript for article:
Dobat, A.S., Wood, S.O. Jensen, B.S., Schmidt, S. & A.S. Dobat 2019. "*I now look forward to the future, by finding things from our past…*" Exploring the potential of metal detector archaeology as a source of well-being and happiness. International Journal of Heritage Studies 2019 https://doi.org/10.1080/13527258.2019.1639069

	Recurring statements and keywords linked to the specific category:	Referred to in free text field by respondent (RX):
Peace of mind	Reduced stress, relaxation, concentration, focus, mental relief	R1, R3, R5, R6, R7, R8, R10, R15, R16, R19, R20, R21, R22, R24, R26, R27, R28, R29, R31, R36, R37, R39, R40
Outdoor life and exercise	Better physique, increased fitness, open/fresh air, physical activity, nature	R7, R8, R11, R19, R21, R22, R25, R26, R29, R30, R37, R40
Silent companionship	Being present without commitment, engaged in social activities	R7, R12, R16, R18, R22, R26, R33, R35, R37
The thrill of history	Fascination of archaeological/historical finds, interest in history, discovery	R8, R9, R21, R22, R24, R26, R27, R31, R36
Self-esteem	Increased self-worth, sense of purpose, pride, giving back to society, having a goal	R1, R15 R21, R24, R26, R36, R40

Table 1. The five key factors for the perceived beneficial effect of metal detecting and their definitions based on survey participants' free text responses.

Discussion

Based on these responses, five overarching categories of a mental, sensory, physical and social nature can be identified as key factors for the perceived beneficial effect of metal detecting (Table 1). Even though many respondents very explicitly refer to one or several of these key factors in their free text responses, these categories should primarily be seen as an analytical framework and the result of an interpretation of the survey data.

Peace of mind ("*...listening for that all-important bleep*")

A clear majority of 41 (98%) respondents say that the anti-stressful nature of metal detecting is one of the most important motivating factors for engaging in the hobby, and a majority of the respondents' free text comments touch directly on this particular quality. As one participant (R15, a 48-year-old male suffering from PTSD, anxiety disorders and depression) puts it: "detecting takes my mind off the anxiety that ptsd causes", which is representative of other comments regarding the mental experience of metal detecting and why it is perceived as beneficial. An attempt to explain the positive effect of metal detecting is provided by R24, a 44-year-old male suffering from undiagnosed mental health issues, when he states: "it [metal detecting] helps with my deep thoughts in a way of relaxing and taking my mind elsewhere when I'm listening for that all-important bleep..."; or as R29, a 62-year-old male suffering from depression and anxiety, puts it: "I am concentrating both on the ground and the signals I am hearing, taking my mind off my mental problem […]".

Our argument is that the perceived relaxing and anti-stressful quality of metal detecting is due partly to the motoric, sensory and mental experience involved. Practitioners describe the practice as highly meditative, emphasising its special quality in engaging the body's entire sensory apparatus, while at the same time shutting out both internal and external disturbances and influences. While on the one hand it is highly monotonous and repetitive, metal detecting is also a highly demanding practice. The practitioners have to listen very carefully to the detector's varying audio signals indicating finds. Experience and concentration is needed to sort out signals and distinguish between irrelevant finds and finds worth digging for. Normally, metal detectorists wear headphones in order to fully concentrate on the detector's audio signals. This rhythmic and repetitive routine is only interrupted by signals indicating objects that are 'worth digging for': signals that for the practitioner hold the promise of anything between yet another ring-pull or the discovery of a lifetime. Metal detecting can thus be seen as an all-consuming practice, giving practitioners limited time to think or let their thoughts stray. All their focus is on the machine, its display, its signals, the ground and possible finds. This is probably the reason why people with psychological impairments such as PTSD or anxiety disorders might regard metal detecting as particularly beneficial, as it holds the potential to captivate the practitioner's mind.

People suffering from PTSD typically experience unwanted intrusive thoughts or negative thinking, as well as concentration difficulties (ICD10, F43.1; Ehlers 2010). As a form of cognitive regulation strategy, metal detecting might be able to increase the ability to focus and concentrate in a positive way and to give beneficiaries – at least for a while – the chance to escape the web of negative thoughts and emotions in which they are trapped. Similar approaches are applied in acceptance and commitment therapy (ACT), a variant of cognitive behavioural psychotherapy that focuses on

mindfulness and acceptance (Gallagher et al. 2015; Thoma et al. 2015; McLean and Follette 2016). According to ACT's underlying theory, mental health disorders result from attempting to avoid past experience. So, one of the goals of ACT is to develop more accepting, mindful attitudes towards distressing memories and negative conditions rather than avoiding them.

Outdoor life and exercise ("*because it gets me out of the house*")

Basically, all the respondents strongly agree that being outdoors in the natural environment and the physical dimension of metal detecting are a motivating factor (p = 42 (100%) and p = 41 (98%)). Both aspects are emphasised by most participants in the free text responses, with some participants underlining that metal detecting gives them the motivation to leave their homes in the first place. R37, a 53-year-old male with multiple diagnoses who had taken up metal detecting relatively recently, commented that "I never left the house before now". Others focus on physical training, fitness and health, like R9, a 55-year-old male suffering from PTSD and anxiety, who said "Health by activity, you walk miles without realising how far you have walked and also the activity of digging out your finds."

The actual practice of metal detecting involves hours of walking in lines, from one end of an open field to the other; eyes fixed on the detector's digital display, the ground and the detector's search coil, constantly adjusting its movement and height to match the irregularities of the search ground's surface. It is plausible that this highly uniform and meditative movement is one of the reasons why practitioners, and in particular people suffering from PTSD or anxiety disorders, feel that metal detection is anti-stressful and relaxing. On a more general level, the physical dimension of metal detecting and its perceived beneficial effect resonates with the evidence of clinical studies indicating that physical activity has the potential to reduce the symptoms of PTSD and to improve the health conditions that often accompany PTSD, such as anxiety disorders, depression or sleep disturbances, which is a reason why various forms of physical exercise are a constant element of PTSD recovery programmes (VA/DoD 2017; APA 2017; Oppizzi and Umberger 2018).

In the free text responses, the wide-open countryside, nature, fresh air, nature and open air are recurring keywords. This focus on natural, open and green environments resonates with the growing evidence for the beneficial effect of exposure to the natural world and green spaces for mental health, which is increasingly recognised and applied in formal ecotherapy programmes (Bowler et al. 2010; Mind 2013). This gains further significance in the light of one of the typical symptoms of both PTSD and anxiety disorders: apprehension about leaving the safety of your home and entering public spaces, especially unfamiliar ones, often referred to as hyper vigilance or agoraphobia (ICD10, F43.1; Kimble et al. 2013). Even though we lack detailed knowledge of the individual participants' symptoms, for some participants, metal detecting might be a motivating factor helping them to overcome such apprehensions. The fact that it is normally practised in the open countryside and not in an unpredictable urban environment might add to the motivational quality of metal detecting.

Silent companionship ("*It has made me feel part of a team again*")

The responses of the participants vary with regard to their views on metal detecting as a social activity (Fig. 9). Most of the survey respondents mention this particular aspect as key to the perceived beneficial character of metal detecting. Comments such as "It's like having your own family" or "It has made me feel part of a team again" are good examples of this point. Such statements reflect a certain sense of esprit de corps which is naturally found in most avocational niches when people meet to pursue their interests or hobbies. They can also be seen in terms of the significance of comradeship and esprit de corps in the military environment (and the veteran community). For those respondents who underline its beneficial nature, the sense of comradeship they experience within the detecting community and in their relations with other detecting veterans might serve as a civilian version of the kind of comradeship they experienced during military service.

At the same time, the participants emphasise the special character of metal detecting as a non-compulsory social arena, a context which allows the practitioners to remain in control of whether or not they want to engage socially. As two of the survey participants wrote: R47: "Once you've put headphones on and you're in a field or on a beach it's just you!! Even if you're with a group, (…) if you want to stop and chat to someone you can, compare finds, it's not compulsory." The same idea is expressed in the following comment by R40: "Getting outside to enjoy fresh air and a shared experience, even when walking alone for much of the session, but still part of a group with a shared interest." It seems to be the case that this duality of metal detecting as a practice allowing for social contacts to be established while at the same time giving practitioners the freedom of choice whether or not to engage in social relations is regarded as a key factor by respondents. For the practitioners it is clearly important to have a potential safe space in the form of the safety of their headphones, enabling them to retreat into the safety of their own mental bubble if needed.

Fig. 9. The two faces of metal detecting: Top: the solitude of detecting alone, Bottom: detecting as a socially engaging activity. None of the individuals in the pictures participated in the study presented here. Photos used with kind permission from Allan Faurskov (2015).

Some participants explicitly state that metal detecting has helped them to cope with being with other people, such as a comment made by R7, a 57-year-old male suffering from PTSD, depression and anxiety, who states that detecting "encourages me to get out of the house, provides some exercise and helps me maintain my social skills. It helps me to overcome my anxiety about being out in the open and around people." Or a comment made by R37, a 53-year-old male suffering from PTSD, substance abuse, depression and anxiety, who emphasises that "In general metal detecting has made me more communicative, positive and happy".

Research in the role of social support in helping veterans to adjust after deployment and recover from trauma has shown that the support provided by family, friends and the wider community is vital. Metal detecting can therefore be regarded as a tool to facilitate perceived social support, thereby promoting better mental health (Herman, 1997; Naparstek, 2004; Sherman et al. 2005). Seen in this light, metal detecting can be considered a potential catalyst enabling people with mental health problems to overcome the kind of obstacles that make it difficult to engage socially. In other words, the safe space of the detector's headphones and the potential retreat into the open landscape constitute a specific social context that allows people suffering from fears of social situations to connect with other like-minded people.

The thrill of history ("*I found that, me and me only*")

Many of the respondents refer to the historical dimension and the thrill and excitement of finding historical artefacts as one of the primary motivations for them to engage in metal detecting. Metal detecting obviously evokes a sense of excitement, discovery and adventure, which for many constitute the basic appeal and meaning of archaeology (Holtorf 2005). For some respondents, however, it is not only about this purely emotional 'thrill of the hunt', but also about the more intellectual dimension of researching on and learning about their finds and their cultural and historical implications. The free text responses show that the respondents use metal detecting as a means to enter into a creative(!) dialogue with the past. As material anchors, their finds provide a very direct connection to the past and allow practitioners to intimately connect with their heritage. The following statement by R31, a 61-year-old male suffering from PTSD, depression and anxiety, demonstrates this point because it covers both the emotional and the intellectual dimension of archaeological discovery: "It stretches both reality and fantasy of thought. What did they look like? What were they wearing? What were they doing here? Just so many alternatives and reasoning to entice and educate the mind with all the different

permutations." It may also be the case that archaeological finds enable veterans in particular to connect with other soldiers across time and historical periods (artefacts which in one way or the other relate to military conflicts or the life of a soldier are among the most frequent artefact types retrieved by detectorists).

Many of the respondents explicitly link notions of thrill and excitement but also discovery and curiosity with the perceived mitigating effects of metal detecting. As one of the participants, R25, puts it in his comment: "It gives me that relaxing break of freedom and self-worth when you find something... it's like, I found that, me and me only." This aligns with more general theories of the potential of archaeological practice as a source of well-being and happiness and a catalyst for personal development. As summarised by Sayer (2015), the practice of archaeology is rooted in a set of culturally attributed values of the material remains of the past. It is through these values that involvement in the full sensory and intellectual experience of archaeology may create emotions of belonging and a feeling of existence for people in the presence, which in turn create connectivity and well-being. A growing body of data proves that participation in archaeological excavations or other forms of archaeological practice can result in improved well-being and happiness - not only on a physical and a social level, but also in terms of the personal satisfaction that is linked directly with the notion of discovery of artefacts (Sayer 2015; Schaepe et al. 2017).

To gain further knowledge about detector finds and their cultural-historical implications features central in many of the participants' comments and keywords such as learning, education and/or researching appear in several responses. As two of the survey participants write: "I enjoy learning about the history of our country throughout the ages ... Enjoy finding, researching and donating finds" [R26: 71-year-old male suffering from undiagnosed mental health issues], or "I metal detect to reduce my stress levels and to find tangible history. I love the research of both locations and coins and artefacts I discover." [R36: 50-year-old male, suffering from PTSD and depression]. This focus on the educational dimension of metal detecting resonates with the concept of lifelong learning, and the evidence for the positive effects of an engagement in educational activity on individual well-being and resilience. As summarised by Hammond (2004), research into the 'soft' outcomes of learning suggests that it can develop a number of psychosocial qualities including self-esteem, self-efficacy, self-understanding, communication skills and not least a sense of belonging to a social group. These qualities may in turn promote attitudes, practices and life circumstances that are conducive to positive health and even can have an effect on recovery from mental health difficulties.

Fig. 10. Typical situation at a metal detector session on discovery of a notable find, illustrative of the possible factors underlying the perceived positive effect of metal detecting for the participants' sense of selfesteem and self-efficacy (success, recognition and a sense of purpose). None of the individuals in the picture participated in the study presented here. Photo used with kind permission from Allan Faurskov (2015).

Self-esteem ("*that relaxing break of freedom and self-worth...*")

One of the widely documented outcomes of learning, as pointed out above, is an increased sense of self-esteem and self-efficacy, i.e. a feeling of value and belief in the ability to control events in one's lives which have significance (Hammond 2004). A clear majority of respondents state that metal detecting has improved their self-confidence in terms of having gained a sense of worth, pride and purpose, having a new goal in life, and having a general feeling of confidence and achievement. One respondent's comment encapsulates this very well. R1 writes that "My finds give me something to share with others and focus my head into researching items. Or researching for others especially at low or even suicidal episodes the distraction and feeling of worth to someone helps and also engage (and) help others in the hobby and new detectorist help starting up! It gives me purpose to carry on and live my life" (R1: 57-year-old man who suffers from depression and anxiety). In the participants' free text responses, the perceived positive effect of metal detecting in their sense of self-esteem and self-efficacy seems to be related with and partly based on three main aspects: 1) the success of finding historical artefacts, 2) the recognition of their finds and their knowledge by fellow detectorists and the public, and 3) a sense of purpose and responsibility with regard to their finds and the wider community.

The respondents' focus on the issue of self-worth gains particular significance in light of the evidence revealing large fluctuations in self-image, including low self-esteem and even feelings of guilt and shame among veterans with psychological problems (Kashdan et al. 2006). We argue that the perceived increase in self-esteem and self-efficacy may be rooted in a) the culturally attributed values of the material remains of the past, i.e. the widespread consensus that artefacts from the past are important elements of a shared heritage and hence valuable and worthy of peer and public recognition, and b) the self-empowering nature of metal detecting, giving practitioners the unique possibility of an independent and hands-on interaction with history as opposed to the passive consumption of historical narratives presented by experts in museums or other media.

In this light, metal detecting can be seen as a source of cultural capital with the potential of imbuing practitioners with a sense of self-esteem and self-efficacy (Fig. 10). It is also important that the idea that metal detecting contributes to our shared heritage and hence the wider community is constantly being supported by the intensive media coverage of more or less significant discoveries made by metal detectorists. Put in a nutshell, metal detecting provides the chance to escape the role of the veteran and objectified victim and to build a new and more positive identity.

In the treatment of chronic PTSD, prolonged exposure therapy (PE) as a form of cognitive-behavioural therapy (CBT) has proved to be highly effective and is strongly recommended by both the APA and VA/DoD guidelines for the treatment of PTSD (VA/DoD 2017; APA 2017). This form of therapy is characterised by two main treatment procedures: imaginal and in vivo exposures (1: imaginal exposure = repeated, deliberate retelling of the trauma memory and processing cognitions and emotions related to the trauma memory; and 2: in vivo exposure = gradually confronting situations, places and things that are reminders of the trauma or feel dangerous, despite being objectively safe). Studies of temporal change in posttraumatic cognitions and PTSD symptom severity during treatment with PE have shown that reductions in negative cognitions about the self and the world are mechanisms of change in PE (Kumpula et al. 2016; Watkins 2018). In light of these therapeutic approaches, one could argue that metal detecting is a form of in vivo exposure through which beneficiaries gradually learn that it is not dangerous to be on an open field, and that they do not always have to be on guard. In addition, metal detecting could contribute to the feeling of self-competence and therefore to the reduction of negative feelings about the self. So metal detecting could be an alleviating factor in recovery from trauma.

Conclusions

Based on the quantitative and qualitative responses of 42 liable survey participants, we can conclude that veterans with diagnosed and undiagnosed mental health problems perceive metal detecting as having a beneficial effect on their health and well-being. A clear majority perceive the positive effect of metal detecting as being not only limited to the time they spend detecting. They also feel that it has a good effect on their health and well-being in general.

A majority of the survey participants agree (to various degrees and depending on the specific character of their mental health problems) about the moderating effects of metal detecting on a number of diagnosis-specific symptoms of their psychological problems.

The participants attribute the positive effect of metal detecting to a broad range of factors, all relating to the mental, sensory, physical and social experience of metal detecting. As a result of an analysis of participants' free text responses to recurring themes and topics, five key factors can be identified: a) peace of mind, b) outdoor life and exercise, c) silent companionship, d) the thrill of history, and finally e) self-esteem.

1 Connect… (with the people around you) *R25: it has made me feel part of a team again'* *R5: 'it's like having your own family. You could call it a bit like a regiment with banter'*
2 Be active… (Go for a walk. Step outside) *R11: 'I metal detect because it gets me out of the house'* *R26: 'I benefit very much from the exercise, walking, digging, bending, kneeling etc.'*
3 Take notice… (Be curious. remark on the unusual. Reflect on your experiences) *R31: 'it stretches both reality and fantasy of thought What did they look like? what were they wearing? what were they doing here?'* *R36: 'the sense of anticipation and discovery (…) lets my mind go to a better place'*
4 Keep learning… (Try something new. Rediscover an old interest) *R26: 'I enjoy learning about History of our country throughout the ages'* *R35: 'it's such a fascinating hobby, I've been involved with some fantastic finds'*
5 Give… (Volunteer your time. Join a community group) *R1: 'to help others in the hobby and new detectorist help starting up! It gives me purpose to carry on and live my life'* *R39: 'I now run a club as well that keeps me busy'*

Table 2. The NEF's 'Five Ways to Wellbeing' key actions (Aked et al. 2008), and the metal detecting experience as reflected in the comments of participants.

The majority of these key factors resonate with general markers and indicators of personal well-being and happiness, e.g. the New Economics Foundation's (NEF) 'Five Ways to well-being' concept (Aked et al. 2008). There is a high level of correspondence between the key actions identified as generally improving people's well-being and the basic characteristics of metal detector archaeology, as described by survey participants (Table 2).

The key factors identified above also constitute central issues within the broad field of mental health recovery, as mental focus or mindfulness, physical activity in nature, social relationships and the building up of a sense of self-esteem are typical cornerstones in many mental health recovery and/or resocialisation programmes, targeting for example beneficiaries suffering from PTSD or anxiety (e.g. VA/DoD 2017; APA 2017).

In accordance with other work on archaeology's potential as a source of well-being (cf. e.g. Sayer 2015; Finnegan 2016), our research highlights the ability of metal detector archaeology to enable people to connect, be active, take notice, learn and give, all of which are believed to be the building blocks for greater well-being and personal happiness. Against this background, we suggest that the survey results indicate not merely a perceived positive effect, but that metal detecting may in fact have a real potential to positively influence well-being and personal happiness, in particular for people suffering from mental health problems such as PTSD, depression and/or anxiety disorders. Its positive effect can be attributed to the special (and in this combination unique) qualities of metal detecting:

- the combined mental and sensory experience of metal detecting as an all all-consuming practice, giving practitioners a sense of peace of mind and the chance to relax and avoid negative thinking - at least for a period of time
- its physical dimension as a form of (moderate) exercise in nature and green open landscapes
- its special quality as a social arena offering (non-compulsory) companionships with other detectorists - it does not necessarily demand a high degree of social interaction or commitment, thanks to the focus on detecting and the opportunity for each practitioner to retreat into the personal safe space of their headphones
- its potential as a source of increased self-esteem when you discover historical artefacts and gain the recognition and acknowledgment of your fellow detectorists and the public

However, specifically, the beneficial effect of metal detecting seems to be rooted in active engagement in the process of archaeology because metal detecting does not only involve the thrill of discovery. For practitioners, metal detecting seems to have the potential to trigger curiosity and reflections and to create emotions of belonging and connectivity. In addition, the attributed value of historical objects as elements of a national heritage confers a wider responsibility with regard to

the shared (national) heritage on the finder. Hence, the independent and hands-on interaction with the past constitutes a potential source of cultural capital that clothes the practitioner in a new and constructive identity as a creative contributor to cultural heritage and the common good. In other words, metal detecting may support the growth of positive personal attributes, which may result in an increased sense of well-being and which might even help people in their recovery from mental traumas. Above all, however, it gives practitioners suffering from mental wounds the chance to escape the role of an objectified victim and build a new and more self-reliant identity.

Acknowledgments

This paper, and the survey on which it is based, would not have been possible without the kind contribution of many people. We want to express our gratitude to the following individuals for ideas, guidance, help and critique, and for introducing us to the right people or giving us access to their forums or groups on Facebook: Richard 'Dickie' Bennett (Breaking Ground Heritage), Jason Massey (Detecting for Veterans), Ad Palmer (Hampshire History Hunters), Rob Carr (UK Metal Detecting), Sharon McLennan (Beyond the Beep Scotland Open Group), and Martin McConnell (Supporting Ex Forces Families with PTSD). We also want to express our sincerest gratitude to Marie Larsen for her insight and kind help.

References

Ander, E., L. Thomson, G. Noble, A. Lanceley, M. Usha, and H. Chatterjee 2013. "Heritage, health and well-being: assessing the impact of a heritage focused intervention on health and well-being." *International Journal of Heritage Studies* 19 (3): 229-242. https://doi.org/10.1080/13527258.2011.651740

Aked, J., N. Marks, C. Cordon, and S. Thompson 2008. *Five ways to well-being: A report presented to the Foresight Project on communicating the evidence base for improving people's well-being*. London: nef. https://b.3cdn.net/nefoundation/8984c5089d5c2285ee_t4m6bhqq5.pdf

APA (American Psychological Association) 2017. *Clinical Practice Guideline for the Treatment of Posttraumatic Stress Disorder (PTSD) in Adults*. Washington: American Psychological Association. https://www.apa.org/ptsd-guideline/ptsd.pdf

Bashford, J., C. Collins, S. Hasan, and K.K. Patel Lord of Bradford 2015. *Call to Mind: A framework for action. Findings from the review of veterans and family members mental and related health need assessments (Final report october 2015)*. London: Community Innovations Enterprise on behalf of the Forces in Mind Trust and NHS England. https://www.fim-trust.org/wp-content/uploads/2015/10/CALL-TO-MIND-REPORT.pdf

Bennett, R. 2018. "Saving Lives: Breaking Ground Heritage." *British Archaeology* 2018(July/August): 50-55.

Bowler, D.E., L.M. Buyung-Ali, T.M. Knight, and A.S. Pullin 2010. "A systematic review of evidence for the added benefits to health of exposure to natural environments." *BMC Public Health* 10(456): 1-10. https://doi.org/10.1186/1471-2458-10-456

Ehlers, A. 2010. "Understanding and treating unwanted trauma memories in posttraumatic stress disorder." *Journal of Psychology* 2010 (218): 141-145. https://doi.org/10.1027/0044-3409/a000021

Ferguson, N. 2016. "Lost in Translation: Discussing the Positive Contribution of Hobbyist Metal Detecting." *Open Archaeology* 2(1): Retrieved 22 Mar. 2019. https://doi.org/10.1515/opar-2016-0008

Finnegan, A. 2016. "The biopsychosocial benefits and shortfalls for armed forces veterans engaged in archaeological activities." *Nurse education today* 47: 15-22. https://doi.org/10.1016/j.nedt.2016.03.009

Gallagher, M.W., J. Thompson-Hollands, M.L. Bourgeois, and K.H. Bentley 2015. "Cognitive behavioral treatments for adult posttraumatic stress disorder: Current status and future directions." *Journal of Contemporary Psychotherapy* 45(4): 235-243. https://doi.org/10.1007/s10879-015-9303-6

Hammond, C. 2004. "Impacts of lifelong learning upon emotional resilience, psychological and mental health: fieldwork evidence." *Oxford Review of Education* 30: 551–568. https://doi.org/10.1080/0305498042000303008

Herman, J. 1997. *Trauma and recovery*: *The aftermath of violence from domestic abuse to political terror*. New York: Basic Books.
Holtorf, C. 2005. *From Stonehenge to Las Vegas*. *Archaeology as Popular Culture*. Walnut Creek: Altamira Press.

Kang, B., Xu, H.,and E.S. McConnell 2019. "Neurocognitive and psychiatric comorbidities of posttraumatic stress disorder among older veterans: A systematic review." *International Journal of Geriatric Psychiatry* 34(4): 522-538. https://onlinelibrary.wiley.com/doi/full/10.1002/gps.5055

Kashdan, T.B., G.M. Uswatte, F. Steger, and T. Julian 2006. "Fragile self-esteem and affective instability in posttraumatic stress disorder." *Behaviour Research and Therapy* 44(11): 1609-1619. https://doi.org/10.1016/j.brat.2005.12.003

Kimble, M., K. Fleming, and K. Bennion 2013. "Contributors to Hypervigilance in a Military and Civilian Sample." *Journal of Interpers Violence* 28(8): 1672-1692. https://doi.org/10.1177/0886260512468319

King's Centre for Military Health Research 2018. *The mental health of the UK armed forces*. London: King's Centre for Military Health Research.
https://www.kcl.ac.uk/kcmhr/publications/reports/files/Mental-Health-of-UK-Armed-Forces-Factsheet-Sept2018.pdf.
Retrieved 20 March 2019.

Kumpula, M., K. Pentel, E. Foa, N.J. LeBlanc, E. Bui, L. McSweeney, K. Knowles, H. Bosley, N. Simon, and S. Rauch 2016. "Temporal Sequencing of Change in Posttraumatic Cognitions and PTSD Symptom Reduction During Prolonged Exposure Therapy." *Behavior Therapy* 48: 156-165. https://doi.org/10.1016/j.beth.2016.02.008

Oppizzi, L.M., and R. Umberger 2018. "The Effect of Physical Activity on PTSD." *Issues in Mental Health Nursing* 39(2): 179-187.https://doi.org/10.1080/01612840.2017.1391903

Lewis, M. 2016. "A Detectorist's Utopia? Archaeology and Metal-Detecting in England and Wales." *Open Archaeology* 2(1). Retrieved 11 Dec. 2018. https://doi.org/10.1515/opar-2016-0009

McLean C, and V.M. Follette 2016. "Acceptance and commitment therapy as a nonpathologizing intervention approach for survivors of trauma." *Journal of Trauma Dissociation* 17(2): 138-50. https://doi.org/10.1080/15299732.2016.1103111
McMillan, I.J. 2013. "Making a Mark on History with the Past in Mind." *Mental Health and Social Inclusion* 17(4): 195–201. https://doi.org/10.1108/MHSI-08-2013-0031.

Mind 2013. *Feel better outside*, *feel better inside*: *Ecotherapy for mental wellbeing*, *resilience and recovery*. London: Mind. https://www.mind.org.uk/media/336359/Feel-better-outside-feel-better-inside-report.pdf

Naparstek, B. 2004. *Invisible heroes*: *Survivors of trauma and how they heal*. New York: Bantam Books.

NEL (NEL Commissioning Support Unit) 2016. Developing mental health services for veterans in England engagement report. London: NHS England. https://www.england.nhs.uk/commissioning/wp-content/uploads/sites/12/2016/09/veterans-mh-services-engagement-rep.pdf

Sayer, D and F. Sayer 2016. "Bones without barriers: the social impact of digging the dead." In Archaeologists and the Dead: Mortuary Archaeology and Contemporary Society, edited by H. Williams, M. Giles, 139-167. Oxford: Oxford University Press.

Sayer, F. 2015. "Can digging make you happy? Archaeological excavations, happiness and heritage." *Arts and Health*: *An International Journal for Research*, *Policy and Practice*. 7(3): 247-260. https://doi.org/10.1080/17533015.2015.1060615

Schaepe, D. M., B. Angelbeck, D. Snook, and J.R. Welch 2017. "Archaeology as Therapy: Connecting Belongings, Knowledge, Time, Place, and Well-Being." *Current Anthropology* 58(4): 502-533. https://doi.org/10.1086/692985

Sherman, M. D., D.K. Zanotti, and D.E. Jones 2005. "Key elements in couples' therapy with veterans with combat-related posttraumatic stress disorder." *Professional Psychology*: *Research and Practice*, *36*(6): 626-633. https://doi.org/10.1037/0735-7028.36.6.626

Thoma, N., B. Pilecki, and D. McKay 2015. "Contemporary cognitive behavior therapy: A review of theory, history, and evidence." *Psychodynamic Psychiatry* 43(3): 423-62. https://doi.org/10.1521/pdps.2015.43.3.423

VA/DoD (Veterans Affairs/Department of Defense) 2017. Clinical Practice Guideline for the Management of Posttraumatic Stress Disorder and Acute Stress Disorder (Version 3.0). Washington: Department of Veterans Affairs Department of Defense. https://www.healthquality.va.gov/guidelines/MH/ptsd/VADoDPTSDCPGFinal012418.pdf

Watkins, L., K. Sprang, and B. Rathbaum 2018. "Treating PTSD: A Review of Evidence-Based Psychotherapy Interventions". *Frontiers in Behavioral Neuroscience*. 12:258. https://doi.org/10.3389/fnbeh.2018.00258

Winkley, F. 2016. "The Phenomenology of Metal Detecting: Insights from a Unique Type of Landscape Experience." *Papers from the Institute of Archaeology* 25(2): p.Art. 13. DOI: http://doi.org/10.5334/pia.496

Wood, S.O. 2019. "Therapy and well-being in Archaeology." Master thesis, Aarhus University.