Into Nature

Carina Ribe Fernee

Into Nature

A Realist Exploration of Wilderness Therapy

in Adolescent Mental Health Care in Norway

Doctoral Dissertation

UNIVERSITETET I AGDER

University of Agder
Faculty of Health and Sport Sciences

SØRLANDET SYKEHUS

Sørlandet Hospital
Department of Child and Adolescent Mental Health

2019

To

George

Sara

Oliver

—and the adolescent participants
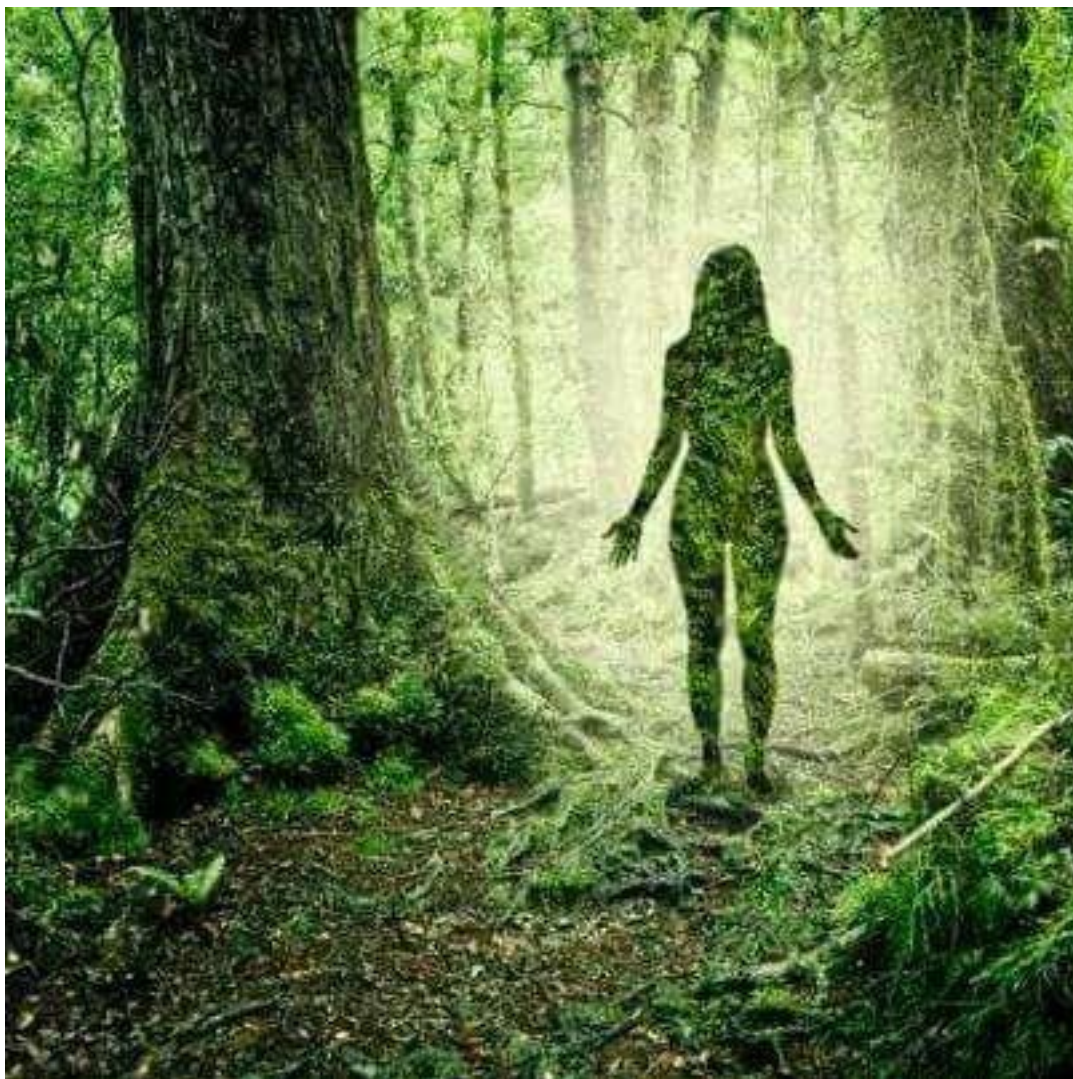
Art Credit: Unknown

The Journey

One day you finally knew
what you had to do, and began,
though the voices around you
kept shouting
their bad advice
though the whole house
began to tremble
and you felt the old tug
at your ancles.
'Mend my life!'
each voice cried.
But you did not stop.

You knew what you had to do,
though the wind pried
with its stiff fingers
at the very foundations
though their melancholy
was terrible. It was already late
enough, and a wild night,
and the road full of fallen
branches and stones.

But little by little,
as you left their voices behind,
the stars began to burn
through the sheets of clouds,
and there was a new voice,
which you slowly
recognized as your own,
that kept you company
as you strode deeper and deeper
into the world,
determined to do
the only thing you could do
determined to save
the only life you could save

—Mary Oliver (1986), *Dream Work*

Contents

Acknowledgments

The opening poem, *The Journey* by Mary Oliver, is a reference to the rough path the adolescent participants in this study are, or have been, navigating through shorter or larger parts of their lives. At the time of writing I look back on another journey, the PhD path, which indeed has challenged me countless times over the last few years. Thankfully I have not been on this journey on my own. In fact, I think I have not once felt alone. Discouraged, insecure, overwhelmed, and anxious time and time again, but never alone. I have felt pretty damn smart a few times too, but for the most part constantly reminded of, and humbled by, the limitations of my capacity and knowledge. Patiently and invariably impatiently trying to maintain peace of mind, minimize stress, and one step at a time steadily coming closer to the destination. Where to? Towards a finish line in one sense in terms of hopefully completing a PhD. However a title or another degree was never the motivating factor. In fact I rather dreaded that, because in my experience titles could create distance. Growing up in the countryside, we did not necessarily admire people of rank; perhaps having one too many an experience of people *with* title behaving 'entitled'. Rather, the journey–or the inquisition and learning–were the goals in and of itself. My curiosity and passion were my driving forces. All along my heart beat for the many adolescents that I had crossed paths with over the years. These wonderful and strong, yet fragile, human beings who had so many odds against them, however still managed to keep breathing, sometimes getting up, sometimes not. For the *adolescent participants* that I met through this study in particular: thank you from the bottom of my heart!

Rewinding back to the summer of 2003 I had just finished my BSc in nursing at the University College of Bergen, when I was employed through a phone call with the lovely *Vigdis Flagtvedt Jensen* to start working as a summer temp in the Department of Child and Adolescent Mental Health (Abup) at Sørlandet Hospital in Kristiansand, Norway. Only interrupted by a few stays abroad that included completing my MSc in Culture and Health at the University College London in 2008, I have remained at Abup ever since. Thank you to all the *big-hearted colleagues* I have had the pleasure of working along with over the years; first in the inpatient ward, next in the acute and ambulatory services, and finally in the research unit as this PhD journey began.

Continuing with the University of Agder 'camp', I would first like to thank *Kjell Kristoffersen*, *Eli Andås*, *Elling Tufte Berre* and *Åshild Slettebø*. Also thank you to all the lovely PhD students I have had the pleasure of crossing paths with over these last few years, and thank you, *Rune Brynhildsrud,* for IT assistance in the final stage.

My supervisor from the faculty, *Anders Johan Wikstrøm Andersen*, you have been a steady source of support and encouragements throughout this journey. I particularly appreciate your warm smile, combined with a nuanced and critical perspective on my work, which both has been greatly appreciated. Thank you, Anders!

Over the years we have established a friluftsterapi team consisting of devoted, hardworking, and fun clinicians and researchers, whom I appreciate greatly, in particular *Vibeke Palucha, Gunnar Oland Åsen, Martin Hirte*, *Andreas Koksvik*, and *Leif Torvald Eskedal*. I would also like to thank our partners in Kristiansand Municipality, *Jarle Føreland*, *Janne Rommetveit*, *Leif Roar Kalleberg*, *Olaf Haugen*, and *Len Atkinson* from University of Agder.

This research project has taken me on multiple shorter and longer journeys not only into nature, but also across the globe, and I have had the pleasure of meeting so many passionate, nature-loving human beings. There are too many to name, so this is a general expression of gratitude to the *international adventure therapy community* for having provided inspiration, knowledge, and memorable moments throughout this journey. The last couple of years I have also been introduced to colleagues in the other Nordic countries, which evolved into a *Nordic Outdoor Therapy Network*. I look forward to cooperating more with you over the years to come!

The overall journey, which is my life, has thankfully involved much more than research and work, but also friends, free time, and family. I have always been blessed with amazing friends and I cannot thank you enough for being goofy with me, cheering for me, looking out for me, listening to me, and for being so sweet and unconditionally reliable, *Mette&Fredrik, Elisabeth&Sindre, Hilde&Marco, Trond&Merethe*, you absolutely rock my world!

I would also like to thank three fabulous women that I have kept in touch with ever since the student years in Bergen, *Haukelandssøstrene:Jorunn,Borgny&Hanne,* I love our weekend get-aways!

I will also take the opportunity to thank inspiring friends from the student years in the UK, in particular *Nour&Mubeen*, *Bikash*, *Becky*, *Farzana*, *Ritgak, and Francesca*.

Knitting is good for the brain, and so is eating lots of chocolate while you are at it, *Kvinner med pinner:Hilde,Vibeke&Hege*, there's never a dull Friday when I am around you, lovely ladies!

Exercise is also good stuff and I particularly would like to thank *Innebandygjengen*, whom I have played indoor bandy with numerous Monday evenings throughout these years. And also my training partners *The Dance Crew* and *PT Diddy* for so many laughs and aching muscles, and for keeping me relatively sane and balanced.

My dear family, I particularly wish to thank my parents, *ThorEinar&Sylvi*, for always being there for me, supporting me, and loving me. My older brother with family, *Pål,Sissel,Julie&Ingrid*, my younger brother, *Andreas*, my grandma, *mormor,* and my closest aunties, *tante Siss* and *tante Marion*. Thank you for everything you are to me!

My in-laws spread across the United States, Spain, and England. My mother-in-law, *Paz*, my father-in-law with family, *Bob,Nancy&Norman,* my sister-in-law and husband, *Marcelle&Will*, my adopted London family *Kris,Dennis&Stefan,* and all the rest of you adorable people. You have all enriched my life immensely!

While being on this journey I have had first one little person holding my hand and my heart, and since 2016 I have been fortunate to have another little hand holding mine, making me feel special and grounded. *Sara&Oliver*, you are the most precious I have in my life, and I love you with all my being.

George, my silly man, thank you for your love, for never doubting my strength and abilities, while challenging my weaknesses. You are the bees in my knees, the zig in my zag, the rock in my roll, the pow in my wow. You are the shit, basically. Thank you for sharing this crazy journey called life with me.

Kristiansand, February 15th 2019

Carina Ribe Fernee

List of papers

Paper I

Fernee, C. R., Gabrielsen, L. E., Andersen, A. J. W., & Mesel, T. (2015). Therapy in the Open Air: Introducing Wilderness Therapy to Adolescent Mental Health Services in Scandinavia. *Scandinavian Psychologist*, 2, e14. doi: 10.15714/scandpsychol.2.e14.

Paper II

Fernee, C. R., Gabrielsen, L. E., Andersen, A. J. W., & Mesel, T. (2017). Unpacking the Black Box of Wilderness Therapy: A Realist Synthesis. *Qualitative Health Research,* 27(1), 114–129. doi: 10.1177/1049732316655776.

Paper III

Fernee, C. R., Mesel, T., Andersen, A. J. W., & Gabrielsen, L. E. (2019). Therapy the Natural Way: A Realist Exploration of the Wilderness Therapy Treatment Process in Adolescent Mental Health Care in Norway. *Qualitative Health Research,* 29(9), 1358–1377. doi: 10.1177/1049732318816301.

Paper IV

Fernee, C. R., Gabrielsen, L. E., Andersen, A. J. W., & Mesel, T. (submitted). Emerging Stories of Self: Longitudinal Outcomes from Wilderness Therapy in Norway. *Journal of Adventure Education and Outdoor Learning* [Submitted February 12th, 2019].

References to the papers throughout the thesis are made with the use of the following abbreviations: PI (paper I), PII (paper II), PIII (paper III), and PIV (paper IV).

Abbreviations

Abup	*Avdeling for barn og unges psykiske helse*
	Department of Child and Adolescent Mental Health
AJWA	Anders Johan Wickstrøm Andersen (co-author papers and supervisor)
ART	Attention Restoration Theory
AT	Adventure Therapy
BAT	Bush Adventure Therapy
CMO	Context Mechanism Outcome
FT	*Friluftsterapi*
	Therapy in the open air
LEG	Leiv Einar Gabrielsen (co-author papers and supervisor)
OAI	Outdoor Adventure Intervention
OBH	Outdoor Behavioral Healthcare
PI	Paper I
PII	Paper II
PIII	Paper III
PIV	Paper IV
SRT	Stress Reduction Theory
TM	Terje Mesel (co-author papers and main supervisor)
WHO	World Health Organization
WT	Wilderness Therapy

List of tables and figures

Abstract

Mental health suffering affects the daily life functioning of a large number of children and adolescents in Norway. Traditional treatment approaches, while experienced as helpful for many, may inhibit some adolescents. An apparent increase in referrals to specialist mental health treatment due to social isolation and anxiety initiated a local request for more variety of group treatments for adolescents. There was also a call to integrate the use of nature in mental health services throughout the Nordic region at the time of the onset of this clinical study.

According to a socio-ecological approach to health, humans have an innate affiliation to nature and all living things. In the context of this study, health and well-being is understood as a state of balance, which is proposed to be contingent on a relation to self, others, and the more-than-human nature. The outdoor environment is suggested to be a rather unique context for mental health work as it is believed to potentially facilitate health-inducing and therapeutic processes in itself.

In this thesis I present a qualitative study that explores the experiences and outcomes of participation in a newly implemented wilderness therapy group treatment in the adolescent mental health services in Southern Norway. This article-based thesis is made up of a total of four substudies, where each substudy resulted in a scientific article, of which three have been published and the fourth have been submitted.

The first substudy is a general state-of-knowledge review that explores the diverse field of wilderness therapy practice and research internationally. Wilderness therapy is suggested to be an age-appropriate and engaging group treatment for adolescents that might also appeal to individuals who have not found conventional treatment approaches to be helpful. Considering the rich tradition of outdoor life in Scandinavia, it may also be a culturally appropriate treatment option for health care services in this particular region. Potential challenges identified in the literature were considered in terms of their relevance for a Scandinavian context. This first paper is published in *Scandinavian Psychologist*.

The second substudy is an in-depth realist review that unpacks the wilderness therapy treatment process, previously referred to as a black box in the literature. The synthesis of primary qualitative studies amounted to a number of explanatory configurations that described the influential contextual factors and therapeutic mechanisms in relation to reported outcomes found across the included studies. A theoretical framework was applied, tested, and furthermore extended into a proposed *Wilderness Therapy Clinical Model*, which was made up of three main therapeutic factors: the wilderness, the physical self, and the psychosocial self. This second paper is published in *Qualitative Health Research*.

The third substudy is a realist exploration of the therapeutic process in the newly implemented wilderness therapy program, called *Friluftsterapi*, which translates as 'therapy in the open air'. Through fieldwork and individual interviews that included two clinical groups, we inquired into the influential contextual factors and therapeutic opportunities–or mechanisms–that appeared to arise throughout the intervention. Nature-related mechanisms included a *catalyst effect* from venturing outdoors; transitions from *chaos to calm* in nature; along with a notion of *disconnect to reconnect* occurring on various levels. There were also therapeutic processes that seemed to emerge in the interplay of body and mind-or *bodymind*-referring to the single integrated unit, and *emotional emancipation* appeared to follow *physical feats*. The participants reported experiencing a *synergy* arising in the heterogeneous groups, although the dynamics of vulnerability and support were *intricate*. Finally, friluftsterapi was generally perceived to be an intriguing treatment, which made sense and had positive connotations to it, referred to as *therapy the natural way*. Limiting and enabling circumstances were explored, and underlying conditions of friluftsterapi were suggested to be its voluntary, resource-focused, and multidimensional basis. This third paper is published in *Qualitative Health Research*.

The fourth substudy is a realist investigation of the perceived longitudinal outcomes from participation in the friluftsterapi program, explored through follow-up individual interviews that were conducted approximately a year after the treatment ended. A number of the participants reported having managed to transfer and also adapt strategies that they acquired in friluftsterapi, into their daily life environments. Whilst many were still struggling in various ways, the participants overall reported feeling less constrained by symptoms. This again seemed to enable a number of the adolescents to be more independent, return to school, and increase levels of activity

and socialization. More fundamental processes appeared to include bodymind insights, self-acceptance, and (re)establishing agency, which were suggested to be conditioned by an underlying (re)connection with self. The fourth article is submitted to *Journal of Adventure Education and Outdoor Learning*.

In the synthesis of the findings, friluftsterapi is proposed to have the potential to facilitate what seems to be a stratified, synergetic (re)connection with self, others, and nature. This multi-leveled connection is furthermore suggested to support participants to sustain or regain a sense of balance in terms of their health, well-being, and daily life functioning. Furthermore, an ontology of connectedness is introduced, which is supported by an optic of interconnectedness and an integrative self-understanding. Finally, the three therapeutic factors of the wilderness therapy clinical model are revisited in the overall discussion. First, wilderness–or nature–may be our equilibrator. Second, in relation to the physical self, the embodied nature of our being and becoming is addressed. Third, arriving at the psychosocial self, our relational contingency is considered.

Limitations include the influence of the researcher and the potential fallibility and incompleteness of the hypotheses and theories put forth. The study was limited to include two clinical groups from one Norwegian wilderness therapy program. Findings are likely to be highly context-dependent and not necessarily transferable beyond the included sample.

Implications include the proposal of theoretical conceptualization based on empirical explorations into wilderness therapy the *friluftsliv* way, while utilizing the adolescent perspective as the vantage point. The present study took place in an early stage of a clinical research project and the tentative propositions and findings should be subjected to further empirical testing and refinement.

Friluftsterapi is not suggested to be a panacea and will hardly be the treatment of choice for every adolescent (or therapist for that matter); however it appears to offer a holistic ecobiopsychosocial approach to mental health treatment. Considering the complex needs of the present iGeneration it might be a timely, age-appropriate, and intriguing treatment option as it appears to facilitate a *connectedness unplugged* with self, others, and the 'wild' as adolescent mental health care ventures *into nature*.

XVI

1 Introduction

Look deep into nature, and then you will understand everything better.

–Albert Einstein

The title of this thesis, *Into nature,* generally suggests that as human beings we belong to nature and therefore ought to be *into* and connected to nature in order to maintain our own balanced 'nature'. Consequently, in the face of serious environmental threats we should engage in the preservation of nature as we as humans absolutely depend on our natural habitat. The title more specifically refers to the reintroduction of nature into various health services, in the context of the present study bringing mental health treatment out of the offices, away from institutional grounds, and *into nature*.

In this PhD study in health science I investigate a newly developed group treatment for adolescents that leave conventional treatment settings behind and venture into the Norwegian woods. Through fieldwork I follow two separate groups of adolescents, and their respective therapist teams, as they together with the natural environment co-create what appears to be a multi-faceted therapeutic process. Through two rounds of individual interviews with the adolescents I explore their journeys both *into*, and also out of, *nature*, up to a year later.

Starting this scholarly journey with readings in the philosophy of science, I placed myself within qualitative approaches to research and chose to focus on critical realism. Although a demanding framework to comprehend, let alone to operationalize, critical realism did not shy away from attempting to understand and explain parts of the complex reality we are embedded in as human beings–whether younger or older–adolescents, clinicians, and researchers alike.

Another constant, yet stimulating, struggle has been the familiarization with the diverse field of adventure and wilderness therapy. Having derived from more mainstream adolescent mental health work with a background in mental health nursing and medical anthropology, I have now learnt a great deal about this nature-assisted, experiential group treatment and the therapeutic opportunities that can emerge when adolescent mental health work is transferred *into nature.*

In the latter stage I have become more and more concerned with explorations of self, agency, and the embodied and relational dimensions of both our being and becoming. Thus as of late, the readings have turned more towards allied fields of inquiry, such as self psychology and phenomenology of the body. This immersion is still in an early phase, but I will share some tentative thoughts and careful propositions when we reach the discussion of the main findings. I therefore in many ways consider this thesis more so a reflection of a learning process and continuous inquiry, than a finalized conclusive product.

The four articles are certainly an expression of this scholarly path, starting off on a relatively wide trail with the state-of-knowledge article that explores the field of wilderness therapy in general and considers its relevance for our Scandinavian context. The path becomes narrower towards the in-depth realist synthesis, which provides the specific knowledge base for the study. Next, I navigate in less travelled terrain as I move into the empirical stage of the project; leaving my office, desk, and computer behind as I follow two groups of adolescents and their therapist teams *into nature*. As a participant observer I watch closely and co-experience the treatment processes. Through the time spent together in nature, I get to know these wonderful youngsters. They get to know me, not just as a researcher, but also as a person hiking amongst them and sitting next to them around the campfire. Later on they meet me again–twice–through two rounds of interviews.

I must admit, the more I learn, the more I question. And the more I read, the more I realize the limitations of my knowledge. Still, I must relentlessly choose to 'speak my mind', because in doing so, I not only address something that I consider important: the need to in fact constantly question, evaluate, be self-critical, and strive to improve our mental health services for people in need of care. But I also humbly speak on behalf of the voices and stories of the fourteen brave adolescents who challenged themselves greatly when daring to venture *into nature* in the midst of their struggles in life.

The following topics are briefly presented as an introduction to this thesis: (i) adolescence and mental health; (ii) nature, health, and well-being; (iii) wilderness therapy practice, research, and knowledge gaps, and finally the (iv) context of present study.

1.1 Adolescence and mental health

The present adolescent generation is frequently referred to as *iGen*, a term coined by Twenge (2017) arising from her observations of generational waves, where the so-called *iGeneration* includes youngsters born after 1995. This generation is the first to grow up with a smartphone in hand, with Fortunati (2003) even referring to the mobile phone as having become *our third skin*. The seemingly all-encompassing technification of our lives appears to influence how youngsters today relate to themselves, to others, and in which manner they spend their time. Whereas teens of earlier generations did not have this techno-social addition to face-to-face interaction, Rainie and Wellman (2012) refer to the ever-increasing use of the Internet, mobile communication, and social media networking as the *triple revolution* in social connectedness. Digital/online and face-to-face/offline spaces are no longer separate realms, but have instead become integrated and are now largely experienced as a single, enmeshed reality. Surely, this triple revolution provides numerous possibilities (e.g., Chayko, 2014) and challenges (e.g., Turkle, 2011) that we do still not know the full range of, particularly when it comes to effects on mental health (Harwood, Dooley, Scott, & Joiner, 2014). While iGen'ers are perhaps not as rebellious as their predecessors and for instance tend to express more tolerant views; unprecedented levels of maladjustment, loneliness, and mental health struggles are presently reported (Twenge, Joiner, Rogers, & Martin, 2017).

Adolescence is a critical developmental stage, where the impact of mental health suffering can be profound in terms of causing disruption on identity formation, as well as affecting outcomes in early adulthood (Rickwood, Deane, Wilson, & Ciarrochi, 2005). In Norway, mental health problems have been estimated to cause a reduction in the daily life functioning of 15- 20 percent of children and adolescents, with the Norwegian Institute of Public Health (2014) stipulating that of these, half is considered in need of treatment due to the severity of symptoms. Strong associations have been reported between poor self-rated health, high school dropout, and reduced work integration amongst Norwegian youth (DeRidder, Pape, Johnsen, Westin, Holmen, & Bjørngaard, 2012). Despite the availability of national health care in Norway, a disparity between mental health needs and actual service utilization has been identified (Langeveld, Israel, & Thomsen, 2010). For instance, a former study including over 11, 000 Norwegian youth aged 15- 16 years reported that only 34 percent of those suffering from high levels of anxiety and depression symptoms sought professional help the previous year (Zachrisson, Rödje, & Mykletun, 2006).

Traditional treatment approaches, while intended to help individuals who struggle, may very well inhibit others. Some adolescents may find the hospital setting, or the treatment itself, to be intimidating, stigmatizing, too demanding, or disengaging (Davis-Berman & Berman, 2008). Duncan, Miller, and Sparks (2007) emphasize the importance of children and adolescents playing an active part in their recovery. From a medical standpoint the first step of a treatment trajectory is often to determine 'what is wrong' and as such diagnosing human inner experience, in a sense labeling the identities of vulnerable youth as either "ill, bad, or victim" (Duncan et al., 2007, p. 35). While change, quite the contrary tends to derive from mobilizing adolescents' resources and ensuring their proactive participation as the primary agents in the treatment process. Rickwood, Deane, and Wilson (2007) have called for greater diversity in treatment options within the adolescent mental health services, in particular through resource-focused approaches that build upon the young persons' capabilities and support their need for mastery. Wilderness therapy is an example of a nature-assisted group treatment that has been suggested to be an age-appropriate and engaging approach to mental health work for adolescents, also for individuals who have not found more conventional treatment forms to be helpful (Lariviére, Couture, Ritchie, Côte, Oddson, & Wright, 2012). Taking place in a rather unique treatment context, the natural environment may potentially offer numerous pathways to health and well-being.

1.2 Nature, health, and well-being

In this section I present potential pathways between nature and our health and well-being, starting more generally with: (i) a socio-ecological approach to health and well-being, and then focusing in on various forms of: (ii) natural restoration.

1.2.1 A socio-ecological approach to health and well-being

Inextricable links between people and the natural environment were introduced in the Ottawa Charter for Health Promotion by the World Health Organization (WHO; 1986), where a socio-ecological approach to the promotion of human health and well-being encompassed not only the individual, but also the community and environment on the whole. As such it offered a holistic understanding of health and ill-health that accounted for the interplay between a broad range of determinants, including biological, mental, social, environmental/ecological, economic, and spiritual dimensions (Pryor, Carpenter, & Townsend, 2005). WHO (2001a) later came to define health as "a state of complete physical, mental and social well-being and not merely

the absence of disease or infirmity" (p. 1), and mental health more specifically as: "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2001b, p. 1). While the second definition is arguably the more feasible out of the two, both definitions reflect an integrative understanding of health and well-being where mental, physical, and social functioning is considered interdependent (Herrman, Saxena, & Moodie, 2005). Drawing on Herrman et al. (2005, p. 23), I find merit in conceptualizing human health and well-being as a *state of balance*–or equilibrium–that in a socio-ecological understanding includes the self, others, and the environment, where the more-than-human nature is of particular importance (e.g, Wilson, 1984; Annderstedt, 2009; Selhub & Logan, 2012; van den Bosch & Depledge, 2015). Health and ill-heath are understood to be multifactorial in origin and existing on a continuum (Antonovsky, 1996), where a sense of perceived, subjective balance in life is believed to support the everyday functioning of adolescents.

Well-being is often divided into two distinct, yet related, approaches (Ryan & Deci, 2001). Simply put, (i) *subjective well-being*–also referred to as hedonism–focuses on increased pleasure, decreased pain, and overall satisfaction with life, whereas (ii) *psychological well-being*–also referred to as eudaimonia–is generally more geared towards optimal psychological functioning and realizing one's true potential (Deci & Ryan, 2008). Of the two, the eudaimonic approach is suggested to have stronger associations to sustained well-being (McMahan & Estes, 2011), and has furthermore been proposed to consist of the following six dimensions: (i) self-acceptance, (ii) purpose in life, (iii) personal growth, (iv) positive relations with others, (v) environmental mastery, and finally (vi) autonomy (Ryff, 1989).

Furthermore, associations between connectedness to nature and multiple dimensions of eudaimonic well-being have been reported (Cervinka, Röderer, & Hefler, 2012; Howell, Dopko, Passmore, & Buro, 2011), where people who feel an emotional resonance with the natural world are hypothesized to function better psychologically (Trigwell, Francis, & Bagot, 2014), in addition to deriving a sense of meaning from this relatedness to nature (van den Berg & Staats, 2018; Venhoeven et al., 2018). A number of potential pathways to health and well-being in and through nature have been, and are also currently, explored.

1.2.2 Natural restoration

Our origins lie far back in time and the evolutionary process has shaped human beings in complex ways, including endowing us with a deep connection to nature (Wilson, 1984; Frumkin, 2018). In their biophilia hypothesis, Kellert and Wilson (1995) propose that we as human beings have an innate affiliation with the natural world and all living things. Prevailing theories about the attraction to, and the potential restoration found, in nature arise from the supposition that we as humans are not fully adapted to urban settings, but rather predisposed to resonate with natural environments (Bratman, Hamilton, & Daily, 2012; van den Bosch & Bird, 2018). Ecological self-theory posits that the well-being of humans and the well-being of nature are interwoven and experienced through a deep interconnectedness (Trigwell et al., 2014).

The definition of what makes an environment 'natural' changes across time and context, where Bratman et al. (2012, p. 119) propose a relatively broad definition of nature as: "areas containing elements of living systems that include plants and nonhuman animals across a range of scales and degrees of human management, from a small urban park through to relative 'pristine wilderness'". The urbanization and technification of human life is suggested to have contributed towards an increasing dislocation and disconnection from nature many places (Gabrielsen & Harper, 2017; Harper, 2012; Williams, 2017). Various forms of stress, including so-called 'techno-stress', are considered risk factors for a number of diseases, in particular for mental and psychosomatic conditions (van den Bosch, Thompson, & Grahn, 2018), where wild nature has been described as: "an island in the polluted sea of urban-industrial modernity, the one place we can turn for escape from our own too-muchness" (Cronon, 1996, p. 7). While a number of places and activities certainly can provide escape from 'too-muchness', nature is proposed to be a particular nurturing environment for reducing stress and recovering from fatigue, where two main theories–stress reduction theory and attention restoration theory–explain the restorative potential of nature. However, before delving further into the nexus of nature's suggested benefits to our health and well-being, it is pertinent to point out that less beneficial and even detrimental effects from nature are also possible. These may include numerous perceived fears and real risks ranging from being scared of the dark or potentially being attached by wildlife, getting lost, experiencing rough conditions and extreme weather, through to for instance natural disasters.

Returning now to the two aforementioned theories, starting with *stress reduction theory* (SRT). Ulrich (1983) proposed a psycho-evolutionary theory, which posits that a healing potential of nature lies in an unconscious, autonomic response to natural elements. Humans are believed to have a biological readiness to acquire restorative responses in unthreatening natural settings, as opposed to urban or built environments (Ulrich, Simons, Losito, Fiorito, Miles, & Zelson, 1991). Such responses are, according to Bratman et al. (2012), often most noticeable in individuals who have been feeling stressed prior to the experience. Depending on the intensity of the perceived stress, the restorative effects are suggested to occur fairly quickly, at times within minutes (van den Berg & Staats, 2018). A Japanese study, for instance, transported 12 participants between city and forest settings, where measures of salivary cortisol concentration, diastolic blood pressure, and pulse rate indicated significant decreases in stress levels after being present in the forest for only 15 minutes (Park et al., 2007). Certain natural environments, especially with views of water and/or vegetation that contain modest depth and complexity, are suggested to be preferable (Bratman et al., 2012).

Second, *attention restoration theory* (ART; Kaplan, 1995) contends that the primary effect of nature exposure is the replenishment of our direct attentional capacities. Directed attention requires the use of cognitive control and after prolonged use this capability can become fatigued, which may reveal itself through difficulties in concentration and focus, and possibly higher rates of irritability. Natural environments are believed to employ faculties of indirect attention that are not normally used, and as such is suggested to allow the neural mechanisms of directed attention to be restored (Bratman et al., 2012; Kaplan & Berman, 2010). In addition to being away from daily hassles and obligations, a natural environment or landscape ideally contains the following three qualities that are believed to facilitate the restoration of mental fatigue, which include: (i) a sense of *extent*, (ii) *fascination*, i.e., understood as the capacity of an environment to effortlessly draw attention, and (iii) *compatibility,* i.e., the 'match' between a person's preferences and a given environment (van den Berg & Staats, 2018). Furthermore, Kaplan and Kaplan (1989) have also proposed four stages for restoration, where the first stage is believed to have a clearing of the mind function. The second stage is suggested to recharge the mental capacity and reduce internal noise, which facilitates the latter stages of entering into deeper modes of reflection.

Although separate theories, SRT and ART may potentially complement each other considering that psychophysiological stress and mental fatigue at times tend to coincide (Hartig, Mang, & Evans, 1991). Or rather, there may be a blurring of effects, where a reduction of stress may allow an individual to concentrate better, whilst replenishment of directed attention could make a person feel less stressed (Bratman et al., 2012).

Recent theorizing in environmental psychology investigates the basic neural and visuospatial processes that underlie restorative responses to nature (van den Berg & Staats, 2018). Mechanisms between nature and stress relief are explored through psychophysiological measures and biomarkers (e.g., blood pressure, heart rate variability, muscle tension, and cortisol levels), investigating in which ways natural environments may serve as biological antidotes (van den Bosch et al., 2018).

Furthermore, specific features of nature are explored, including for instance the visual uniqueness of natural environments (e.g., fractal patterns), the sounds of nature (e.g., twittering of birds or streaming water), and the smell of nature, also referred to as biophilic odours (e.g., *fjellufta* or the 'mountain air' in Norway). These all provide sensory impacts to the brain that are proposed to result in subsequent neuro-physiological and psychological responses, which again may have bearing for our health and well-being (Hägerhäll et al., 2018).

Other health benefits related to exposure to the natural environment include nature's role as a crucial source of microbial biodiversity (Rook, 2018), which is regarded a necessity for the development and regulation of our organ systems, metabolism, and the immune system. Failing immunoregulation can lead to a range of chronic inflammatory disorders and may also have a negative impact on mental health and stress resilience.

There is still a long way to go in terms of fully elucidating the mechanisms behind natural restoration, where one challenge is our limited knowledge of moderating conditions, such as the relative importance of length of stay in nature, along with insights into mediating individual factors (van den Bosch, Thomson, & Grahn, 2018).

Over the recent years there has been an expanding recognition of the importance of contact with nature (Louv, 2008; Townsend, Henderson-Wilson, Ramkissoon, & Weerasuriya, 2018), as well as more systematic efforts to integrate the use of natural restoration and green care within health care services (Annerstedt & Währborg, 2011). In 2010, the Nordic Council of Ministries and the Norwegian Ministry of Environment launched the project *Outdoor Life and Mental Health*, where one of the stated goals was to establish a common platform for the systematic inclusion of outdoor life within the mental health services in the Nordic region. Grounded in an ecological and psychological rationale for the human need for contact with nature, outdoor life was to be integrated across the spectrum of prevention, therapy/treatment, and rehabilitation.

Despite the rich traditions of outdoor life–or *friluftsliv*–in this particular region, structured nature-based interventions had arguably remained underexplored up to that point (Annerstedt & Währborg, 2011), although it was challenging to gain a complete overview of the actual use of nature due to the lack of networking and systematic research at the time (Bischoff, 2008). Wilderness therapy is an example of a nature-assisted approach to treatment (Pálsdottír, Sempik, Bird, & van den Bosch, 2018). We came across a few examples of integrated formats in our search for the use of wilderness therapy in Norway at the onset of this study (see PI for an overview). However, due to the limited available literature from the Nordic region, our knowledge base drew on the international field of adventure therapy in general and wilderness therapy in particular.

1.3 Wilderness therapy practice, research, and knowledge gaps

Internationally wilderness therapy represents a disparate field of practice, consequently providing a brief and precise synthesis of the therapeutic approach, let alone the body of research, is not a straightforward task. In this section, I briefly address: (i) the diversity found across this field of practice, and also provide an: (ii) overview of research, with a particular emphasis on the knowledge gaps that were identified at the onset of the present study (see PI for a more detailed review)

1.3.1 A diverse field of practice

Wilderness therapy (WT) is a group treatment modality that seeks to augment the restorative qualities of nature in combination with structured and intentional individual and group-based therapeutic work (Davis-Berman & Berman, 1994; 2008; Russell, 2001). WT is rooted in the larger field of adventure therapy (AT), which has mainly

been developed in North America and Australia. AT has been defined as: "the prescriptive use of adventure experiences provided by mental health professionals, often conducted in natural settings that kinesthetically engage clients on cognitive, affective, and behavioral levels" (Gass, Gillis, & Russell, 2012, p. 1). While there is no clear delineation between AT and WT, generally speaking adventurous activities and experiential learning are considered the primary components of AT, whereas the natural environment is often secondary or not an included 'component'. AT can therefore also be practiced indoors. WT, on the other hand, is primarily practiced in the outdoors, often in more remote wilderness environments, where the experience of and connection with nature is considered integral to the treatment process (Harper, 2012).

AT is today practiced in a number of countries around the world and as such comprises a wide diversity of philosophies, formats and approaches (Norton, Carpenter, & Pryor, 2015). As such, the application of WT more specifically, across the different cultural and socio-political contexts, represents a disparate clinical practice. Variations are found in terms of the degree of wilderness, the duration of programs, participant demographics, the group size, the staff-to-patient ratio, and the composition of the practitioner/therapist teams. There are also differing formats, such as base-camp versus expedition programs, open versus closed group structures, and intermittent versus continuous programs (Becker & Russell, 2016). Furthermore, the activities selected, the degree of risk and challenge, the methods and dosage of psychotherapy, as well as whether the program includes for instance family work and/or substance use treatment, are some of the factors that distinguish one program from another across contexts. The variations of WT and AT found across the globe include not only practice, but also terminology. In the US, *Outdoor Behavioral Healthcare* (OBH; Russell & Hendee, 2000; Russell, Gillis, & Lewis, 2008) is increasingly used as a term for WT programs, while for instance in Australia, *Bush Adventure Therapy* (BAT; Pryor, Carpenter, & Townsend, 2005) and *Outdoor Adventure Intervention* (OAI; Pryor, 2018) are most commonly used. In the Nordic region the English term *Outdoor Therapy* has recently been adopted in order to reflect the use of both nearby, as well as more remote, natural areas in therapeutic work, where examples of language-specific names found in this region include for instance *Seikkailuterapia* in Finland and *Friluftsterapi* (see 1.4.1; 3.4.1; PI) in Norway.

1.3.2 Overview of research and knowledge gaps

At the onset of this project, outcome studies reported positive psychosocial changes and significant reductions in mental health symptoms for a heterogeneous population of adolescent clients across emotional, behavioral, psychological, and/or substance use problems (e.g., Bettmann, Russell, & Parry, 2013; Clark, Marmol, Cooley, & Gathercoal, 2004; Harper, Russell, Cooley, & Cupples, 2007; Russell, 2003). Two primary effects were reported to be various improvements in self-concept and the development of appropriate and adaptive social skills (Russell, 2012). An increasing number of studies had begun considering program and participant characteristics (Bettmann, Lundahl, Wright, Jasperson, & McRoberts, 2011, Bettmann, Tucker, Tracy, & Parry, 2014), also in relation to outcome (e.g., Tucker, Smith, & Gass, 2014; Magle-Haberek, Tucker, & Gass, 2012). However, few studies had investigated how adolescent clients transitioned into and managed in their daily lives after having participated in a WT program. Available follow-up data indicated that significant symptomatic reductions were maintained at six months (Harper et al., 2007) and had even improved at 12 months post-treatment (Russell, 2003). Qualitative interviews with adolescent and parent informants reported that most participants still perceived the WT treatment to be effective at 24 months post-treatment (Russell, 2005). Regarding efficacy, the most thorough meta-analysis concluded: "adventure therapy programs are moderately effective in facilitating positive short-term change in psychological, behavioral, emotional, and interpersonal domains and that these changes appear to be maintained in the longer-term" (Bowen & Neill, 2013, p. 41). Another meta-analysis (Bettmann, Gillis, Speelman, Parry, & Case, 2016) and literature reviews (e. g., Dobud & Harper, 2018; Harper, 2017; Pryor, 2018) have been published since. Overall, these recent publications continue to support the efficiency of WT, also equivalent to that of other therapeutic modalities for adolescents who struggle with social, emotional, and behavioral issues (DeMille, Tucker, Gass, Javorski, VanKanegan, Talbot, & Karoff, 2018; Harper, 2017); suggesting that AT potentially can be effectively delivered over varying lengths of time, in different settings, and with different populations (Combs, Hoag, Javorski, & Roberts, 2016; Dobud & Harper, 2018). Combs et al. (2016) explored the trajectory of change throughout the treatment process in four OBH programs and investigated outcomes up to 18 months post-discharge. They found that female participants and the presence of mood or anxiety disorder predicted greater rates of change during treatment. Post-discharge data at six and 18 months suggested that the participants maintained treatment outcomes over time and that gender persisted in influencing these effects.

While female participants generally entered treatment with greater symptom severity than males, they tended to improve faster, and ended up with lower symptom levels than males before the end of average length of stay of 10.4 weeks. Despite emerging evidence of the potency of AT in general, and WT in particular, a clearer understanding of how change comes about has been requested (Hoag, Massey, & Robert, 2014; Magle-Haberek et al., 2012), with Bettmann, Russell, and Parry (2013, p. 1048) proclaiming: "as it is now evident that wilderness therapy is an effective form of treatment, researchers should dig deeper to investigate why, how and for whom such treatment is effective". A few studies had previously investigated the relation of therapeutic process to outcomes (e.g., Russell & Phillips-Miller, 2002; Harper et al., 2007), but the prevailing lack of insights into the therapeutic process was reiterated by Norton et al. (2014) noting that: "we are still not able to answer the question of why adventure therapy works or does not work; the answer remains in the black box" (p. 51). In addition, Russell (2006) had previously emphasized the prevalence of vague definitions and *tacit* theory in the field of WT. More precise theorizing, if possible, could potentially support the integration of nature-assisted approaches within a wider range of mental health services (Berman & Davis-Berman, 2013). Furthermore, WT research had to a limited extent included the adolescent clients' perceptions of why specific interventions were considered successful or unsuccessful in helping them (Cook, 2008; McIver, Senior, & Francis, 2018). Richards, Carpenter, and Harper (2011) likewise emphasized the importance of the client voice in research, along with further in-depth explorations of the ecological, psychological, and physical dimensions of the treatment process. These enquiries was recommended to be supported by the development of more holistic, integrated and complementary theoretical frameworks that could distill essential elements of the group treatment, while recognizing the nuances of and movement between the various dimensions. Richards et al. (2011) reiterated the need to remain critical and for instance avoid over-simplification and contextual blurring; however, strongly encouraged researchers, practitioners, and clients alike to shape the future of AT by contributing with their unique perspectives from different corners of the world. In sum, four main knowledge gaps included the request for: (i) a holistic, integrated, yet precise, theoretical conceptualization, (ii) insight into the multi-dimensional treatment process in relation to longitudinal outcomes, (iii) including the adolescent voice, and finally (iv) context-specific studies from all corners of the world, which in the context of this study entailed an exploration of wilderness therapy the *friluftsliv* way (Henderson & Vikander, 2007).

1.4 Context of present study

This study arose within the context of a larger clinical research project at the Department of Child and Adolescent Mental Health (Abup) at Sørlandet Hospital in Southern Norway. The research project was developed as a proactive response to a local, clinical need for a wider selection of treatment options for adolescent clients in general, and group interventions in particular, as the number of referrals in relation to social anxiety and isolation appeared to increase. At the time there was also a call to integrate nature in mental health services across the continuum of care in the Nordic region (Norwegian Ministry of Environment, 2010). In this section, I will briefly present the context of: (i) the main project, and (ii) the doctoral study.

1.4.1 Main project

The clinical research project called 'Wilderness therapy for at risk adolescents–a mixed methods approach', henceforth referred to as the main project, was initiated by project leader Dr Leiv Einar Gabrielsen. The main project accompanied the clinical implementation of a Norwegian version of WT that was offered to adolescent clients aged 16–18 years. A multi-disciplinary research group was established in order to address a total of eight research goals that comprised theoretical conceptualization, psychological and physiological variables, ethical challenges, participant experiences and perceived effects, network perspectives, as well as methodological and cost-effectiveness analyses. To the best of our knowledge this clinical research project was the first to explore the use of WT as a stand-alone group treatment in the adolescent mental health services in Norway.

The main project received external funding from the Sørlandet Knowledge Foundation, which allowed the project group to attend conferences and gatherings in the US and Australia. The acquired competence was adapted to the local clinical and socio-cultural context in order to develop a Norwegian version of WT (Gabrielsen & Fernee, 2014). After having integrated the Nordic *friluftsliv* tradition (Beery, 2013; Hendersen & Vikander, 2007), we found the name *Friluftsterapi* to be appropriate. Friluftsterapi (FT) translates as 'therapy in the open air' (PI) and has been defined as: "A specialized approach to mental health treatment that combines individual and group-based therapeutic work with basic outdoor life, engaging participants through ecological, physiological and psychological processes" (Gabrielsen, Fernee, Aasen, & Eskedal, 2016, p. 7; also further described in 3.4.1). Following a pilot intervention in

2014, four FT interventions were carried out in 2015. The two interventions that ran parallel in the spring were included in this doctoral study.

1.4.2 Doctoral study

Having worked as a clinician in Abup since 2003 and formerly been involved in another research project, I was recruited early on in the planning stage of the main project and allowed time to develop a protocol for the doctoral study. Henceforth mostly referred to as 'the present study'. I was mainly involved in the following three of the aforementioned eight research areas of the main project, including: (i) theoretical conceptualization, (ii) participant experiences and perceived effects, and (iii) network perspectives, where the two first objectives are included in this thesis. In addition, I also interviewed a parent sample related to the network perspective, but in order to limit the extent of the thesis, this third objective was not included.

Beyond the clinical need for increased variety of group treatment options and the integration of nature in treatment, this doctoral study addressed several of the aforementioned knowledge gaps (see 1.3.2) by attempting to contribute with:

   i. Theoretical conceptualization.
   ii. Insights into the multidimensional treatment process.
   iii. Insights into longitudinal processes and outcomes.
   iv. Inclusion of the participant perspective.
   v. A context-specific study from a Norwegian specialist health care setting.

A critical realist approach was found to be compatible (see 3.1.5. for rationale) to the request for a holistic, integrative, yet precise theoretical framework, along with the request for in-depth inquiries that accommodates the inherent complexity and importance of context (see 3.1 for more details). Furthermore, a qualitative approach that combined fieldwork and two rounds of individual interviews (see 3.4.3 for more details) was considered an appropriate method for in-depth explorations of the friluftsterapi treatment process and longitudinal outcomes, while maintaining the participant perspective as the empirical vantage point.

Having presented the background for this thesis, the knowledge gaps, and the context of the present study, we now move on to the aims and objectives.

2 Aims and objectives

2.1 Overall and specific aims

The overall aim of the present study was to explore the friluftsterapi (FT) treatment process through the adolescents' subjective experiences, and the perceived impact from participating in the group treatment up to a year after conclusion. More specifically, enquire into both supportive and restrictive contextual circumstances and therapeutic opportunities–or mechanisms–that potentially generated a set of observable or perceived psychosocial outcomes (see 3.1 for description of terms).

In order to provide the general knowledge base for the study, combined with a consideration of the appropriateness of wilderness therapy (WT) for a Scandinavian context, the first specific aim was to:

I. Acquire a general overview of WT, both in terms of conceptualization, research, and practice, and to furthermore consider its relevance for the Scandinavian context.

Next, in order to provide an in-depth knowledge base for the study, the second specific aim was to:

II. Acquire insight into the proposed in-depth hypotheses regarding the treatment context, process and outcomes–or 'black box'–of WT.

Entering into the empirical stage of exploring FT, the final two specific aims were to:

III. Acquire an in-depth understanding of the FT treatment process.
IV. Explore the perceived longitudinal outcomes of FT.

Although the four specific aims are connected, they make up four separate substudies that again resulted in a total of four scientific articles (see list of papers, p. IX). Next, the objectives of each of these four substudies are presented, before moving on to the methods and procedures.

2.2 Objectives of four substudies

2.2.1 Study I: Wilderness therapy and relevance for Scandinavia

The objectives of the first substudy were to explore:

i. What is WT?

ii. What might some of the current challenges facing this field of practice be, and to what extent are these challenges relevant to the Scandinavian countries?

We opted for a state-of-knowledge approach (see 3.2) considering the diverse field of practice, as this allowed for an iterative, open, and continuous review process.

2.2.2 Study II: The black box of wilderness therapy

The objectives of the second substudy were to explore:

i. Which hypotheses regarding the black box of WT have been proposed in previous in-depth qualitative inquiries?

ii. What are the possible conducive combinations of the therapeutic contexts, mechanisms, and outcomes (CMO) in WT according to the included studies?

iii. What is a plausible theory or model of WT that can be tested or refined through these explorations into the black box?

We opted for a realist synthesis (see 3.3) as this offered a theory-driven, in-depth approach that was sensitive to both the inherent complexity and context.

2.2.3 Study III: The friluftsterapi treatment process

The objectives of the third substudy were to gain a deeper understanding of the FT treatment process, where we applied a realist approach (see 3.4) to exploratory and explanatory research, attempting to:

i. Explore some of the therapeutic opportunities–also called mechanisms–that arose throughout the FT treatment process.

ii. Explore the circumstances under which these therapeutic mechanisms emerged.

iii. Propose possible underlying conditions for these mechanisms.

2.2.4 Study IV: Perceived longitudinal outcomes from friluftsterapi

In the fourth substudy we applied the realist approach (see 3.4) in order to explore:

i. The perceived outcomes of participation in the FT program up to a year later.

ii. The possible enabling and limiting factors that seemed to influence these perceived outcomes, or lack thereof.

3   Methods and procedures

In this chapter the: (i) critical realist foundation for the overall study, (ii) the methods and procedures of the four substudies, and finally (iii) ethical considerations, are presented.

3.1   Critical realism

Originally expressed in the seminal works of the British philosopher Roy Bhaskar (1975; 1986; 1989), critical realism offers a middle or third-way option in the philosophy of science (Smith, 2010). It navigates between the positivist paradigm on the one hand and the constructivist perspective on the other (Bergin, Wells, & Owen, 2008; O'Mahoney & Vincent, 2014) on a quest to explore and develop "deeper levels of explanation and understanding" (McEvoy & Richards, 2006, p. 69). In this section I will address: (i) the main tenets, (ii) causal explanations and validity, and finally (iii) the rationale for critical realism.

3.1.1   Main tenets

The positioning within critical realism starts with a *realist ontology*, which entails that a real world exists independently of our alleged knowledge about this reality (Danermark, Ekström, Jakobsen, & Karlsson, 2002). This implies for instance that the observed reality is not all that is, and as such must be understood as an expression for deeper-lying processes. Hence reality is *stratified*, which simply means that it is multi-leveled rather than flat, and as such consisting of an 'ontological map' made up of three different domains: *the real, the actual, and the empirical* (Danermark et al., 2002; see figure 1). These three domains are again made up of levels, called *strata* (Smith, 2010), which of most relevance to this study are for instance the ecological, biological, physiological, mental, social, and even the meteorological levels.

The purpose of critical realist enquiries is often to attempt reaching beneath the empirical surface and gain insights into underlying processes. The epistemological challenge is however to access these more fundamental conditions, due to the ontological reality of many of these processes being initiated or taking place beyond the observable level (Pilgrim, 2014). Thus, realist ontology is coupled with a *constructivist epistemology,* which means that our beliefs or propositions about the subject under study are a product of our own knowledge construction when attempting

to understand and explain the complexity of a given phenomenon (Walsh & Evans, 2012). To think otherwise it to commit what critical realists refers to as the *epistemic fallacy,* which means to reduce what *is* to what we can empirically observe (Smith, 2010). In other words, knowledge cannot be considered a direct representation of reality, but must rather be understood as an interpretation of reality based on collected data (Alvesson & Sköldberg, 2009), which again renders our theories and hypotheses as partial, incomplete, and revisable in the light of new research (Maxwell, 2012; Walsh & Evans, 2012). However, although all research generally should be open to reconsideration, this does not mean that all knowledge is equally fallible (Danermark et al., 2002). Through the application of theoretical and methodological tools we can attempt to discriminate amongst the hypotheses and theories we put forth (see 3.1.2). This process is referred to as *judgmental rationality* (Archer, Bhaskar, Collier, Lawson, & Norrie, 1998), which is also related to questions of validity (see 3.1.2).

Figure I. Diagram of critical realist ontology

Branches
Empirical: what can be observed
Trunk
Actual: what is known but cannot always be seen
Roots
Real: hidden but necessary precondition for the actual and empirical
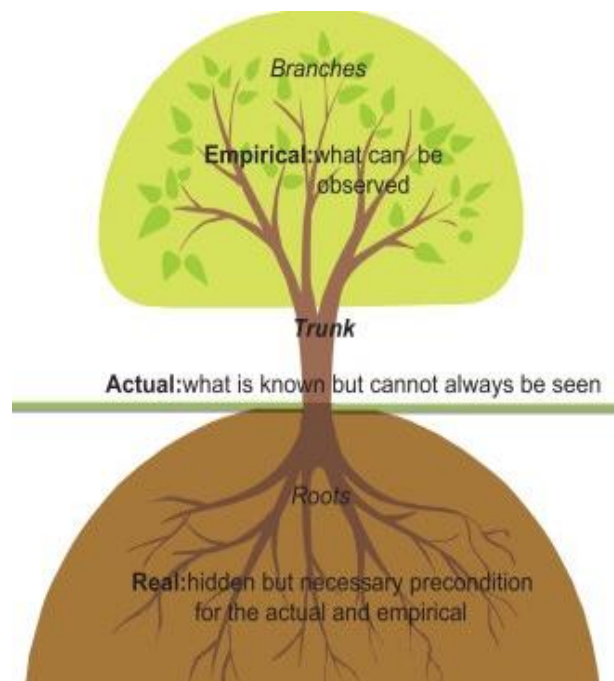
(Adapted from Walsh & Evans, 2014)

As researchers we operate in the empirical domain (see figure 1 and 2). In the present study fieldwork was used in order to observe first-hand 'what is perceived to be happening' (see figure 2); whereas the interviews were used to gain insight into the participants' perceptions regarding what appeared to be happening; both of these accounts reflecting back upon the events that took place in the actual domain (see

figure 2). Following the diagram a bit further, the objective of critical realist oriented researchers is to arrive at explanations of 'what and why things are' as they appear (see figure 2), and as such referring to the hidden, underlying preconditions of the real domain (i.e., the roots in figure 1).

Figure 2. Critical realist concept diagram
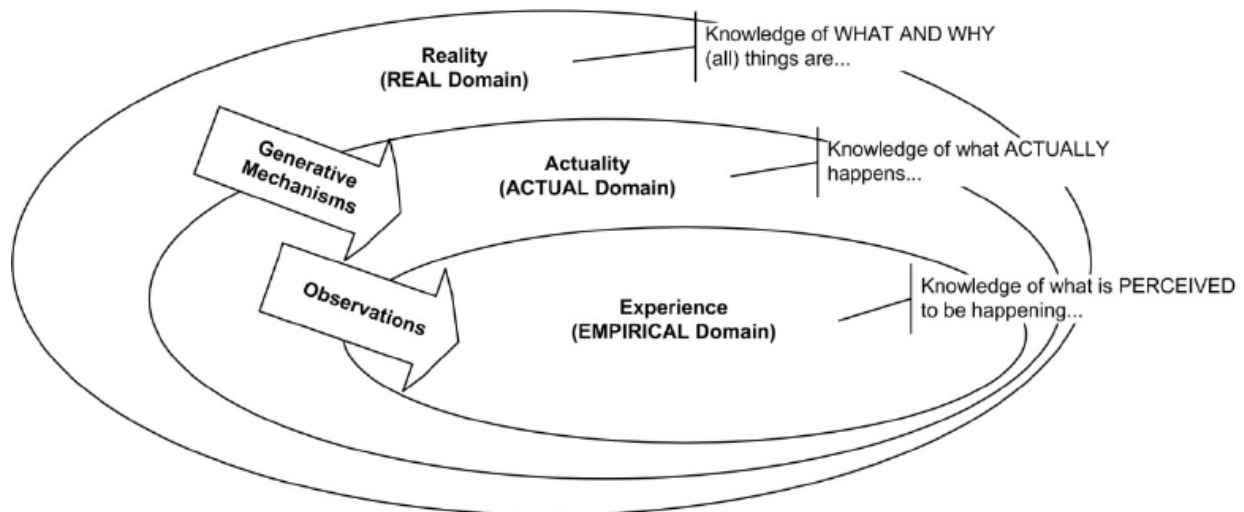
In critical realism, social phenomena and processes are understood as taking place in *open, complex systems* (Danermark et al., 2002). While closed systems, or positivist-oriented, research arguably not only control *for* variables, but in essence rather control *out* intricate processes of being and becoming, Pilgrim (2015) have argued for a critical realist approach to health research that embraces the complexity and dynamics of open, changing systems. Open systems may stabilize in homeostasis for a while, thus creating *structures*, however considering that conditions change across time and space these structures can only be abstracted and explained as *tendencies,* contrary to the idea of laws in the positivist tradition (Pilgrim, 2015). Structures operate at different levels of reality, and whether they are *intrapersonal*, e.g., mental health symptoms; *interpersonal*, e.g., group dynamics, or *societal* structures, e.g., marginalization, they may influence human health and functioning (Williams, 1999; Danermark et al., 2002). In a critical realist view, they may be enabling, restrictive, or relatively neutral. People's actions are not considered fully determined by structures, but more so *conditioned* by them, which plays into the relation between structure and agency. A critical realist approach is often particularly concerned with the interplay between human agency and various structural constraints and possibilities (Archer,

1998). *Agency* refers to the human possibility to proactively make things happen in the world, where an individual's ability to think and act in a given situation depends on one's perceived degree of agential freedom (Smith, 2010). Over time, the dynamics between structures and agency can either result in continuous reproduction where a given state or situation remains seemingly the same, to deterioration, or rather to minor or major changes; the latter also referred to as *morphogenesis* (Archer, 2003). The ability to not reproduce a current situation and to instead for instance move in a health-promoting direction is to a large extent dependent on the degree of agency an individual is able to mobilize, and what a given context again may allow for.

The body is central to agency, as the self and to a large extent also our actions and interactions are embodied, to where we can hardly experience anything as independent from this bodily engagement (Dolezal, 2015). As humans we encounter profound both bodily and emotional limitations and vulnerabilities, to where we are susceptible to a range of hurts, sorrows, and anxieties. Thus, despite potentially powerful human capabilities, there are possible risks to the body and self that exists on many levels of the natural and social reality (Smith, 2010), where for example the unprecedented levels of suffering and maladjustment reported by the current adolescent generation (Twenge, 2017) could potentially compromise *iGen'ers* perceived degree of agency.

3.1.2   Causal explanation and validity

The ability of qualitative researchers to address causality has been a contested issue (Maxwell, 2004). In critical realism, causality is not viewed as general laws, but rather understood as the aforementioned tendencies (Pilgrim, 2015) and *contextualized social processes* (Maxwell, 2012; Sayer, 2000). Such tendencies and contextualized processes can be explored through in-depth studies of relatively small samples (Maxwell, 2004), where Miles and Huberman (1984) have argued that: "field research is far *better* than solely quantified approaches at developing explanations of what we call *local causality*–the actual events and processes that led to specific outcomes" (p. 132, italics in original).

In the present study, wilderness therapy is understood to be a "complex, dynamic, and emergent" social process (Caulkins, White, & Russell, 2006, p. 23). The multi-faceted approach to treatment often includes heterogeneous client groups and takes place in a semi-unpredictable wilderness environment, where numerous factors on various levels interact in "a non-linear fashion to produce outcomes that are highly context

dependent" (Wong, Greenhalgh, & Pawson, 2010). Knowing how to make sense of such complex interventions with context-dependent outcomes is not easy, but nor is it impossible, according to Wong (2017), where one approach is to attempt to develop causal explanations through the application of a realist heuristic (used in PII). Perhaps coming across as a seemingly mechanistic, behavioristic approach at first, quite the contrary the objective is to attempt to gain insight into the 'local causality' of these complex, dynamic, and emergent contextualized treatment processes in relation to both intended and unintended outcomes.

Causal explanations are derived from so-called *configurations*, which simply mean arrangements of parts that make up a whole. The main parts of these configurations are the combination of *contextual conditions* (C) and the *therapeutic mechanisms* (M) that together are proposed to generate observed or perceived *outcomes* (O), i.e., C+M=O or CMO (Pawson, 2006; Wong, 2017). Taking a closer look at these parts, starting with contextual conditions, these are generally layered, according to Pawson (2013) and may include:
  i.   Individuals, i.e., may refer to both participants and therapists in the present study, and their characteristics and capacities.
  ii.   Interpersonal relations, i.e., the relationships between these individuals, e.g., group dynamics, therapeutic alliance etc.
  iii.   The intervention setting, i.e., the immediate setting, e.g., nature, as well as rules, norms and expectations represented in a given program.
  iv.   Infrastructure, i.e., refers to the wider social and cultural context, which may influence all of the above levels.

The second part, *therapeutic mechanisms*, can be understood as the processes operating within a program that provide opportunities for change, while the third part, some form of *outcome*, depends on the participants' ability to make use of these opportunities that may arise throughout the intervention. The configurations can pertain to the treatment process as a whole, or refer to certain aspects of it. They may also be found to occur in series, where for instance an intermediate outcome becomes the contextual condition of another configuration and so on (Jagosh et al., 2011).

The critical dimension of realist investigations may furthermore entail using these insights to suggest changes and improvements for instance within health care services. However, in order to inform accurately, the question of *validity* and the

aforementioned judgmental rationality become important, as explained by Maxwell (2004, p. 260):

> Field researchers are often interested in knowing what goes on in the settings they study, not only advance their theoretical understanding of these settings but also because ultimately, they want to contribute to their improvement. To accomplish either of these tasks, they must be able to identify the causal processes that are occurring in these settings and to distinguish valid explanations from spurious ones.

There are various strategies or techniques that can be utilized not only to generate and test causal hypotheses and explanations, but also for assessing validity (Maxwell (2004; 2012). In the present study, a combination of strategies was applied as a '*conscious mindset'* in terms of integrating critical thinking throughout the different stages of the research process. These strategies included: (i) modus operandi, (ii) member checks, (iii) searching for discrepant data and negative cases, (iv) abduction and retroduction, (v) triangulation, and finally (vi) rich data (Maxwell, 2004; 2012).

First, the *modus operandi* strategy involves a similar search process to for instance a physician attempting to find the cause of a patient's pain, where different hypotheses are ruled out or confirmed along the way. The physician is likely to make use of a combination of observations and asking the patient, which is supported by knowledge, experience and perhaps intuition, alltogether potentially guiding the physician in the direction of the cause or a working hypothesis (Maxwell, 2004; 2012). Similarly this technique can be applied in order to attempt verifying or denying the plausibility of tentative hypotheses. This strategy can include both *member checks* and searches for *discrepant data and negative cases.* In terms of member checks, I discussed hypotheses directly with the participants in the two rounds of interviews, and also with my team of supervisors (TM, LEG, & AJWA), who represented various disciplines and perspectives. Being aware of the tendency for researchers to notice supporting instances, while ignoring the ones that do not 'fit' with one's more favored propositions, I attempted to more or less continuously examine both the supporting and discrepant data to rigorously assess whether it was plausible to retain or modify a proposed causal explanation. This was particularly salient in the analytical stages that included *abduction* and *retroduction* (see 3.4.4 for detailed description). Furthermore, *triangulation* or the combination of methods may reduce the risk for systematic biases and also support the final strategy *rich data* (Maxwell, 2004; 2012). The combination

of fieldwork and interviews is suggested to be helpful both in terms of developing causal explanations, whilst also assessing the validity of these interpretations. Maxwell (2012) stating that: "Repeated observations and interviews, and the sustained presence of the researcher in the setting studied, can give a clearer picture of causal processes, as well as helping to rule out spurious associations and premature theories" (p. 43). In this view, research can be understood to be a *working process* (Danermark et al., 2002) in terms of attempting to arrive at accurate and valid explanations:

> We can work with what "knowledge" we have, while recognizing that it may be erroneous and engaging in systematic inquiry where doubt seems justified, and in so doing we can still make the reasonable assumption that we are trying to describe phenomena as they are, and not merely how we perceive them or how we would like them to be (Hammersley & Atkinson, 1995, p. 17–18).

While a number of scientific approaches involves simplification, this doctoral project early on headed in the direction of embracing the complexity of human health and suffering in general, and the WT treatment process more specifically.

3.1.3 Rationale for critical realism

In this section I briefly present the rationale for applying a critical realist approach and as such the principle of *sufficient complexity* (Smith, 2010, p. 12):

> Critical realism asks us to discover our best account of what is true about reality. If it turns out that human and social reality is quite complicated, as in fact it does, then Occam's razor does not authorize us to hack away toward oversimplification for the sake of parsimony. What critical realism suggests, instead, is that the principle of parsimony must be balanced by the principle of "sufficient complexity".

Hence we must be willing to theorize with enough complexity to capture the important features of the human and social reality that we are trying to comprehend. According to Pilgrim (2015), mental processes are considered multi-determined, resulting from ecological, biological, psychological, and social processes interacting on various levels, which may be synergistic or antagonistic to for instance the improvement of health. As researchers we should therefore think–and ideally also collaborate–inter-disciplinary in order to examine and understand mental health and ill-health more holistically, broader, and deeper (Bhaskar, Danermark & Price, 2018).

The aforementioned 'sufficient complexity' should therefore entail maintaining such notions of holism and contextualizing (Pilgrim, 2015), rather than to strive for simplicity, linearity and certainty (Walsh & Evans, 2012). The WT process can perhaps be better understood as 'orderly chaos' (Walsh & Evans, 2012), which arguably requires an approach to research that may accommodate its aforementioned complex, dynamic, and emergent reality.

The rationale for using a critical realist approach included the following considerations with regards to the aforementioned identified knowledge gaps in general (see 1.3.2), and the aims and objectives (see 2.1 and 2.2) of the present study in particular:

i.   Critical realist use of theories and constant development of concepts that are founded on experiences of concrete reality, however combined with the principle of sufficient complexity, aligned well with empirical research into a field that requested a holistic, integrated, yet precise theoretical conceptualization.

ii. The quest for causal explanations that combines context, mechanisms, and outcomes, supported the request for insights into a multidimensional treatment process in relation to longitudinal outcomes and contextual specificities.

iii. In addition, critical realism allows a hopeful vision of science as something that we can use to create positive change in our world. This resonated well with the overall rationale of clinical research in terms of searching for better or more appropriate ways to support the recovery of a larger proportion of adolescent clients, through empirical research that includes the adolescent voice.

Having presented the critical realist foundation of the overall study, we now move on to the methods and procedures of the four substudies, starting with the first substudy: the state-of-knowledge review.

3.2 Study I: State-of-knowledge

In the first substudy we applied a state-of-knowledge approach in order to gain a general overview of the disparate field of WT. A systematic search was carried out in October 2014 (see PII for detailed procedure). However, this single search was supplemented by an ongoing iterative and continuous review of the international literature that in addition to scientific articles also drew on textbooks, grey literature, as well as communication with the international WT/AT/BAT community. The latter included meetings and gatherings with practitioners and researchers in Canberra, Adelaide, Tasmania, and Melbourne throughout a visit in Australia in November 2014. Conferences included attendance at the *Wilderness Therapy Symposium* in Park City, USA, in September 2014 and 2015, along with the *7th International Adventure Therapy Conference* in Denver, USA, in June 2015. All of these acquired insights contributed towards the synthesis and write up of this state-of-knowledge introductory article.

3.3 Study II: Realist synthesis

In the second substudy we applied a realist approach to review (Pawson, 2006; 2013; Pawson, Greenhalgh, Harvey, & Walshe, 2005) in order to further explore and unpack the black box of WT. Realist reviews are increasingly used to synthesize primary studies on multi-faceted programs due to its compatibility with the complexities of health interventions. The realist synthesis is a theory-driven review method that explores the contextual factors, therapeutic mechanisms, and outcomes of a given intervention to seek an increased understanding of the treatment process. Using underlying program theory as a starting point, comparisons are made between the proposed hypotheses of how a program is expected to work and the reported findings from empirical studies (Wong, Greenhalgh, Westhorp, Buckingham, & Pawson, 2013). The realist review does not result in definite answers about what works, but rather seeks in-depth, detailed information about the contexts and mechanisms that appear to explain how, for whom, and under which circumstances a given intervention is believed to work or not (Pawson, 2006), thereby providing examples of "success, failure, and various eventualities in between" (Wong et al., 2013, p. 1006).

We applied *the wilderness therapy treatment milieu model* (Russell & Farnum, 2004) as the program theory, because this was the only available concurrent framework of the WT treatment process to the best of our knowledge. This model consists of three

therapeutic factors: (i) *the wilderness*, (ii) *the physical self*, and (iii) *the social self*, which are considered to be dynamic and interrelated, and each able to facilitate change. According to Russell and Farnum (2004), the three components were proposed to be present at all times, but to varying degrees, depending on the temporal progression of the program.

We applied a number of criteria for inclusion and exclusion, limiting ourselves to utilize: (i) a specific definition of WT; (ii) clinical populations of adolescents; (iii) one key program theory; (iv) primary, empirical qualitative studies that had explored therapeutic factors of the WT treatment process, and finally (v) a selective evidence base. The rationale for these limitations besides restrictions in terms of time, were that the conceptualization of WT as a specialized approach to mental health treatment and thus the inclusion of clinical populations of adolescents were considered to be of most relevance for this clinical research project. The in-depth nature of qualitative research was considered a good starting point for exploring the black box, and furthermore for contributing towards theory building.

Next, with assistance from a university librarian, we performed a systematic search in October 2014, which located 360 citations. These were finally narrowed down to seven articles (see PII for detailed description of search process, flow diagram, and overview of included studies), which were assessed and found relevant for the final inclusion in the synthesis. The moderate number of included articles allowed for manual data management. The applied program theory was populated by the contextual factors, therapeutic mechanisms, and outcomes that were reported across the primary studies.

Following this preliminary analysis and discussions within the review team, made up of the three co-authors (LEG, AJWA, & TM), I returned to the primary studies to test the tentative hypotheses. The iterative process that ensued eventually resulted in a suggested extension of the program theory. This extended framework was re-introduced to the review team for further discussions, and also assessed by an appointed expert in the field. Finally, we arrived at the proposition of a refined program theory, called the *wilderness therapy clinical model* (PII; see 4.2).

Having presented the methods and procedures of the two initial substudies, we now move into the empirical stage and the realist explorations.

3.4 Studies III–IV: The realist explorations

In this section, I present the methods and procedures of the third and fourth substudy, including: (i) program description, (ii) participants, (iii) data collection, and (iv) data analysis.

First, a brief recap before moving on, in applied critical realism society is studied as an open, complex system in which one is particularly concerned with the aforementioned interdependency between human agency and social structures that operate on many levels of reality (Archer, 1998). Within this open system, i.e. real life, we attempt to understand what makes things happen, come into being and change, or alternatively not happen when expected to (Danermark et al., 2002). When investigating mental health interventions, realist explorations may result in tentative hypotheses or explanations that postulate how particular contextual factors are believed to facilitate, initiate or bring about certain therapeutic mechanisms, which again may generate observed or perceived outcomes (Pawson, 2006). As mentioned earlier, therapeutic mechanisms more specifically refer to the processes operating within a program that enable opportunities for change, where outcomes again are dependent on the participants' abilities to utilize these opportunities (Pawson & Tilley, 1997; Wong et al., 2010).

In the third substudy we explored the therapeutic opportunities that appeared to arise throughout the FT process, along with the enabling and constraining contextual conditions that seemed to influence these mechanisms. The WT clinical model (PII) was applied as a conceptual framework both to provide a structure, and also a theoretical backdrop, for the investigation. Data collection comprised fieldwork throughout two FT interventions, which was followed by individual interviews with fourteen adolescent participants shortly after the treatment came to an end.

In the fourth substudy we explored the perceived longitudinal outcomes from participation in FT. This final substudy drew on a second round of individual interviews that were carried out approximately a year after the FT treatment was concluded.

3.4.1 Program description

The FT program was offered as a stand-alone, outpatient, and voluntary group treatment for adolescents aged 16- 18 years who were referred to mental health care at Abup. The intervention was a ten week program that comprised a total of eight single day sessions and two overnight trips of three and six days duration (see table 1). The intermittent structure of the program allowed clients to live at home and to continue schooling and/or other activities throughout the majority of the treatment, only interrupted by the weekly day sessions and the overnight trips. The wilderness context was considered a restorative environment that could lead to therapeutic processes with minimal facilitation. Nature was not to be conquered, but according to the friluftsliv tradition a connection to nature was encouraged through the simple life outdoors. With the exception of the introductory day and the closing ceremony, the treatment as a whole was provided in nature. The first overnight trip took place during the third week of the program and included three days in and around a permanent outdoor education camp. The overall aim of the first trip was to promote group cohesion and establish a safe foundation for therapeutic work. This groundwork was then built upon over the course of the next four weekly single day sessions leading up to the final expedition that took place in week nine. The entire program intended to prepare the participants to venture on this expedition, where they together were to hike and paddle along a pre-determined route over the course of six consecutive days. A new camp was set up most nights, with the exception of the second night, which was spent in the same outdoor education camp that the participants were familiar with from the first overnight trip.

Table 1. Program overview

WEEK	DAY/TRIP	DESCRIPTION
Weeks 1-3	Day 1	Introductory day. Network invited.
	Day 2	First day outdoors. Team building.
		Individual goal setting.
	Day 3	Preparing for the first overnight trip.
	Trip 1	3-day overnight trip. Outdoor education camp.
Weeks 4-8	Day 4	Reflections on trip 1. Hike.
	Day 5	High-ropes course.
	Day 6	Preparing for the expedition. Hike.
	Day 7	Final preparations for the expedition.
		Practice hike with backpacks.
Week 9	Trip 2	6-day overnight expedition. Hiking and canoeing.
Week 10	Day 8	Reflections on the entire program during the day.
		Closing seminar in the evening. Network invited.

The groups were composed of eight to ten participants, mixed gender, in a closed group structure. A therapist team of three, consisting of mainly Masters level mental health practitioners, remained with the group throughout all stages of the intervention, including the overnight trips. The therapist team was in charge of all facets of the program, ranging from structured therapeutic work to all the practical aspects of the intervention.

On day two of the program, each participant was provided a primary therapist out of the team of three. Together the participant and therapist were to develop a treatment plan with individualized goals for the time spent in the FT program. Individual and group-based psychotherapy was carried out during most day sessions throughout the program, and preferably on a daily basis while on the overnight trips. While some WT programs may commit to a specific psychotherapeutic approach, the FT teams utilized what they referred to as an eclectic or integrative application of the therapeutic work.

The FT program came to an end through a two-part closing ceremony. During the first part, the group and therapists together evaluated the intervention, and decisions were made with regards to individual after care plans and whether the client was discharged from, or arrangements were made for, further treatment. The latter part was a more formal celebration of the completion of the program, where the network was invited to participate. Each participant received a diploma and a personalized speech, and pictures and stories were shared.

This first version of the FT program did not include follow-up sessions, and family involvement was limited to an invitation to take part on the introductory day and closing ceremony. However, the parents were free to contact the therapists and their son/daughter whilst in the field, and vice versa.

3.4.2 Participants

In this section, I present (i) the criteria for inclusion and exclusion, (ii) the recruitment procedure, and (iii) the participant samples of the third and fourth substudy.

Criteria for inclusion and exclusion

Participants were required to be aged sixteen by the onset of the treatment and not older than eighteen years of age by the time the intervention came to an end. Furthermore participants had to be regarded in need of mental health treatment as assessed by the clinical team in charge of general intake procedures at the hospital department.

Exclusion criteria included psychosis, severe anxieties, significant substance use problems, and/or other issues that were considered incompatible with an intensive group and/or wilderness-based treatment.

Recruitment

This present study followed the same recruitment process as the main project (see 1.4.1). However while the main project included a total of four FT groups, this study was limited to include two of these four.

The recruitment period took place during the last four months leading up to the onset of the two interventions that ran parallel from March 2015. There were two entries to participation, either through: (i) external referral where potential participants were recruited from the weekly intake meetings at Abup, or (ii) internal referral where clients who were already in treatment in the department and expressed an interest to try FT, could be referred by their primary therapist.

The next step in the recruitment procedure was an invitation to the potential participant to attend an appointment with one or two members of the FT team. There could be one or several meetings, where parents, guardians and primary therapists were also welcome to take part. Following a detailed exchange of information, final agreements were made regarding participation in FT and the clinical research project, upon which the signing of the informed consent form took place (see 3.5).

A total of eighteen adolescents, eleven girls and seven boys were recruited to participate in the FT program divided into two clinical groups. Of the initial eighteen, fourteen individuals remained included in the study based on their reconfirmation of participation throughout all stages of the subsequent research process. Thus, four adolescents left the study. Three of these opted to return to individual follow-up rather than remaining in the group treatment. The fourth completed the FT program, however withdrew her consent to be interviewed as she was in the process of moving at the time.

Sample study III

The final sample of the third substudy consisted of fourteen participants; eight girls and six boys (see table 2). Of these, eleven completed the majority of the program. The three individuals who did not complete the intervention still consented to remain in the study. Reasons for not completing the program were that one participant felt that she had recovered by day six of the program, whereby she asked to be discharged from further treatment from then on. The final two opted out of the six-day expedition, one of them due to school obligations and the other person stated that he did not feel physically capable of completing the expedition. The first mentioned was discharged from further treatment according to her request, whereas the latter two continued in individual follow-up in Abup.

All participants were ethnic Norwegian, with the exception of one individual who was born in another Scandinavian country. Four participants were first-time referrals. The remaining ten had been in treatment before, four of these for more than three years. Approximately half of the participants were diagnosed with one or a combination of diagnoses along the anxiety and/or depression continuum (For other diagnoses represented in the sample, see table 2). Most participants also reported to have experienced one or multiple adverse childhood experiences (see table 2). Six participants were in school full-time and three part-time, while five participants had dropped out of school prior to taking part in the FT program.

Considering that the fourth substudy explored perceived longitudinal outcomes from participation in the FT treatment, it was regarded necessary that the participants had taken part in the majority of the treatment program. Consequently the four clients who did not complete the intervention were not included in the final sample.

Table 2 Participant characteristics

PARTICIPANTS	
Female/male adolescent	8/6
DIAGNOSES	
Anxiety and/or depression	8
Generalized anxiety disorder	1
Social anxiety disorder of childhood	2
Specific phobias	1
Mixed anxiety and depression disorder	2
Moderate or recurrent depressive episode	3
Adjustment disorder	1
Pathological gambling	2
Myalgic encephalomyelitis/Chronic fatigue	2
Attention deficit hyperactivity disorder	1
Post-traumatic stress disorder	2
Reactive attachment disorder of childhood	1
Conduct disorder	1
OTHER KNOWN SIGNIFICANT LIFE STRESSORS	
Bullying	2
Mental, physical, sexual and/or verbal abuse	3
Loss of a loved one	2
Family conflicts	6
Parent with mental illness/alcohol abuse	3
Suicidal ideation/attempts, self-harm	6
SCHOOL	
Full-time	6
Part-time	3
Dropped out	5
FORMER SPECIALIST MENTAL HEALTH TREATMENT	
First time referral (within last 3 months before WT)	4
Re-referral (within last 3 months before WT)	3
Multiple times (≥ 2 times)	6
< 1 year	3
≤ 2 years	1
≤ 3 years	3
>3 years	1
Before the age of 12	3
DISCHARGED immediately after/during FT	5

Sample study IV

The final sample of the fourth substudy included ten participants; six girls and four boys, and did not differ considerably from the previously described sample of the third substudy. Three of the ten clients were first-time referrals, while the remaining seven had been in treatment before, three of these for more than three years. Five were in school full-time at the onset of the intervention, one part-time, while four of the ten had dropped out of school prior to taking part in the FT program.

3.4.3 Data collection

In this section, I first present the combined methods of data collection, which included: (i) participant observation, and (ii) interviews. Next, I consider my researcher role through what I have called: (iii) a reflexive positioning.

Empirical data were collected through fieldwork and two rounds of individual interviews with the adolescent participants. The third substudy drew on participant observation and the first round of interviews, which were carried out soon after the intervention came to a conclusion. The fourth substudy was based on the second round of interviews, which took place approximately twelve months post-FT. Participant observation and in-depth interviews were chosen as methods because they complement each other, where the triangulation of the two approaches can provide more insights than either can alone (Claveirole, 2004; Maxwell, 2012).

Participant observation

The main purpose of the fieldwork was to gain insight into the FT process in context, as well as to add nuances and depth to the subsequent rounds of interviewing and data analyses. According to Carnevale, Macdonald, Bluebond-Langner, and McKeever (2008), participant observation is a recommended method for health care research involving adolescents, because it is suggested to: (i) advance our understanding of young clients' experiences in treatment, and (ii) facilitate more symmetrical relationships between researcher and young participants because of its flexible format that allows time for a relationship to develop. Generally speaking, participant observation is suggested to be well suited to explore complex phenomena and treatment interventions (Carnevale et al., 2008; Maxwell, 2004), as well as to assist in ruling out premature and fallible theories or hypotheses (Maxwell, 2004). Participant observation generally requires flexibility and improvisational strategies that are sensitive to multiple and shifting scenarios. Fieldwork is to a large extent subject to the choices and interpretations of the researcher. As an observer, you have a great degree of freedom and autonomy regarding what you choose to focus on, and again with regards to how you then filter, record, and analyze the information (Mulhall, 2003). It can be considered a complex research strategy in terms of navigating two overlapping roles, both being the *main instrument* for gathering data, whilst also having an ongoing *analytic* role given the experiential relationship with the data and the evolving understanding of the research context (Carnevale et al., 2008).

In the present study, I took part as a participant observer throughout the majority of two FT interventions, including the overnight trips. The fieldwork was not structured, but remained open and explorative (Mulhall, 2003; Davies, 2008), thus embracing a naturalistic stance (Mulhall, 2003). Unstructured observations are believed to contribute towards illustrating the whole picture, capturing both context and process, and as such also informing about the influence of nature. The clients and the therapists were informed regarding the purpose of the fieldwork and my researcher role and I attempted to act sensitively and non-intrusively so as not to disturb or interfere with the ongoing therapeutic processes. I participated in the various activities and interacted with the group, while remaining a passive listener during the group therapy sessions.

Fieldnotes were recorded throughout the observation period, which included both structural features of location, participant engagement and interaction, descriptions of events, and reflective notes (Bogdewic, 1999; Mulhall, 2003; Warin, 2011). During the single day sessions, fieldnotes were mostly recorded the same evening or the following day. On the overnight trips, notes were taken *in situ* by retiring to a somewhat discrete location and then finalized shortly upon returning home.

The fieldwork seemed to enable me to establish a basic level of trust with the participants and to ease the communication between us, which appeared to provide a positive foundation for pursuing the subsequent interviewing phase.

Interviews

Two rounds of individual interviews with the adolescent participants were carried out. The first round of interviews took place between two to four weeks after the conclusion of the FT program, whereas the follow-up interviews were carried out approximately a year after the program ended. Each participant decided where they preferred to meet and the interviews took place in different locations, either privately in participants' homes or in public locations such as at school, cafés, at the hospital, or outdoors. The individual adolescent and myself were the only partakers in most interviews, with the exception of a few interviews where a parent was either present or nearby, upon request from the adolescent. The first round of interviews lasted between 27 to 81 minutes, while the follow-up interviews lasted between 37 and 85 minutes. All interviews were audio recorded and transcribed verbatim in Norwegian by me. Upon publication a bilingual academic assisted in the process of translating interview excerpts into English in order to attempt conveying an accurate interpretation.

The conversations was supported by a semi-structured interview guide, where the first round of interviews initially mapped how the participants described their psychosocial difficulties, previous treatment experiences, reasons for referral to treatment, and expectations to FT prior to participating, before moving on to exploring the subjective experiences of the FT program more specifically. The follow-up interviews focused on the post-FT time period, inquiring into how the adolescents had managed since the program came to an end and what they perceived to be the outcomes from participation in FT. The possible enabling and restricting factors that were believed to having influenced these processes were also explored. Although I had a certain structure or progression of the interview in mind, I encouraged an informal, conversational atmosphere and maintained the flexibility to accommodate and follow up on perspectives introduced by the adolescents (Claveirole, 2004).

Interviewing skills were transferred from previous clinical and more informal experiences of conversing with adolescents. At the beginning of each interview I explained the importance of and my interest in the participants' particular point of view, in a sense placing the adolescents in what Berger (2015) has referred to as an *expert position*, and myself as the learner. As part of the learning process that ensued, I allowed myself to for instance express puzzlements and use probing questions in a sensitive manner in order to obtain frank and substantive interviews (Smith & Elger, 2014). The main idea being to acquire thick descriptions, exploring how and why experiences and processes were considered to be beneficial or not, all along seeking to arrive at 'the whole story'. At times, one might find "several competing stories" (Duncan, Miller, & Sparks, 2007, p. 36) due to the complexity of some accounts, when one in therapy and research alike often attempts to pursue both:

> … the confusion and the clarity; the suffering and the endurance; the pain and the coping; the desperation and the desire. In essence, listening for heroic stories suggests that counselors [and researchers] open themselves to the existence of several competing stories about client's experiences.

This understanding of the whole picture–or story–fits well with the goal of a realist approach to capture examples of "success, failure, and various eventualities in between" (Wong et al., 2013, p. 1006). Having presented the two methods of data collection, we shall now consider the researcher role for a moment.

A reflexive positioning

Reflexivity involves turning the researcher lens back onto oneself to recognize and take responsibility for one's positioning throughout all stages of the research process, here understood as a "continual internal dialogue and critical self-evaluation" (Berger, 2015, p. 220). Reflexivity concerns the influences I as a researcher and a person may have on the setting and people studied, the questions being asked, the data collected, and ultimately for the interpretations and conclusions of the study. While such effects are likely to exist in all forms of research, qualitative researchers tend to recognize and address them as an inherent part of the research process, for instance through establishing a *habit of self-analysis* (Claveirole, 2004), or what I have here called a *reflexive positioning*.

A habitual self-analytical stance was particular salient in the context of the present study as I in many ways could, and indeed should, be considered an insider. The clinical research project was situated in the Department of Child and Adolescent Mental Health (Abup) at Sørlandet Hospital where I had worked as a clinician for more than ten years. I started off as a clinician in the FT project as well, although when entering into the empirical stage of the project my positioning became an explicit researcher role. I still knew the therapists well and was to a large extent familiar with the friluftsliv tradition, the treatment approach, and the client population on a more general basis. However, to the participants in this study I was introduced as and related to them through my role as a researcher.

Studying the familiar holds both advantages and challenges, Berger (2015) reminds us. While advantages to an *insider position* could for instance include facilitating an easier entrée and provide a head start in terms of knowledge about the topic, what questions to ask, and how to ask them. Additionally, Berger (2015) suggests that one may be more sensitized to certain dimensions of the data, such as implied content and possibly be able to understand participant responses in nuanced ways, hence: "hear the unsaid, probe more efficiently, and ferret out hints that others might miss" (Berger, 2015, p. 223). On the contrary, familiarity can pose a number of risks, including blurring boundaries and imposing own values, beliefs, and perceptions onto the subject under study. One must be particularly cognizant of the possible projection of biases and allegiance effects. For Frank (1997, p. 89) however, the goal is not necessarily to attempt eliminating or neutralizing bias, but rather to "use it as a focus for more intense insight", for instance through engaging in reflexivity.

In terms of my interaction with the participants more specifically, there are potential risks related to familiarization over time that can go both ways, according to Berger (2015). The participants might for instance withhold information that they assume is obvious to me, whereas the researcher could be prone to for instance overlook important details, as well as taking similarities–or differences for that matter–for granted. It was therefore considered imperative that I attempted to critically self-evaluate how I processed what the participants told me through the filters of my experiences, in order to minimize potential obstacles to my ability to remain "true to the voice" (Berger, 2015, p. 228) of the participants.

Regarding the more practical navigation of the researcher role in the field, there were potential dilemmas to be prepared for. Despite a participatory role, I positioned myself to where I would not initiate any activities or solve any typical leader-directed tasks. I regarded this aspect of my positioning as crucial in order to prevent me from straying from the researcher role. In addition, I made an agreement with the clients, the therapist teams, and myself, that in situations where a participant was in need of care or attention, I would let the therapist know rather than be tempted to intervene myself (unless critical). Similarly if topics of particular concern came up during conversations, I was obliged to share this information with the therapists, preferably together with the participant. In instances where I became uncertain whether a participant recalled that I was a researcher, I would simply express my concern. On the few occasions that this actually happened, the participants would reply something along the lines of: "yes, of course I know that", which was reassuring.

The researcher role and in particular the relation to the adolescent participants is further considered in the section on ethical considerations (see 3.5), whereas potential bias in relation to analyses is discussed in the section on causal explanation and validity (see 3.1.2). Having presented the methods and procedures for data collection, and briefly considered a reflexive positioning, we now move on to the data analysis.

3.4.4 Data analysis

In this section, I present the analytical process, which included the following four stages:

(i) initial description, (ii) analytical resolution, (iii) abduction, and (iv) retroduction. These stages are drawn from a critical realist framework for explanatory research, developed by Danermark et al. (2002, p. 109–111). A flexible and iterative application is encouraged, in which the various stages intertwine.

Initial description

The first stage simply entailed gaining an overview and beginning to describe the subject–or process–under study, guided by the question: *what is happening?* In the third substudy this meant describing what appeared to take place in the FT treatment process, whereas the fourth substudy enquired into what seemed to have happened as a result of the previous participation in the FT program. This initial analytical phase involved repeated readings of fieldnotes and/or interview transcripts, operationalizing the adolescent perspective as the focal point, which amounted to a set of tentative descriptions to build upon in the subsequent stages.

Analytical resolution

In the second stage of the analysis, the idea was to begin dissolving the complexity of the processes under study. The guiding question was still: what is happening, however simultaneously began moving towards: *why is this happening?* In the third substudy this entailed starting to distinguish the contextual premises and potential therapeutic mechanisms, along with the possible influential both enabling and restricting factors. The WT clinical model (PII) was applied as a structuring conceptual framework for carefully systemizing the more detailed descriptions.

In the fourth substudy we attempted to understand the change processes the individual clients reported being, or having been, engaged in as a result of participating in the FT program, and furthermore exploring possible enabling and constraining factors for engaging in these processes. This second stage of the analysis was more creative in terms of drawing out and continuously adjusting and refining mindmaps illustrative of the processes under study.

Abduction

In the third phase of the analysis, we engaged in the abductive stage, which in essence meant potentially redescribing, refining, and/or recontextualizing the preliminary descriptions derived through the two previous stages, by subjecting these to new frames of thinking. The guiding question was: *how could the explanation be different?* As such, abduction implied challenging and extending the tentative working hypotheses in order to attempt arriving at more nuanced and deeper conceptions of the subject under study.

This stage involved an intensive period of rereading WT-specific publications as well as relevant literature from allied fields, the idea being that several frames of interpretation could complement or challenge each other. At times these were integrated, and other times after having considered various perspectives, new insights appeared to emerge.

Retroduction

In the fourth stage of the analytical process, the purpose of retroduction was to seek to arrive at the basic characteristics, also called *transfactual conditions*, of the processes under study. Transfactual refers to attempting to move beyond the empirical, while conditions are understood as the necessary circumstances for something to take place. The guiding question was: *what basic conditions must exist for this to happen?*

Thus, this final stage of the analyses implied advancing beyond or beneath the level of empirical observations and attempt to reach the underlying explanations for why something appeared to be a certain way and not different. Counterfactual thinking was at times useful, where a phenomenon was examined in relation to its opposite, e.g., FT versus conventional treatment forms.

Following each stage, preliminary descriptions and propositions were presented to the research team, the three co-authors (LEG, AJWA, & TM), for thorough discussions concerning alternative interpretations and perspectives. Before representing the final accounts, a more critical stage of searching for overlooked or contradictory indications in the empirical material were performed to enhance the validity (see 3.1.2) of the analyses and proposed results. Now having described the analytical process, we have arrived at the ethical considerations.

3.5   Ethical considerations

In this section, I consider the ethical challenges, and also possibilities, inherent to inviting and accommodating adolescent participants in clinical research.

Research that involves young people and vulnerable populations, in this study including adolescent clients who are in specialist mental health treatment, can pose challenges from an ethical point of view (Damianakis & Woodford, 2012; Warin, 2011). However, Woodgate, Tennent, and Zurba (2017) recently emphasized the importance of including children and adolescents as competent actors in clinical research and service evaluation, hence representing a shift from a previously indirect child perspective into a more proactive *child's perspective* (Söderbäck, Coyne, & Harder, 2011, p. 100). According to Nairn and Clarke (2012), real improvement in services for children and adolescents can only be attained through young persons' direct involvement in research and evaluation, where overprotection on the contrary may silence vulnerable populations when limiting their participation. Woodgate et al. (2017) instead reiterate the need for developing research methodologies that can better accommodate and understand young participants on their own terms.

The three conventional standards of research ethics include ensuring free and informed consent for participants, upholding confidentiality and privacy, and thirdly undertaking research that protect participants or at the least do not cause any harm (Damianakis & Woodford, 2012; Swartz, 2011). When it comes to informed consent and the accommodation of young participants in research more specifically, "process consent" (Ellis, 2007, p. 23) is recommended rather than treating informed consent as a punctual procedure. This means that consent should be reconsidered and reconfirmed at various points throughout the course of a study. In Norway, young people over the age of sixteen are deemed capable of providing consent in their own right regarded that they are in a position to comprehend the circumstances regarding their participation. In the present study, consent was treated as a continuing process rather than a single event, where free and informed consent was reconfirmed at various stages of the project; initially by detailed conversations that were followed by the formal signing of the informed consent form, through to the final round of interviews that were carried out approximately a year after the intervention ended.

When it comes to the second standard of upholding participant confidentiality and privacy, this becomes increasingly challenging when engaging small groups in which individuals know one another combined with the desire to develop rich, contextualized and thick descriptions (Damianakis & Woodford, 2012). Tactics used to reduce confidentiality-breaching risks in this study included, in addition to giving the participants the right to refuse to answer any question and withdraw at any time, identifying participants with codes, attempting to remove identifying information, myself transcribing all of the interviews, as well as anonymizing transcriptions. Still, when for instance using participants' words, even with pseudonyms or no name provided, in reported findings, one risk unintentionally disclosing participants' identities (Damianakis & Woodford, 2012). One should therefore assess for any risks associated with exploring multiple diversities or using exemplar cases, and furthermore: "reflect on the extent to which the greater degree of specificity might increase the risk of breaching confidentiality" (p. 716), which relates to 'the ethics of what to tell' (Ellis, 2007). Generating new knowledge and protecting confidentiality are both important aspects of a research process. However if an ethical choice must be made, confidentiality and preventing participant harm must take precedence (Damianakis & Woodford, 2012). Additional strategies in the present study included altering presented narratives slightly and omitting identifiable details. Furthermore, the inclusion of two clinical groups in the study, the presence of male and female participants in both groups, and not referring directly to either group in the findings, were aspects that arguably increased the level of confidentiality.

Beyond the aforementioned basic procedural recommendations, Woodgate et al. (2017) suggest that ethical considerations should also include *relational ethics*, where they propose a framework for "mindful presence" (see figure 3; Woodgate et al., 2017, p. 7). This framework illustrates a set of qualities on the part of the researcher, which altogether are intended to establish and sustain a mindful relation in the interaction with the adolescent participants. Relational ethics are closely related to 'ethics of care' (Ellis, 2007), where we as researchers overall are expected to act in humane and non-exploitative ways while being mindful of our role as researchers (Guillemin & Gillam, 2004).

Figure 3. Mindful presence
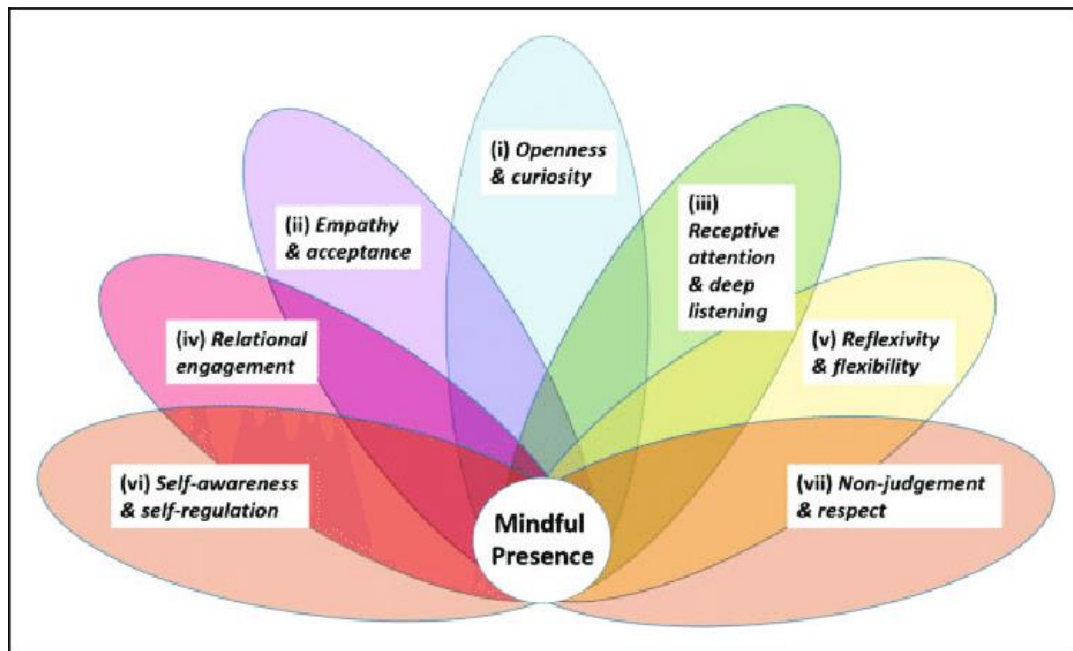
(Woodgate, Tennent, & Zurba, 2017, p. 7)

Having involved children and young people in their own research, Woodgate et al. (2017) found that the sustenance of a mindful presence could serve various purposes. First, it appeared to provide a safe and comfortable space or environment for the young participants. Second, it could also be a means to remain cognizant of the participants' physical and psychological state. Third, this insight seemed to prevent them from placing demands on the youth that could cause harm to them in any way. These aspects are important because qualitative research at times can be perceived as burdensome for participants. Participation in research can for instance involve considerable time and emotional investments on the part of the young person, which in essence can entail being asked a lot and not given all that much in return. While interviews can hold opportunities to express "personal truths" (Woodgate et al., 2017, p. 4) that may be desirable or helpful for some; for others interview situations can be experienced as distressing at times (Claveirole, 2004).

One example from the present study that may illustrate the latter points includes an incidence where a female participant all of a sudden started to cry during the follow-up interview. Considering that the question itself was not prying into specificities, more along the lines of a general enquiry into how things were at school nowadays, I was caught a bit off guard by her reaction. I paused for a moment and soon offered her to

end the interview, or at least take a break. However she remained seated next to me on the sofa in the living room of her family home with tears streaming down her face. We sat together in silence for a while until she a few minutes later stated that she was ready to continue our conversation. After the interview, she remarked that she was surprised and a little embarrassed by her emotional reaction. At the same time she felt grateful for having realized the pressure she had put on herself with regards to school as of late, because she was then in a position to make the necessary adjustments in order to decrease the current level of stress in her life.

The example above also illustrates another dimension of ethical considerations, proposed to be *situational ethics* (Ellis, 2007; Swartz, 2011), also called 'ethics in practice' or 'microethics', which deals with the range of unpredictable, often subtle, ethically important moments that come up in the everyday research practice (Guillemin & Gillam, 2004). In the context of this study, ethics in practice could relate to situations occurring throughout participant observation in the two FT programs and reactions that could potentially be triggered during interviews.

My main strategy (see reflexive positioning in section 3.4.3) involved an agreement with the participants and the therapists that I would let the therapist team know when a participant was experiencing distress or reported potential harmful conditions. Likewise during and after the interviews, I had the opportunity to contact the FT therapist team or primary therapist for support if need be. In practice my prior experience from conversing with adolescents about potentially sensitive topics, combined with a mindful presence (see figure 3) and reflexive positioning (see 3.4.3), appeared to facilitate a safe environment where the participants were in control and deciding what information to share with me.

Furthermore, communicating with the participants about how their stories will be used, for instance by benefiting other young people in related contexts, is another important aspect of relational ethics (Carnevale et al., 2008; Woodgate et al., 2017). It also relates to Swartz' (2011) understanding of emancipatory and reciprocal research involving vulnerable populations, where "going deep and giving back" (p. 65) means that one first 'goes deep' and engages in the research process in order to attempt to understand the adolescent participants and their experiences on their own terms. Then use this information to make appropriate changes and suggestions that can potentially benefit the adolescent participant and also the context of the study, in this case the

adolescent mental health services, and as such 'giving back' (Swartz, 2011). This was mentioned as a motivating factor for the participants in the present study. Considering that FT was a new approach to adolescent mental health treatment in Norway, the participants expressed that it made sense that we were interested in their feedback and that it was considered a meaningful endeavor for them to contribute towards.

Finally, formal approvals were obtained from the Regional Committee of Medical and Health Research Ethics (REC) South East Norway (No. 2013/1841, see Appendix I).

In this chapter, having addressed the critical realist foundation of the overall study, the methods and procedures of the four substudies, and some of the ethical considerations regarding involvement of adolescent participants in clinical research, we now move on to the summary of the main findings of the four substudies.

4 Summary of main findings

In this chapter, the main findings of each of the four substudies are summarized: (i) therapy in the open air, (ii) unpacking the black box, (iii) therapy the natural way, and finally (iv) emerging stories of self.

4.1 Paper I: Therapy in the open air

The state-of-knowledge review provided a glimpse into the diversity represented in the field of WT internationally, where core factors, commonalities, and variations found across different contexts and traditions were exemplified. According to the synthesis of the body of research, outcome studies were overall promising; however more insight particularly into the treatment process in relation to longitudinal outcomes seemed warranted, supported by theory and participant perspective (see PI for more details). Furthermore, the following challenges were elicited:

i. WT is not established within mental health care systems–or continuums of care–most places, which partly plays into a debate as to whether the way forward is to collectively strive towards acquiring recognition as an evidence-based practice. A middle-ground has been suggested, where both so-called structure- and process-oriented perspectives may complement each other rather than having one paradigm rule out the other.

ii. The WT treatment context requires particular ethical considerations and awareness, for instance in terms of maintaining the same level of confidentiality and boundaries in the wilderness compared to more traditional treatment settings, as inherent formalities are not necessarily transferred to the outdoors.

iii. Region-specific challenges in WT practice may for instance include the considerable cost and duration of programs, as well as the removal of adolescents far from home environments at times against their will.

Finally, considering the relevance of these challenges in a Scandinavian context, a number of them are likely to be resolved in the event that WT was to be implemented into the established universal health care system. Not only would the treatment option be readily available to potential participants, but the generally voluntary and outpatient basis of mental health care in this region would hope to keep additional disruption to a

minimum. However, WT-specific ethical considerations have yet to be articulated for Scandinavian treatment contexts. This first paper was published in *Scandinavian Psychologist*.

4.2 Paper II: Unpacking the black box

The second substudy–the realist synthesis–proposed a number of configurations that comprised in-depth descriptions of influential contextual factors and therapeutic mechanisms in relation to the treatment outcomes that were reported across the included primary WT studies (see PII for more details).

The *wilderness therapy treatment milieu model* (Russell & Farnum, 2004) was applied and tested in the review. While the findings reported across the included studies to a large extent supported the existing program theory, the synthesis also identified a set of mechanisms and outcomes that the framework was not found to accommodate in its present form. These processes, which comprised what appeared to be a range of psychological dimensions, including mental resiliency, emotional maturation, cognitive reflection, positive self-evaluation, self-efficacy, self-esteem, and self-awareness arguably exceeded the three therapeutic factors: *the wilderness, the physical self, and the social self* (Russell & Farnum, 2004).

Thus, the realist review amounted to a proposed extension of the applied program theory by integrating a psychological dimension into the third therapeutic factor, arriving at a refined conceptual framework called the *wilderness therapy clinical model* (see PII), which consisted of three therapeutic factors: (i) *the wilderness*, (ii) *the physical self*, and (iii) *the psychosocial self*.

Further testing and refinement of the WT clinical model is warranted considering the number of limitations of the synthesis. For instance, there were very few accounts across the included primary studies that reported on WT treatment not working, either partially or entirely. Furthermore all of the studies originated from the United States, where one individual scholar was involved in more than half of the included studies, along with the applied program theory. Implications were therefore that future research, in addition to critically examining neutral and negative findings, should represent more countries and an increased number of active researchers supporting the advancement of the field internationally. This second paper was published in *Qualitative Health Research*.

4.3 Paper III: Therapy the natural way

The third substudy entailed a realist exploration of the FT treatment process, which amounted to a total of eight therapeutic processes–or mechanisms. These were again attempted to be understood and explained in light of influential, both limiting and enabling, contextual factors. Finally, through the last stage of the analysis (see retroduction, 3.4.4) we proposed three underlying conditions for the therapeutic process.

In this section, these rather complex processes are briefly summarized across the three therapeutic factors of the WT clinical model: (i) the wilderness, (ii) the physical self, and (iii) the psychosocial self. Finally, the (iv) underlying conditions of the FT treatment process are described. However, these various dimensions to a large extent overlap and interweave across the three main factors (see PIII for further details; see figure 4 for complete overview of proposed mechanisms and underlying conditions).

4.3.1 The wilderness
Venturing outdoors: the catalyst effect
The first mechanism seemed to arise from the individual participant's proactive decision to take part in the FT treatment, despite the many possible barriers present in that young person's life. Opposing these often long-held constraints, e.g., physical fatigue, depression, or social anxiety, in such a concrete manner, appeared to have a potential empowering and emancipatory quality to it.

Another set of dimensions to the catalyst effect was the experience of contrasting contexts. These could occur on many levels, such as indoors to outdoors, urban to nature, familiar to non-familiar, passive to active, isolation to socialization and so on. What they all seemed to have in common was the ability to serve as a catalyst for acquiring new experiences, perspectives, and opportunities.

Potential barriers to the catalyst effect were incidences where high symptom levels persisted across the contextual transition and neither decreased over time in the FT setting. Other moderating factors could be the perceived degree of contrast and the extent of challenge inherent in venturing outdoors.

Figure 4. The friluftsterapi findings

- the wilderness
  - venturing outdoors: the catalyst effect
  - from chaos to calm
  - disconnect to reconnect

- the physical self
  - physical feat - emotional emancipation
  - bodymind restructuring: reversing the spiral

- the psychosocial self
  - heterogeneous synergy
  - the intricacies of vulnerability and support
  - therapy the natural way

- underlying conditions
  - voluntary
  - resource-focused
  - multidimensional

- perceived longitudinal outcomes
  - the nature remedy
  - all shook up or shaking it off
  - bodymind insights
  - acceptance of self
  - isolation → socialization
  - (re)establishing agency

From chaos to calm

The second nature-related mechanism arose from the opportunities that the simple outdoor life seemed to offer, which included various calming responses to participants' perceived internal and external chaos. This calm seemed to facilitate cognitive processes when participants were provided the time and space to access their thoughts, where some reported to engage in prolonged undisturbed reflection. While some participants reached a state of tranquility through sitting down in stillness, others had a more active entry where they for instance would feel calmer whilst hiking or when channeling chaotic thinking into a preoccupation with exploring the natural environment.

Disconnect to reconnect

The third nature-related mechanism represented various dynamics of disconnection and reconnection. The simple life in nature encouraged complete disconnection from technology. Although creating considerable temporary unease for some, this could be an important contextual premise for the therapeutic process that ensued. The disconnection seemed to facilitate a redirection of focus where the participants became less apprehensive and more invested in their immediate surroundings. This increased openness was reported to generate attentiveness to the situation here-and-now and a desire to make the most of the present moment, which again offered opportunities for a potential reconnection on many levels. The simple life in nature thus served a dual purpose both in terms of indirectly providing a time-out–or disconnection–from the many limiting preoccupations of modern life, whilst inviting into an open, yet tranquil, environment for the participants to not only reconnect with others and with nature, but also possibly making new discoveries within themselves.

4.3.2 The physical self

Physical feat – emotional emancipation

The first mechanism placed within the second therapeutic factor points to the psychological responses that appeared to succeed physical accomplishments. These processes tended to emerge in the instances where the physical feats were unexpected or had a deeper meaning to them and they often appeared to be accompanied by what seemed to be an emancipatory emotional reaction. Similar tendencies were observed at times when participants were physically worn-out, typically around the campfire in the evenings after having completed a strenuous day, where the participants reported feeling more emotionally engaged and less restricted in their interaction with peers.

However, there were also occasions where physical strains could lead to adverse reactions that could be inhibitive and at least temporarily hinder participant engagement. These reactions tended to manifest after a physical challenge had been overcome per se. Although these incidences were perceived as difficult at the time, these were also the moments where participants gained insights into their physical and mental limitations. In addition, these situations also opened up for the opportunity to receive attention and support from peers and/or therapists, regarded that they allowed themselves to express vulnerability in the presence of others.

Bodymind restructuring: reversing the spiral
The second mechanism of the physical self seemed to arise as a form of restructuring of the body and mind dynamics, where we introduced *bodymind* as a possible neologism for referring to the body and mind as a single integrated unit. A number of the participants expressed being more or less constantly worn-out even at the very onset of the FT program, which were reported to result from internal mental struggle and stress that manifested itself in and through the body. The determination to challenge themselves in the FT setting despite these barriers appeared to initiate movement along what we conceptualized as a bodymind *spiral*. In this metaphor, positive adjustments or realizations along either the physical or mental dimension could support the spiral moving in an upward direction and consequently result in an improved bodymind state. Furthermore, in many situations throughout the FT treatment process the participants would challenge themselves physically and mentally at the same time, to where these experiences could facilitate what appeared to be various expressions of bodymind restructuring and insights.

In the FT setting the interaction with the therapists not only entailed emotional support, but also practical relief including for instance caring for sore feet, preparing nice meals together, and offering advice on how to keep warm at night, as such providing direct and holistic care that in a number of ways could support a conceptualized bodymind spiral turning upwards.

4.3.3 The psychosocial self

Heterogeneous synergy

The first mechanism of the third therapeutic factor reflects the synergy that was reported to evolve out of the heterogeneity found in the FT groups. This synergetic process primarily appeared to create a supportive atmosphere where each participant's individuality was appreciated and welcomed. Secondarily, an implicit understanding seemed to emerge amongst the participants, believed to derive from all of them having experienced suffering of some type. Third, this understanding appeared to condition a less judgmental milieu within the group where a number of the participants reported that they could be themselves.

Barriers to experiencing this synergism appeared to be a reservation or ambivalence towards engaging with the group. In one instance the degree of suffering of one participant was not considered compatible to her impression of the other participants' struggles, which left her reluctant to open up and inhibited her involvement with the others in the group.

The intricacies of vulnerability and support

The second mechanism of the psychosocial self reflects the intricacy inherent in processes involving vulnerability of various kinds combined with attempts at offering and receiving support. Any treatment trajectory is not necessarily a linear process where openness and trust increases steadily over time. To be vulnerable, and remain open, in the presence of others were reported to be intricate matters. Furthermore, it was complicated to accurately assess when another individual would like to be offered support, by whom, and in which manner, throughout the FT process. Attempts at providing support, despite good intent, could be experienced as a form of pressure, whereas successful supportive initiatives could hold great significance on both ends of the transaction.

Previous negative experiences from therapy or from relationships with adults in general, could be at least initial barriers to investing in the alliance with the therapist(s). Some participants preferred support from peers as opposed to the therapists, and a few individuals maintained this reservation throughout the intervention. However, overall the participants expressed contentment regarding the therapists and gratitude for the opportunity to develop what some participants regarded

to be a rather unique therapeutic relationship facilitated by the number of days spent hiking together.

Therapy the natural way

The final mechanism that was proposed in the third substudy arose from the positive connotations the participants overall assigned to the FT experience. Compared to previous experiences from, or impressions of, conventional treatment settings and approaches, the participants reported feeling freer and less confined in nature. FT was generally perceived to be a refreshing and intriguing treatment option that made sense to most, if not all, of the participants. Other dimensions were that many of the participants referred to the FT experience as fun, which was unexpected of a mental health treatment; hence they also expressed feeling less 'in treatment' and less 'ill'. The wilderness treatment context appeared to facilitate a holistic recovery process in terms of both stimulating the body and brain, in addition to facilitate the space and time to unwind and gradually open up to the experience in a manner that for a number of the participants was perceived to be a less intrusive and more natural form of therapy.

4.3.4   Underlying conditions of the friluftsterapi treatment process

Finally, arriving at the fundamental characteristics of the FT program, these were suggested to include the: (i) voluntary, (ii) resource-focused, and (iii) multi-dimensional underlying conditions. The voluntary foundation for participation in FT implied that each adolescent made the decision to take part in the group treatment. Together with the resource-focused approach, the adolescents were invited to be the main navigators of their ventures into nature, where these dimensions could serve as vehicles for reinstating agency in life in a concrete manner. These factors were also believed to hold the potential to facilitate participant engagement and an intrinsically driven motivation. Finally, the multidimensional nature of the therapeutic process was suggested to have the potential to match the complexity of the needs of the adolescent participants, spanning ecological, physical, mental, and social dimensions. As such, proposed to comprise a holistic approach to therapy that was suggested to be both timely and age-appropriate.

The third paper was published in *Qualitative Health Research*. Having briefly presented the main findings of the third substudy, we now move on to the fourth and final substudy.

4.4 Paper IV: Emerging stories of self

The fourth substudy proposed six perceived, longitudinal outcomes from participation in FT. These outcomes should be understood as processes of change that were reported to be ongoing and often fluctuating, and as such not perceived to be finalized or static. In this section, the six proposed outcomes are briefly summarized (see PIV for further details; see figure 4 for an overview).

The nature remedy: new perspectives and strategies

The first longitudinal outcome refers to the various perspectives and strategies acquired in the FT treatment setting, that several of the participants reported to have proactively transferred and adapted into their daily life environments post-FT. Examples include a male adolescent who would go into the woods behind his house when he needed time to think, a female participant who instead of using the Internet as a source of inspiration now preferred nature, and another female participant who would go on evening walks in order to reflect on life and decrease levels of stress. For many of the participants the use of nature or the outdoors would replace being indoors and on the computer. Whereas one participant, while expressing appreciation for having acquired knowledge about outdoor life and what he called a nature perspective, he still preferred to return to his computer and indoor life also post-FT.

Barriers to making use of the nature remedy included distance to natural environments and some admitting needing a little push to seek out nature on their own, or they preferred for someone to join them. The individuals who had not spent time in nature over the last few months reported missing both general and more specific aspects of it.

All shook up or shaking it off: emotional regulation

The second perceived longitudinal outcome was related to emotional regulation. Overall the participants appeared to have gained more emotional control, both in terms of regulating their emotions and feeling more resilient when faced with potential triggers. A number of the adolescents expressed having a more carefree attitude that contributed towards maintaining an emotional equilibrium.

However, two individuals experienced an emotional overload shortly following the conclusion of the group treatment. One of these had felt emotionally numb ever since his mother abruptly left the family when he was five. The other example was explained to be a hormonal reaction as a result of having had his first real-life

conversation with a girl while in the FT program. Although these strong reactions had caused considerable distress for these two participants post-FT, the sudden emergence of new emotions could potentially lead to a more complete repertoire of feelings in the longer run, regarded that the participants in time were able to integrate and regulate these emotions.

Bodymind insights: stabilizing dynamics

Third, many of the adolescents reported not knowing their limits, or window of tolerance, before participating in the FT program. Throughout the treatment process a number of them reported gaining insights into bodymind processes. These realizations primarily seemed to enable the adolescents to attend to and protect these newly discovered limits post-FT, which again helped them establish and maintain a more balanced bodymind status in general post-FT. Secondly, the insights supported some of the participants to in fact challenge their limits, as having established the position of these boundaries could serve as a physical and mental baseline.

Acceptance of self: a source of confidence and patience

Fourth, a number of the participants experienced what appeared to be a cognitive and emotional journey towards increased self-acceptance, which for instance could entail acknowledging their current life situation and coming to realize that there was likely no quick fix for their struggles in life. These processes appeared to involve an acceptance of self on many levels, which not only seemed to be a source of confidence and true self-representation, but was also reported to provide patience that in many incidences appeared to initiate a paced process towards change.

Barriers to these processes included for instance prevailing social anxiety. In addition, some feared that a potential recovery would entail losing their uniqueness, while others would perceive their condition to be chronic to where improvements were regarded unrealistic. Regarding the latter barrier, the diagnostic system could reinforce these beliefs.

Isolation to socialization: crossing that 'mountain'

Fifth, overall, participation in the FT program seemed to serve as a direct vehicle of change for a number of the adolescents in terms of motivating them to become re-engaged in their own lives and keep challenging themselves socially post-FT by for instance taking initiative to interacting more with peers. Furthermore, the four

individuals who had dropped out of school returned to school the same year. While all four were still struggling in school a year later, they were still determined to complete their schooling.

However, one individual stated that although he noticed what he called a 'boost' from participating in FT, he had preferred that the FT intervention had been of longer duration in order to enable him to overcome the social anxiety, which he depicted as a 'mountain' that he had yet to cross.

(Re)establishing agency: increased independence and becoming one's own person

Finally, these fragile steps on the path towards socialization can in critical realist terms be understood as a (re)claiming of agency. These processes were accompanied–or perhaps conditioned by–an increased sense of independence, where approximately a year post-FT a number of the adolescents had accomplished things that they previously had regarded as highly unlikely. Examples include journeys abroad on their own with friends for the first time, one participant travelling by herself to a summer camp with a thousand other adolescents in spite of social anxiety, two participants being engaged in voluntary work on their spare time in addition to having returned to school, and some even allowing themselves to express big dreams about the future when previously having been concerned with merely surviving another day.

These transformations did however not seem to arise as a result of a drastic reduction in symptoms and suffering, but rather appeared to be conditioned by various self-processes, exemplified by a female participant who expressed: 'I am more my own person'. These processes included insights into and increased acceptance of one's self, which were suggested to emerge from a fundamental (re)connection with self.

The fourth article has been submitted to *Journal of Adventure Education and Outdoor Learning*.

The emerging stories of (re)connection not only with self, but also with others and nature, presented throughout the results section, seemed to be at the core of the FT treatment process and the perceived outcomes. Now having briefly presented the main findings of the four substudies, we shall move on to the discussion. The chapter begins with a prologue, in which a brief synthesis of the findings is provided initially. The

synthesis of the findings reflects the previous reference to the core of FT, proposed to be a *stratified, synergetic (re)connection*.

5 Discussion

This overall discussion consists of three parts and a total of six sections. In the first part–the prologue–an ontology of connectedness is introduced, where I present: (i) a brief synthesis of findings, (ii) an optic of interconnectedness, and (iii) an integrative self-understanding. In the middle part, I revisit the three therapeutic factors of the WT clinical model: (i) the wilderness, (ii) the physical self, and (iii) the psychosocial self. Finally, in the last part, I address: (i) limitations, and (ii) implications.

5.1 Prologue: Towards an ontology of connectedness

> *When we try to pick out anything by itself, we find it hitched to everything else in the universe.*
>
> –John Muir (1992)

5.1.1 A brief synthesis of findings: a stratified, synergetic (re)connection

Overall, there seemed to be various forms of (re)connection happening throughout the FT treatment process, suggested to include the self, others, and nature. Such (re)connections were in a number of incidences also transferred and nurtured over the months that followed conclusion of the group treatment, for instance as emerging stories of self.

In this brief synthesis of the findings, I propose that FT in various ways seems to facilitate what I have called a stratified, synergetic (re)connection. What might that mean? First, *stratification* means multi-leveled and in the context of this study it refers to the different levels (re)connections are suggested to potentially occur on simultaneously, i.e., the personal, interpersonal, and person-in-nature levels. Introducing a holistic view on this multi-leveled (re)connection, these processes are together proposed to represent an interconnected whole, where the *synergy* arising in the midst of this interconnected structure may be understood as a dynamic where not only the whole is greater than the sum of its parts, but where each part is also greater as a result of the whole. Furthermore, I propose that a given phenomenon may only become fully visible when applying such a frame of understanding, here called an optic of interconnectedness, which we turn to next.

5.1.2 An optic of interconnectedness

Kerr and Key (2011) propose a new ontological foundation for nature-related or eco psychology research, called *ontology of connectedness*, where understanding nature as a whole system, including humans, is aligned with a socio-ecological understanding. Applying such *an optic of interconnectedness,* also referred to as an "interconnected way of seeing" (p. 53), still allows us to study various 'parts' of the whole, however remaining mindful of the interplay between parts and the aforementioned potential two-way synergetic effects. Conversely, if studying things in isolation, for instance out of context or simplified–and as such disconnected–we risk losing sight of a phenomenon's full nature or whole picture. Such interconnected ways of 'seeing', while more common in eco psychology, e.g., Næss' (1989) gestalt ontology, is relevant to WT. And while WT is frequently depicted as a holistic approach to treatment, an optic of interconnectedness has been less emphasized in the literature to date. There are some exceptions, and I will mention two.

First, Norton (2009) argued for a more comprehensive understanding of connection and relational networks between persons and the natural environment, where a relational view on human development was suggested to be: "strength in relationship, not strength in isolation" (Jordan & Hartling, 2002; cited in Norton, 2009, p. 141). Isolation was considered the source of suffering for many, to where the process of mutual empathy and empowerment was suggested to be a potential route out of isolation, and as such applying a relation lens where human beings grow in, through and toward relationships. On the contrary, strategies of disconnection were suggested to be patterns that seek to minimize the vulnerability in relationships, whereas *enhanced connection* was believed to follow the relational transformation that could emerge when overcoming disconnecting barriers (Norton, 2009). Connectedness was suggested to potentially occur in solitude in nature or in relation with others; the key words being *in relationship*, where nature-assisted group treatments were proposed to facilitate a connection with the social *and* the natural worlds. Furthermore applying this relational view in a case study on the psychodynamics of adolescent depression, Norton (2010) referred to adolescent suffering as affecting the "deep aspects of the self-structure" (p. 232), furthermore proposing that WT had the potential to combat polarization and isolation by supporting the participants in establishing relationships with "the self, others, and the natural world" (p. 230), aligned with the stratified (re)connection.

As such, WT appeared to increase the participants' capacity for relatedness in an experiential way and was furthermore depicted as a holistic intervention that could address the intra-psychic, interpersonal, and also existential aspects of depression.

Second, Rutko and Gillespie (2013) found, in their theoretical review of WT, that when examining different therapeutic components there seemed to be considerable overlap as one dimension blurred into the next. Their observation not only highlights the interconnected reality of the nature-assisted group treatment, but it also supports the contention that it is often the combination of a number of factors that contribute to a potential synergy. Where a critical realist approach, rather than problematizing such an integrative understanding, instead encourages holistic and anti-reductionist efforts to conceptualize multi-faceted, complex and emergent processes. At the same time one should allow for abstracting and unpacking aspects of the 'whole' in order to explain the interplay between these 'parts' or dimensions, whilst acknowledging that all parts together make up an interconnected, permeable, and changing dynamic. Applying this understanding for instance to the WT clinical model, the three therapeutic factors should be considered interconnected, where these main dimensions together make up a 'whole' and as such may be a framework for further exploring the potential synergy that may arise from it. However, in the midst of this interconnectedness, we should not lose sight of the individual adolescent participant. An exploration of the 'whole' should be balanced by an attention to its 'parts', where each person or self is arguably the most important 'part' in the context of adolescent mental health treatment. In the context of a group treatment, and life in general, a self is not only relating to one's self, but is also a self among other selves. Thus, I propose that an integrative self-understanding ought to be incorporated into the ontology of connectedness.

5.1.3 An integrative self-understanding

Having introduced an ontology of connectedness and an interconnected way of seeing (Kerr & Key, 2011), what remains now is the proposal of a slightly more comprehensive self-understanding before embarking on the discussion. The rationale for the latter emerged in the fourth substudy (PIV), where longitudinal outcomes of participation in FT seemed to entail underlying self-processes, which is also in line with Norton's (2010) reference to adolescent suffering affecting the deep structures of the self. However, the use of the self-construct in the WT literature is arguably not well-founded to date (PIV). The idea that the application of a more comprehensive self-understanding could potentially contribute towards reaching more nuanced

conceptualizations of the WT therapeutic process motivated the present proposal of an integrative self-understanding. A simplified version of Smith's (2010, p. 74-75) rather intricate critical realist account of 'what is a person?' will serve as a starting point, where a person–or a self–can be understood as a reflexive, embodied, self-transcending center of subjective experience, with complex capacities for agency and intersubjectivity in order to develop and sustain the self in relation with other personal selves and the non-personal world. That is a mouthful, so I will attempt to untangle it somewhat. First, although a person in an ecological understanding of the self is interconnected with a greater whole, Smith (2010) suggests that a person still represents some form of *centering of subjective experience*. A self is posited to be a focal point of personal being and consciousness, which inhibits internal structures, also referred to as a nucleus that represents a certain continuity of awareness and action over time. This does not mean that persons are perfectly unified or harmonized; quite contrary there may be degrees of disconnection and lack of integration between parts of the self. The *reflexive* awareness–or self-consciousness–entails the potential capacity to look inwards and engage in what Archer (2003) has referred to as 'internal conversations', where we experience ourselves as having an 'inside' of feelings, beliefs, desires and so on. This 'inward' nature has a private quality that according to Smith (2010, p. 66) is: "not accessible to objective observation unless and until we express them through means of communication; and even then it can be impossible to convey the actual qualia of our experience to others". This privacy and its limited access is relevant for human interaction in general, and for psychotherapy and research in particular, in terms of pointing to the interpretive layers involved in communication and hence also qualitative knowledge production.

Although we often refer to subjective processes as our inward nature, Behnke (2010) while agreeing that they arise 'from within' however reiterates that they are not separated from the body itself. This point brings me to the next aspect of the self–our *embodied* nature–which implies that the more intangible, mental or spiritual aspects of our human being would not exist apart from this corporeal materiality. As such, human persons are considered "unified beings of existent duality" (Smith, 2010, p. 63), where the body and immaterial mind is suggested to co-exist in singular unity; also referred to as bodymind in the present study (PIII/PIV). This connectedness to one's reflexive, embodied self can be understood as the first 'level' of the aforementioned stratified (re)connection, and is also proposed to make up parts of the first 'layer' of a proposed *ontology of connectedness* (see figure 5).

Figure 5. Ontology of connectedness

Furthermore, what might a person try to accomplish? Smith (2010) suggests that we all generally seek to develop and/or sustain our selves, and as such we are all understood to be naturally proactive in our own self-creation, where each person is believed to potentially have complex capacities for both agency and intersubjectivity. Generally, *agency* can be understood as the human capacity to employ intention and deliberation, i.e., the choice to make decisions and in turn attempt to enact these (see 3.1.1 on interplay between structure and agency). Agency operates in contexts, which plays into our *embeddedness* as human beings, whereas intersubjectivity refers to the *relational* aspects of our human engagement in the world.

Apart from the ability to engage in subjective reflexivity and self-concern, most people are capable of *self-transcendence*, here understood as the ability to direct our awareness onto a reality beyond preoccupations with one's self. The sustenance and development of the self is proposed to be *relationally contingent*, occurring not only *in relation with other personal selves*, but also the non-personal world, including *nature*. Smith (2010) posits that our very selves grow out of relationships of genuine care for each other that require a certain "giving of the self" (p. 73) in various ways. This relatedness to others can be understood as the second 'level' in the aforementioned stratified (re)connection and is also proposed to make up the next 'layer' or dimension of the ontology of connectedness (see figure 5). Extending this relationship to the non-personal world and in the context of this study to nature, we arrive at our suggested affiliation to the natural environment (see 1.2). This connectedness to nature is suggested to make up the third 'level' of the stratified (re)connection and the final

'layer' or dimension of the proposed ontology of connectedness, that seems to embrace or encapsulate the two other proposed 'layers'–the self and others–of the diagram (see figure 5). Now putting all of this back together, a person can be understood to be *a reflexive, embodied, embedded self with complex capacities for agency, that sustains or expands their self through a relational contingency on others and nature.* This suggested configuration of interconnectedness is attempted illustrated in the diagram of the ontology of connectedness (see figure 5), which also includes the proposed integrated self-understanding.

Just as this conceptualization may convey some of the depth and complexity of human life; it is also intended as a framework for understanding human suffering. In one sense the description may portray an ideal presentation of a self or person as well-capacitated, sociable, and potentially balanced; however it may also apply to instances when a self is fragmented and agency is compromised. For instance, the metaphor *fallen* (PIII) was used to describe the present state a number of the participants reported finding themselves in at time of referral to mental health treatment in the third substudy, applied as a rewriting of Sartre's *original fall* (in Dolezal, 2015). Smith (2010) on the other hand refers to human suffering as a kind of *brokenness,* perhaps better described as *disruption* in a connectedness understanding, which again may result in various expressions of disintegration and disconnection. Such states can manifest on a personal level, e.g., as an incoherent sense of self, while at the interpersonal level it may include hostility, estrangement, alienation, and trauma. According to Smith (2010), these various hosts and expressions of personal, interpersonal, and societal 'brokenness' may be tied together in complicated ways, aligned with a multifactorial understanding of health and ill-health (see 1.2.1), to where one's whole *being*–understood as the sustenance of self–and *becoming*–understood as the developing of the self–can feel compromised.

Having presented an ontology of connectedness, through the brief proposals of a stratified, synergetic (re)connection, an optic of interconnectedness, and an integrative self-understanding, we now move into the main part of the discussion. As I revisit the three therapeutic factors of the WT clinical model and attempt to incorporate these new frames of understanding, this should be considered cautious navigation into less travelled terrain. The reflections that follow must therefore be considered tentative and incomplete, yet intended to potentially serve as a foundation for future theoretical and empirical explorations.

5.2 The wilderness: our equilibrator?

> *Our relationship with nature has been professed since time immemorial as integral to our health and a sustainable existence on earth. From the philosophies of First peoples worldwide, to nature writers, to ecopsychologists, we are continually reminded of the need to remain in a healthy relationship with the natural world that we are simply a part of. It is in this acceptance that humans are nature(al) that society may recognize their innate desire to regain balance.*
>
> –Harper (2012, p. 309)

In this section, I revisit the first therapeutic factor–the wilderness–and consider the potential of the natural environment to serve as an equilibrator, and as such help us regain and sustain a state of balance. In the introduction of this thesis we 'travelled through' the seemingly all-encompassing technification of our life worlds where the mobile phones have become our third layer of skin. Internet, mobile communication, and social media networking making up a so-called 'triple revolution' in social connectedness, where online and offline spaces are increasingly enmeshed into a single all-consuming and potentially overwhelming digitalized reality. While there surely are numerous potential benefits involved in this form of connectedness, *iGen* (Twenge, 2017) is the first cohort of adolescent generations that are currently providing feedback on the state of our *selves* embedded in this techno-social context, and thus far unprecedented levels of maladjustment and loneliness have been reported (Twenge, 2017; Twenge et al., 2017). Next, we introduced an understanding of health and well-being as a state of balance, where in a socio-ecological approach to health, human connectedness to nature is considered important. In particular because of our suggested affiliation with all living things and the potential of the natural environment to help us maintain or regain equilibrium by reducing stress and restore us from fatigue. As such nature is suggested to alleviate the 'too-muchness' of our modern, intensified lives, where a state of imbalance, fragmentation, or *dis-ease* (Gabrielsen & Harper, 2017), can occur both on an intrapersonal, interpersonal, and also societal level.

In the first substudy–the state-of-knowledge review (PI)–nature or wilderness featured as an obvious core therapeutic factor and co-facilitator of WT, where nature as a treatment context versus an institutional setting was found to be important in numerous ways. First, the wilderness surroundings were suggested to reduce adolescent's

resistance towards treatment by allowing them to feel freer and less constrained (Williams, 2000). The natural environment was also proposed to serve as a vehicle for change (Hill, 2007) by providing an unfamiliar and neutral therapeutic context that could open up for new experiences, perspectives and alternative ways of being and becoming.

In the second substudy–the realist review (PII)–we found that depending on the participants' former experiences and connectedness to nature, they were to a greater or lesser extent comfortable in 'the wild'. However, over time nature was generally viewed as a healing place that could facilitate change, supported by stigma seemingly dissolving in the wilderness environment. Therapeutic mechanisms included being away from home environments, experiencing the simpler life in nature, along with opportunities to reflect on life, spend time alone, and to confront problems; while outcomes included finding peace, as well as reaching increased awareness and insights.

In the third substudy–the realist exploration of the FT treatment process (PIII) –we searched for the nature-related therapeutic mechanisms–or opportunities–that seemed to support such processes of being and becoming, where the wilderness appeared to serve as an *equilibrator* in terms of in various ways supporting the participants towards reestablishing balance. In this interception of being and becoming, at times being is more than enough, perhaps in particular for over-stimulated, fatigued or fragmented adolescents. *Being*-in-nature seemed to have the potential to create a space to primarily simply exist, and establishing a foundation for secondarily slowly moving towards *becoming* (whole) again. The proactive decision on the part of the adolescents to participate in the group treatment was the first step towards the aforementioned stratified, synergetic (re)connection, also expressed as a crossing of a threshold (Harper, Gabrielsen, & Carpenter, 2018) in the WT literature. Depending on the contrasting contexts, whether this threshold involved transitioning from indoor to outdoor, urban to nature, passive to active, isolation to socialization, familiar to unfamiliar and so on, this mechanism was conceptualized as the *catalyst effect* (PIII), where venturing into the wild potentially opened up for a number of opportunities for gaining new experiences and perspectives. Another mechanism, called *disconnect to reconnect* (PIII), is at the very core of interconnectedness. Initially this mechanism was described both as the actual disconnection from the Internet and technological devices and as such removing the so-called 'third layer of skin', which did in fact

bring about significant temporarily uneasiness for a number of the participants. However this rather drastic move was another crossing of a threshold into a technology-free, in some sense simpler life in nature. Where for instance time-out from social media appeared to facilitate processes of self-transcendence, as participants' awareness were reported to move beyond preoccupations with one's self onto attention offered to others and nature, i.e., (re)connection. The natural environment seemed to have a dual role in terms of encouraging disconnection from preoccupations of modern life and directly offering a tranquil environment for another kind of connectedness to unfold (PIII). Reconsidering this mechanism it seems to in fact involve a 'double movement' in terms of implying an active *moving away from* one context–or set of conditions–that may be limiting in some form or another, and furthermore *moving into* another context–the FT setting–where other structures and mechanisms come into play. In a sense, participants disconnect from the disconnecting conditions, be it social isolation, gaming, indoor life, or stressful situations, while participation in FT could potentially invite into engaging in (re)connection with self, others, and nature. The (re)connection with nature first and foremost seemed to equilibrate through offering fascination, calm, and ease throughout the FT treatment process. *Fascination* is here understood as the capacity of an environment to effortlessly draw attention (van den Berg & Staats, 2018) and is one of the four aspects that according to attention restoration theory (ART;Kaplan, 1995; see 1.2.2) are suggested to support the restoration of fatigue. The participants in the third substudy expressed being intrigued by a mental health treatment taking place in nature, which often had positive connotations to it and that seemed to enable them to feel freer, less restricted, having fun, and experiencing therapy that invigorated both their bodies and minds–or bodyminds–naturally. As such FT represented an approach to treatment that made sense and was deemed appropriate by the participants, thus described as *therapy the natural way* (PIII). Regarding the three other aspects of ART, *being away* was also found to be important for the participants in the present study, adding to the contrast in the catalyst effect (PIII) and the new perspectives reported as perceived longitudinal outcomes (PIV). The two other qualities proposed by Kaplan (1995)–*extent* and *compatibility*–came up as potential barriers to connectedness in the third substudy (PIII). Two participants did not have their expectations regarding degree of extent and compatibility met, having preferred that FT took place in what they considered to be 'wilder' and more remote nature, as opposed to areas that could be considered semi-wilderness in a Norwegian context.

However overall, being in nature brought about various calming mechanisms for a number of the participants, referred to as *chaos to calm* (PIII), particularly as a consequence of (re)connecting with nature and being allowed the time and space to also (re)connect with self. Calm could be understood as the experience of being or becoming balanced, thus an outcome from the connectedness with nature as the proposed equilibrator, which again could condition experiences of *ease*. Calm as opposed to chaos, and ease as opposed to dis-ease or invasive symptoms, could also entail a certain double movement. Understood as moving away from–or becoming less–constrained by for instance fatigue, stress, anxiety, shame, negative self-image and so on, and potentially moving towards alleviation of some kind or perhaps making suffering more bearable or less restricting in nature. Ease could also be conceptualized as bodily processes, where a body may feel lighter over time, to where you can move more gently and effortlessly. As an intransitive verb, ease can imply, not only such processes of giving freedom, referred to as various forms of emotional and kinesthetic emancipation (PIII); ease can also entail to pass slowly and applying less pressure, which fits well with the friluftsliv approach to the simple, not rushed, not forced, life in nature (PI). These are nuances that can be further explored in the WT and FT context, and that is also related to the suggested importance of the *voluntary basis* as a fundamental condition of the FT program (PIII).

Finally, in the fourth substudy, a number of the participants appeared to have managed to transfer and adapt various strategies which they had acquired in the FT setting– referred to as *nature remedies* (PIV)–into their home environments. These techniques in many incidences involved maintaining the connectedness to nature for instance through the use of calming strategies such as quiet reflection in the woods and evening walks. Others would notice almost immediate upswings in mood simply by transitioning from being indoors to stepping outdoors, similarly to stress reduction theory (SRT; Ulrich, 1983; see 1.2.1), where the psychophysiological effects were suggested to occur within minutes (van den Berg & Staats, 2018). Barriers to maintaining this connectedness were disruption in connections, where nature was not easily accessible or they did not have someone to seek out nature with. Whereas one individual preferred returning to his virtual connectedness over a natural connectedness post-FT (PIV), other participants that had experienced consequential disconnections following FT reported missing the time spent together in nature and its equilibrating potential. Bodymind insights were also reported to serve as a stabilizing factor and we shall consider our embodied nature next.

5.3 The physical self: our embodied being and becoming

When it comes to the human, therefore, reductionist moves, toward either the physical or the mental, the material or the ideal, the corporeal or the spiritual are unacceptable and self-defeating. Humans are embodied souls who can only be well understood and explained in light of that complex reality.

–Smith (2010, p. 22)

In this section, I revisit the second therapeutic factor–the physical self–and consider our embodied being and becoming. The physical self was first introduced in Russell and Farnum's (2004) concurrent model, the WT treatment milieu model (tested in PII), where it was suggested to comprise personal interactions with the wilderness environment, along with activities that facilitated learning and personal growth. In Russell and Farnum's framework, the physical self factor referred to the combined effects of both feeling and looking better through the physical activities that were designed to challenge, whilst also providing opportunities for feedback and success.

To date few studies have explored the biological or physiological dimensions of the AT treatment to the best of our knowledge, and the realist synthesis (PII) included one primary study, by Caulkins, White and Russell (2006) that explored the use of backpacking as a specific physical undertaking in WT. As of late, the physical health impacts from WT have received some attention, including for instance enquiries into body composition changes of adolescent participants in OBH treatment contexts (DeMille, Comart, & Tucker, 2014; Tucker, Norton, DeMille, & Hobson, 2015). DeMille et al. (2014) encouraged future studies to investigate the impact of WT on both the emotional and physical health of participants in order to gain a more holistic picture of the potential outcomes of the treatment. In fact, WT was suggested to offer an integrated care approach to mental health treatment in terms of combining time spent outdoors, physical activity, and positive social interaction (Tucker et al., 2015), where the benefits of physical mobilization in nature more generally can be supported by a rapidly growing literature on green exercise (Gabrielsen & Harper, 2017).

Furthermore, the interplay between cognition and bodily involvement has been examined in the context of nature-based therapy, where Corazon, Schilhab and Stigsdotter (2011) focused on our embodied nature, particularly the sensory-motor system. Corazon and associates reiterated nature's ability to bring about a range of

sensory impressions not only through sights, but also involving smells, sounds and tactile stimulation by various natural phenomena such as the wind, sun and rain, vegetation, insect and animal life. In addition, navigating in the wild was suggested to mobilize a broad array of movements and bodily involvement. Corazon et al. (2011) also pointed to the substantial difference between nature-based and traditional office-based treatments, particularly when bodily mobilization in the outdoors is an integrated part of the treatment process, e.g., therapeutic talk may take place simultaneously as walking in nature. However, the authors also emphasized the limited attention that has been given to examining the relationship between bodily involvement and for instance psychological change in an outdoor setting, and as such proposed that this line of inquiry could be a warranted avenue for future research.

For the time being, we must draw on allied fields in order to develop our understanding of the physical self processes, where perhaps in particular phenomenological writings on embodiment can be a helpful starting point, e.g., Behnke (2010) in the section below and Dolezal (2015; PIII). Literature on embodied, embedded understanding of cognition (e.g., Anderson, 2003; van den Laar & de Regt, 2008) could offer further insight, along with studies on physical activity in general and green exercise in particular.

Explorations into the FT process revealed that the physical self dimension included more than a bodily mobilization, as rather complex processes appeared to emerge. Hence, we adopted the conceptualization *bodymind* (PIII) in order to begin exploring, describing and potentially explain some of these intricate therapeutic mechanisms in greater detail, which entailed moving beyond inherited dualisms such as mind versus body and nature versus culture (Behnke, 2010). When further exploring these bodymind processes in the FT context, we found that contemplation seemed to take place in circumstances where the physical activity was low; however the influence of the environment was higher, such as sitting down in stillness in nature (PIII). In other circumstances, participants were able to reduce chaotic cognition and enter into a more structured way of thinking while being active, for instance whilst hiking or exploring the natural environment (PIII). An additional consideration of the embedded aspect of these processes could look into the importance of for instance whether the hiking and the quiet reflection take place in nature versus an urban environment.

Therapeutic processes that involve periodically slowing down the body and mind–or bodyminds–have been described in the WT literature. For instance the invitation to sitting still in nature for a moment may allow participants the time and space to "noticing thoughts and feelings within the body as they arise" (Nicholls & Gray, 2007, p. 22–23), furthermore potentially entering into an interconnected process that may:

> Slow down the entire nervous system, access calm emotions, and form new neural networks and patterns which in turn, influence our perceptions, emotions, and cognitions … the mind slows down and looks more deeply into what is present in self and the world, and is more able to consider how to create well-being.

This bodymind awareness appears to facilitate a (re)connection with self, where we are accustomed to think of a certain inwardness when referring to the use of reflective practices. While Behnke (2010) understands these 'inner' structures as an awareness arising from within, she emphasizes that these are not separated from the body itself and as such can be understood just as much as a kinesthetic consciousness of being present in one's body. Such mechanisms can be particularly important for participants who in various ways might feel estranged or disconnected from their bodies, or where disintegration manifests in the body. Distress and difficulties may often have bodily expressions–as well as relational consequences–where Behnke (2010) provides several examples. For instance in circumstances where a situation feels hopeless for a person this may result in a withdrawal of the engagement of the world, in essence a disconnection, or in Behnke's (2010) terms: "a sort of encysting of the self" (p. 243). This state appears to share resemblance with the situations reported by some of the participants at the time of referral to treatment, who were socially isolated due to for instance fatigue and/or anxieties (PIII).

The experiential, bodily, and relational dimensions of the FT treatment process on the contrary could potentially support the participants in stepping out of bodily patterns and social withdrawal–as such (re)connecting–or perhaps rather reshaping or making of one's body (Behnke, 2010). The resource-focused and multi-dimensional fundamental conditions of the FT program (PIII) may support such processes of self-shaping, while also being contingent on the participants' active engagement and a certain capacity for what Behnke (2010) calls kinesthetic self-agency.

One example of a potentially kinesthetically induced self-agential transformation includes a female participant who started a hike with a 'fatigued' body, however crossing a kinesthetic threshold on the return hike, she started running and as such 'reshaping' into a 'capable' body, sensing at the same time that something was released in and through her body (PIII). Similar processes could furthermore be moderated or supported by social connectedness, where one example includes a version of bodily emancipation expressed by another female participant, who was able to walk around wearing a short top during the summer following FT without being restricted by a negative body image. She ascribed the increase in motivation and confidence to having experienced the unexpected warmth and inclusion in the FT group (PIV).

Finally, the sociality that may arise amongst adolescents who have all experienced suffering of some kind can also have an embodied dimension to it and as such providing what Behnke (2010, p. 248) calls "a felt texture" in the group. This form of atmosphere can again facilitate a "shared space" (p. 248) that the participants can enter into, rather than being tempted to pull back when faced with other's pain or own vulnerability, and as such also providing a holding environment for embodied, emotional distress. This shared space may foster a sense of belonging and *interconnectedness* (Behnke, 2010, p. 248), which is suggested to potentially condition an embodied authenticity and true self-representation. A successfully negotiated interconnectedness seems to be characterized by the participants not having to deny or hide their pain in the presence of others, and as such nor having to bear their burdens alone. There is an ethical dimension to this interconnectedness, according to Behnke (2010), in terms of finding ways to support others rather than shutting them down and contributing towards the creation of the aforementioned shared space. This is of course expected of the therapists, however according to the present study it was all the more powerful when the adolescents seemed to be able to provide this space for each other, described through the *intricacies of vulnerability and support* (PIII) and *the heterogeneous synergy* (PIII). Concrete experiences of social support have the potential to open up for foreseeing new horizons for sociality, according to Behnke (2010), where the longitudinal accounts provided a number of examples where participants approached these newly discovered horizons and engaged in increased socialization post-FT (PIV). We will now explore the relational dimensions of the interconnectedness further as we move into the third therapeutic factor, the psychosocial self.

5.4 The psychosocial self: our relational contingency

> *We are encouraged to consider our ecological selves, our relationship to all places and living things, and to transcend a narrow definition of self as entity separate from other.*
>
> –Arne Næss (1987)

In this section, I revisit the third therapeutic factor–the psychosocial self–and consider our relational contingency. The third therapeutic factor is arguably the area of research that has received the most attention in the AT and WT literature, particularly in terms of outcomes; whereas more insights into the therapeutic process in relation to these outcomes have been requested (Norton et al., 2014). I suggest that a more nuanced understanding of the self that is relationally contingent on a connectedness to others and to nature, may aid us in our future inquiries into the therapeutic mechanisms of the treatment process, and the post-treatment period alike. For some time now we have been encouraged by the Norwegian ecophilosopher Arne Næss (1987), and more recently by Harper, Gabrielsen, and Carpenter (2018) in the context of AT, to transcend a narrow definition of self and to reconsider an ecological self-understanding. What might this mean and what should we transcend to?

In the prologue I proposed an integrative understanding of self as reflexive, embodied and embedded agents, whom are relationally contingent on a connectedness to others and also nature. In addition to these frames of understanding, I will in this section draw on a conceptual framework called the *self-expansion model* (e.g., Aron, Aron, & Norman, 2001; Aron, Lewandowski, Mashek, & Aron, 2013). This framework, recently introduced by Conlon, Wilson, Gaffney, and Stoker (2018) in an Irish WT study, generally posits that close relationships have the potential to shape and (re)create the self. Not only are we inspired and supported by others, but at times we may even integrate the resources, perspectives, or aspects of the identities of close others (Aron, McLaughlin-Volpe, & Mashek, 2004). The model rests on two key principles, where the first is that a central human motivation is self-development, and furthermore that one way of developing or expanding the self is through close relationships, which is in line with the integrative self-understanding that was proposed in the epilogue.

From a very young age most humans try to not only learn how to walk, talk and explore their surroundings, but equally attempts to interact, attach, belong, and fit in. We may also all feel shame in circumstances where we do not seem to find a place for self and equally feel distraught in situations where our possibilities for being and becoming are restricted (Aron et al., 2004, p. 2004).

Now applying interconnectedness and the self-expansion framework to the FT context more specifically, these dynamics may be found in what have been referred to as a *social microcosm* (Yalom, 2005; PI) or *microcommunity* (Harper et al., 2018; PIII), where these environments may facilitate processes of social connectedness and self-expansion. As relationships are formed, the adolescents–and therapists alike–may make his or her resources available to others or to the group on a whole. And as such, potentially create a reciprocal strengthening process, where helping others may also entail helping oneself. According to Aron et al. (2004) these processes may secondarily involve an unconscious restructuring of the self-system where the perspectives or resources of others become integrated in self, for instance expressed as the emergent shared identities of 'we' and 'us' when participants in the interviews referred back to the FT group (PIII/PIV).

Potential barriers to self-expansions may be fluctuating group trajectories, as opposed to more linear and steady developments of increased trust and openness. Such processes were found to occur on an individual level in the third substudy, when participants felt ambivalent in terms of engaging with and opening up to the group (PIII). Great variance in terms of felt closeness and perceived inclusion can potentially be found within the same group, where discrepancy between the actual and expected degree of closeness can result in participants feeling pressured. One example includes a female participant who perceived that her suffering was more serious compared to her impression of the degree of suffering amongst the other participants in her group, to where she did not feel comfortable opening up to the group (PIII). Such notions easily become barriers to connectedness and possibly also to reciprocal processes of self-expansion. Similarly any restrictions in our ability to control our own environment may have negative impacts on the self, and as such limit the potential to develop and expand (Aron et al., 2004), which again brings us back to one of the proposed underlying conditions for the FT process, suggested to be its voluntary basis (PIII). Other potential barriers to self-expansion include for instance the fear that unique features of one's self are subsumed in the process, which is also related to feelings of

being in control, where one example includes the female participant who expressed reservations to change as she did not want to become like everyone else (PIV). Furthermore, a certain level of connectedness to self may precondition self-expansion, whereas if an individual is fragmented or alienated from self this may pose a hindrance to readiness for self-expansion, according to Aron et al. (2004), stating that: "in order to integrate new knowledge into the self, the self needs to be available to integrate the knowledge into" (p. 117). In other words there must be a receptive self in order for self-development to take place, which may implicate the need for a primary (re)connection with self. A number of the participants in the present study reported that they felt fatigued and overwhelmed by various forms of pressure, chaos, and expectations at the time of referral to mental health treatment. This situation can be understood as a state of over-expansion, where the structural demands are greater than the individual is able to integrate comfortably into his or her existing cognitive capacity. On the contrary an adolescent who has remained isolated over time prior to participating in the FT program, may have experienced a prolonged period of potential under-expansion. Both these scenarios should be cautiously accommodated into the FT treatment context. This is where nature–the equilibrator–may provide the space and time not only to (re)connect with self, but also over time possibly open one's self up to engage in a reciprocal relation with others. A dynamic FT process may ideally accommodate various needs in terms of degrees of more and less exposure, which is likely to be highly subjective and also fluctuate over time. The self-expansion processes may also at times require some assistance from the therapists in order to ensure that for instance attempts at support is not perceived as intrusive in any way, which relates to the mechanisms described in *intricacies of vulnerability and support* (PIII).

A high level of reliance on a connection to other(s) or factors external to self, as opposed to a connection to self, is an aspect that can render an individual particularly vulnerable to distress at relationship loss (Aron et al., 2004) or various forms of disconnection, e.g., conclusion of the FT program. In the present study, participants who reported a stronger connection to nature, as opposed to social connectedness, appeared to experience some form of a loss if not able to maintain the relatedness to nature post-intervention (PIV), which could implicate a need for FT-specific follow-up. Just as the *formation* of a relationship–or connectedness–may create positive affect, the potential *loss*, distancing, or discontinuation of a relationship can result in negative affect and a possible 'contraction of the self' (Aron et al., 2004), similar to

Behnke's (2010) aforementioned 'encysting of self'. However, studies that investigate relationship dissolution also often report that separation–or some forms of disconnection–have the potential for personal growth, greater independence, and autonomy. In addition, such transitions may initiate revisions of the self-concept as well as spark opportunities for self-actualization and self-knowledge, where participants in the present study shared a number of examples of personal growth, increased independence, and agency across the longitudinal accounts (PIV). These perceived processes entailed the initiation of new connections in different contexts, learning new things, and exploring the aforementioned 'new horizons for sociality' (Behnke, 2010), which can be understood as various expressions of self-expansion occurring in their home environments post-FT.

Furthermore, self-expansion may as such not only entail the described *becoming of one's own person* (PIV), but can also include visions of what participants may like or hope to become, also referred to as *future possible selves* (Wainwright, Nee, & Vrij, 2018). As opposed to such hoped-for-selves there can also be versions of self that one is afraid of becoming, also referred to as our *feared selves* (Oyserman & Markus, 1990). Particularly the latter is believed to having been formed from past experiences of for instance failure, humiliation, or guilt, which may have an intense emotional potency (Wainwright et al., 2018, p. 2018) and as such be additional barriers to positive self-expansion. In the present study there were various examples of such expected or feared selves, where for instance mental health struggles that were labeled as chronic appeared to limit the potential for self-expansion and 'future possible selves' beyond an identity as mentally 'ill' (PIV).

Finally, a metaphorical path is suggested to link currently held beliefs about the self and a future possible self. This path may feel impossible to navigate at times due to various perceived obstacles. Potential hindrances may for instance, according to Wainwright et al. (2018), include internalizations of imagined or socio-cultural expectations that can lead young people to outcomes that only reflect these, rather than their real aspirations; relating to the aforementioned embedded aspects of an integrative self-understanding. Perhaps there might be opportunities for adolescents to together take the first few steps both on real *and* metaphorical paths towards 'future possible selves' and 'new horizons for sociality' when mental health treatment ventures *into nature*.

5.5 Limitations

No research is free of the biases, assumptions, and personality of the researcher and we cannot separate self from those activities in which we are intimately involved

–Sword, 1992 (cited in Berger, 2015, p. 229)

There are a number of general and more specific limitations to note. First, an overall possible limitation is my personal contributions throughout all stages of the research process, which has influenced the collection and analyses of data, as well as the representation and discussion of findings. While my familiarity with the subject under study, the therapist teams, and the friluftsliv tradition allowed me to delve into the matter of things, it was all the more required to adopt a habit of self-analysis in order to establish and maintain a critical reflexive positioning. Rather than attempting to eliminate bias instead in the qualitative tradition use it as a focus for more intense insight.

Second, according to a critical realist view and still related to the first limitation, our attempts at understanding and explaining the complexity of a given phenomenon are a product of our own knowledge construction. Our proposed hypotheses and theories should therefore be considered partial, incomplete, and preferably revised through further research (Maxwell, 2012; Walsh & Evans, 2012). This does not mean that all knowledge is equally fallible, rather through applying various strategies one may both generate and test insights into contextualized social processes (Maxwell, 2012; Sayer, 2000), also referred to as local causality (Miles & Huberman, 1984).

Third, this study was limited to include two clinical groups within one WT program situated in the specialist mental health services at a hospital in Southern Norway. The findings are likely to be highly context-dependent as there are potentially great variations found across groups and changing conditions within the same program, let alone spanning cultural and regional contexts. As such, the findings are not necessarily transferable beyond the included sample.

Fourth, the present study and the main project is to the best of our knowledge amongst, if not the first, WT clinical research project that have been carried out in a Nordic, and perhaps European, adolescent mental health care setting. The hypotheses put forth and

the tentative conceptual frameworks are in its early stages. Most aspects of this work is therefore intended to be built upon, tested, and further refined through future in-depth explorations over the years to come.

Fifth, in terms of reassessing the findings more specifically, we must for instance consider the possibility that a change in context regardless whether this change entails nature or not, could play a role in some of the reported findings. For instance, removal from habitual patterns of normal experience into a newer, less familiar context may in itself have psychophysiological effects (Bratman et al., 2012). Furthermore, Lightfoot (1997, referenced in Norton, 2010) points out that simply trying something new can have a positive influence on an adolescent's life situation, engagement, and/or sense of agency, whether this new happens to be FT or another activity, adventure, or intervention. As such, although the participants were asked to report on their perceived experiences and outcomes from the FT treatment particularly, these complex processes and again the adolescents' perceptions of these, are influenced by numerous factors over time in open systems, i.e., real life.

Sixth, in terms of choice of methods more specifically, we opted for a critical realist approach to qualitative research that operationalized the adolescent perspective as our empirical vantage point. While the rationale behind this choice is presented elsewhere (see 3.1.5), an account of limitations should entail a consideration of what could be plausible alternative approaches. In the context of this study, action research could be another interesting choice because it would rely on the adolescents' direct and proactive participation in most, if not all, stages of the research project. Considering that the main project is still in an early stage it is possible to apply this approach in potential future enquiries. Other viable alternatives could for instance include grounded theory in terms of supporting the transitioning from a tacit theory to a more explicit theoretical framework built from the bottom-up. Case studies could be an excellent way to develop further in-depth knowledge of certain 'parts', all along referring to the aforementioned 'whole'.

On a critical note, Dobud (2017) recently proposed that rather than to keep attempting to develop new models or theories of the potential unique factors of AT and WT, a more practical perspective could be to partner with the adolescent clients and apply routines for client feedback and outcome monitoring in order to ensure a helpful and satisfactory alliance and treatment process one client at a time.

5.6 Implications

For, it is from a strong theoretical foundation that we come to know what we are doing and why.

–Rutko & Gillespie (2013, p. 230)

There are a number of general and more specific implications to note. First, continuing on the final comment of the last section, scholars such as Rutko and Gillespie (2013) with reference to the above quote, will argue that a strong theoretical foundation forms the very basis of our practice. Although the diversity found within the 'field' of AT in general, and WT more specifically, pose a considerable challenge for theoretical work; research and deeper understandings have been suggested to potentially become: "the 'soul' that nourishes the future potential of outdoor and adventure therapies around the world" (Richards et al., 2011, p. 88). As such, a general implication from this study is the proposal of tentative theoretical conceptualization based on empirical explorations into a context-specific treatment process and its perceived longitudinal outcomes from WT the friluftsliv way.

Second, in terms of this theoretical conceptualization more specifically, the WT clinical model has been proposed (PII), applied (PIII), and briefly critiqued (PIV) throughout the various substudies. Undoubtedly, the various 'parts' and the suggested 'whole' (see 5.1) of this this tentative framework should be further explored, critiqued, and refined, also in light of the hypotheses that were developed in the present study. The proposed stratified, synergetic (re)connection, the integrative self-understanding, and the reconsideration of the three therapeutic factors in the overall discussion should all not only somehow be reflected in a refined version of the model, but also be further explored.

Third, we still need more knowledge and insights into the ecological paradigm for mental health work in general, and nature as co-facilitator in the WT treatment process more specifically (Taylor et al., 2010). Currently the theoretical understanding of nature's role in WT is largely a patchwork borrowing from other social and psychological disciplines, where references to ART and SRT (see 1.2.2) are used as underpinning theories, still with limited supportive research from within this field in particular (Harper, 2012). While promising, this avenue of investigation arguably

requires further exploration and articulation within the context of WT (Rutko & Gillespie, 2013), where one possible line of enquiry is expressed below.

Fourth, according to Harper et al. (2018) the natural environment can offer opportunities to: "grow and develop in an original manner, a manner less influenced by [the] structures, systems and constraints" (p. 160). These restrictions can refer to contemporary western life in general, which is the reference Harper and colleagues is making above, but in the context of this study it can also point to structures and constraints experienced for instance in more conventional treatment settings. Venturing into nature, whilst the wilderness could certainly pose limitations and challenges at times; the participants overall expressed feeling freer, less constrained by symptoms and both calmer and naturally invigorated. Mental health treatment in nature may as such provide more 'open avenues' for therapeutic work (Russell, 2006; Rutko & Gillespie, 2013). With many of the adolescent clients coming from high-paced, chaotic, and technified environments, the simple outdoor life can invite into a slower paced living where a sense of balance may be regained. Such aspects of restrictions, time and space across contexts could benefit from further exploration and articulation.

Fifth, while there were a number of overlapping findings between the present study and the recent WT study from an Irish context, Conlon et al. (2018) found that *peak experiences* in nature were deemed important for the adolescents' experiences of change. While peak experiences were not explicitly described in the present study, this could be explored further in relation to the mechanisms of for instance physical feat and emotional emancipation (PIII), where the Irish study can offer comparison.

Sixth, there is still a need for more knowledge regarding "who benefits more or less in wild places and why" (Harper et al., 2018, p. 158), where critical realist informed case studies can be helpful when attempting to understand and theorize such 'why' and 'how' questions in-depth (Walsh & Evans, 2012).

Finally, a number–if not all–of the above implications hold relevance for an ethically sound practice (Becker, 2010), where the ethical considerations inherent to adolescent mental health treatment transitioning into the Norwegian woods has yet to be articulated.

6 Concluding remarks

> *The power of nature to restore, heal, and erase the barriers that disconnect us from ourselves, each other, and nature, will always remain somewhat of a mystery. It is hoped that continued dialogue, research, and innovative practice will continue to explore how nature helps facilitate processes.*
>
> –Gass, Gillis, and Russell (2012, p. 108)

Fourteen brave adolescents made the proactive decision to participate in a new group treatment that entailed venturing together *into nature,* accompanied by a therapist team of three and myself as a participating researcher. Numerous parallel processes seemed to unfold among the trees, hiking the trails, paddling the lakes, and gathering together around the campfire in the dark night. Conditioned by a voluntary, resource-focused, and multidimensional foundation, this nature-assisted group treatment is proposed to potentially facilitate a stratified, synergetic (re)connection with self, others, and nature. These interconnected relations are again suggested to support a number of the adolescents to (re)establish and also maintain a sense of balance in life, where the apparent magic but also mystery might lie in the interplay between all of these various dimensions. For the time being all factors must be considered equally important; however some may be more salient at various times for different participants, across changing internal and external conditions, which we ought to gain more insights into. There may also be a number of other dimensions and parts, not yet articulated, that are only awaiting to be discovered and described.

Although FT is neither believed to be a panacea nor represent the treatment of choice for every adolescent (or therapist for that matter), it potentially offers what appears to be a holistic ecobiopsychosocial therapeutic process. Considering the complex needs of the present iGeneration it may possibly be a timely, age-appropriate, and engaging treatment option. Amidst a seemingly 'superconnected' society unprecedented levels of loneliness and psychosocial struggles are currently reported. FT invites adolescents to unplug, at least for a while, which in turn may open up for new forms of connectedness to emerge. As such disconnect to (re)connect. While it is not realistic, nor likely to be desirable, to remain 'unplugged' in our present techno-social life worlds, it comes back to the idea of balance. Where time spent together among the trees may provide open and less restricted avenues for processes of both being and becoming–in and through nature–our equilibrator.

The American poet, Mary Oliver, passed away on January 17th 2019, as I was in the very last stage of this thesis. Early on in the writing process I had added one of her poems, *The Journey,* to one of the initial pages. Now that we have reached the end, *When I Am Among the Trees* is the poem I will leave you with.

When I Am Among the Trees

When I am among the trees,
especially the willows and the honey locust
equally the beech, the oaks and the pines,
they give off such hints of gladness.
I would almost say that they save me, and daily.

I am so distant from the hope of myself,
in which I have goodness, and discernment,
and never hurry through the world
but walk slowly, and bow often.

Around me the trees stir in their leaves
and call out, "stay awhile."
The light flows from their branches.

And they call again, "It´s simple", they say,
"and you too have come
into the world to do this, to go easy, to be filled
with light, and to shine."

–Mary Oliver (2006), *Thirst*

7 References

Alexander, B. (2013). Design of a socio-technical change management process: a critical realist perspective. *International conference on engineering education and research*, 1–5 July, Marrakesh.

Alvesson, M. & Sköldberg, K. (2009). *Reflexive Methodology: New vistas for qualitative research*. 2 ed. London: SAGE.

Anderson, M. L. (2003). Embodied cognition: A field guide. *Artificial Intelligence*, *149*, 91–130.

Annerstedt, M. (2009). Health promotion, environmental psychology and sustainable development – A successful "ménage-à-trois". *Global Health Promotion, 16*, 49–52. doi: 10.1177/1757975908100750

Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health promotion international*, *11*, 11–18.

Annerstedt, M., & Währborg, P. (2011). Nature-assisted therapy: Systematic review of controlled and observational studies. *Scandinavian Journal of Public Health*, *39*, 371–388. doi: 10.1177/1403494810396400.

Archer, M. S. (1998). Realism and morphogenesis. In M. Archer, R. Bhaskar, A. Collier, T. Lawson, & A. Norrie (Eds.), *Critical realism: Essential readings* (pp. 356–381). London: Routledge.

Archer, M. S. (2003). *Structure, agency and the internal conversation.* Cambridge: The Cambridge University Press.

Archer, M., Bhaskar, R., Collier, A., Lawson, T., & Norrie, A. (1998), *Critical realism: Essential readings*. London: Routledge.

Aron, A., Aron, E. N., & Norman C. (2001). The self expansion model of motivation and cognition in close relationships and beyond. In M. Clark, & G. Fletcher (Eds.). *Blackwell Handbook of Social Psychology, vol. 2: Interpersonal processes*. Oxford Blackwell.

Aron, A., Lewandowski, G. W., Mashek, D., & Aron, E. N. (2013). The Self-Expansion Model of Motivation and Cognition in Close Relationships. In J. A. Simpson, & L. Campbell (Eds.). *The Oxford handbook of Close Relationships*. (pp. 90–115). Oxford: Oxford University Press.

Aron, A., McLaughlin-Volpe, A., Mashek, T., Lewandowski, D., & Wright, G. (2004). Including others in the self. *European Review of Social Psychology*, *15*, 101–132.

Becker, S. P. (2010). Wilderness therapy: Ethical considerations for mental health professionals. *Child & Youth Care Forum*, *39*, 47–61. doi: 10.1007/s10566-009-9085-7.

Becker, S. P., & Russell, K. C. (2016). Wilderness therapy. In R. J. R. Levesque (Ed.). (2016) *Encyclopedia of Adolescence* (2nd ed.) (pp. 1–10). doi: 10.1007/978-3-319-32132-5_387-2

Beery, T. H. (2013). Nordic in nature: Friluftsliv and environmental connectedness. *Environmental Education Research*, 19, 94–117. doi: 10.1080/13504622.2012.688799.

Behnke, E. (2010). The Socially Shaped Body and the Critique of Corporeal Experience. In K. J. Morris (Ed.), *Sartre on the Body* (pp. 231–255). London: Palgrave Macmillan.

Berger, R. (2015). Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qualitative Research*, *15*, 219–234.

Bergin, M., Wells, J. S. G., & Owen, S. (2008). Critical realism: a philosophical framework for the study of gender and mental health. *Nursing philosophy*, *9*, 169–179.

Berman, D. S., & Davis-Berman, J. (2013). The role of therapeutic adventure in meeting the mental health needs of children and adolescents: Finding a niche in the health care systems of the United States and the United Kingdom. *Journal of Experiential Education*, *36*, 51–64. doi: 10.1177/1053825913481581.

Bettmann, J. E., Gillis, H. L., Speelman, E. A., Parry, K. J., & Case, J. M. (2016). A meta-analysis of wilderness therapy outcomes for private pay clients. *J Child Fam Stud*, *25*, 2659–2673. doi: 10.1007/s10826-016-0439-0

Bettmann, J. E., Lundahl, B. W., Wright, R., Jasperson, R. V., & McRoberts, C. H. (2011). Who are they? A descriptive study of adolescents in wilderness and residential programs. *Residential Treatment for Children & Youth*, *28*, 192–210. doi: 10.1080/0886571X.2011.596735.

Bettman, J. E., Russell, K. C., & Parry, K. J. (2013). How substance abuse recovery skills, readiness to change and symptom reduction impact change processes in wilderness therapy participants. *Journal of Child and Family Studies*, *12*, 1039–1050. doi: 10.1007/s10826-012-9665-2.

Bettmann, J. E., Tucker, A. R., Tracy, J., & Parry, K. J. (2014). An exploration of gender, client history, and functioning in wilderness therapy participants. *Residential Treatment for Children & Youth*, *1*, 155–170. doi: 10.1080/0886571X.2014.943554

Bhaskar, R. (1975). *A realist theory of science*. London/New York: Verso.

Bhaskar, R. (1986). *Scientific realism and human emancipation*. London: Verso.

Bhaskar, R. (1989). *Reclaiming reality. A critical introduction to contemporary philosophy*. London/New York: Verso.

Bhaskar, R., Danermark, B., & Price, L. (2018). *Interdisciplinary and Wellbeing. A Critical Realist General Theory of Interdisciplinary*. Oxon: Routledge.

Bischoff, A. (2008). Forskning på natur og friluftsliv i Norge. Notat til Nordisk friluftslivsfaglig PhD-samling ved Københavns Universitet [Research on nature and friluftsliv in Norway. Note to the Nordic friluftsliv PhD-gathering at Copenhagen University].

Bogdewic, S. P. (1999). Participant observation. In B. F. Crabtree & W. L. Miller (Eds.), *Doing qualitative research* (2nd ed,. pp. 47–69). Thousand Oaks, CA: Sage.

Bowen, D. J., & Neill, J. T. (2013). A meta-analysis of adventure therapy outcomes and moderators. *The Open Psychology Journal*, *6*, 28–53. doi: 10.2174/1874350120130802001.

Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2012). The impacts of nature experience on human cognitive function and mental health. *Annals of the New York academy of sciences*, *1249*, 118–136. doi: 10.1111/j.1749-6632.2011.06400.x

Carnevale, F. A., Macdonald, M. E., Bluebond-Langner, M., & McKeever, P. (2008). Using participant observation in pediatric health care settings: Ethical challenges and solutions. *J Child Health Care*, *12*, 18–53. doi: 10.1177/1367493507085616.

Caukins, M. C., White, D. D., Russell, K. C. (2006). The role of physical exercise in wilderness therapy for troubled adolescent women. *Journal of Experiential Education*, *29*, 18– 37.

Cervinka, R., Röderer, K., & Hefler, E. (2012). Are nature lovers happy? On various indicators of well-being and connectedness with nature. *Journal of Health Psychology*, *17*, 379–388.

Chayko, M. (2014). Techno-social life: The internet, digital technology, and social connectedness. *Sociology Compass*, *8*, 976–991.

Clark, J. P., Marmol, L. M., Cooley, R., & Gathercoal, K. (2004). The effects of wilderness therapy on the clinical concerns (on axes I, II, and IV) of troubled adolescents. *Journal of Experiential Education*, *27*, 213–232. doi: 10.1177/105382590402700207.

Claveirole, A. (2004). Listening to young voices: challenges of research with adolescent mental health users. *Journal of Psychiatric and Mental Health Nursing*, *11*, 253–260.

Combs, K. M., Hoag, M. J., Javorski, S., & Roberts, S. D. (2016). Adolescent Self-Assessment of an Outdoor Behavioral Health Program: Longitudinal Outcomes and Trajectories of Change. *Journal of Child and Family Studies*, *25*, 3322–3330.

Conlon, C. M., Wilson, C. E., Gaffney, P., & Stoker, M. (2018). Wilderness therapy intervention with adolescents: Exploring the process of change. *Journal of Adventure Education and Outdoor Learning*, *18*, 353–366. doi: 10.1080/14729679.2018.1474118

Cook, E. C. (2008). Residential wilderness programs: the role of social support in influencing self-evaluations of male adolescents. *Adolescence*, *43*, 751–774.

Corazon, S. S., Schilhab, T. S. S., & Stigsdotter, U. K. (2011). Developing the therapeutic potential of embodied cognition and metaphors in nature-based therapy: lessons from theory to practice. *Journal of Adventure Education & Outdoor Learning*, *11*, 161–171.

Cronon, W. (1996). The trouble with wilderness; or, getting back to the wrong nature. *Environmental History*, *1*, 7–28.

Damianakis, T., & Woodford, M. R. (2012). Qualitative research with small connected communities: Generating new knowledge while upholding research ethics. *Qualitative Health Research*, *22*, 708 –718. doi: 10.1177/1049732311431444

Danermark, B., Ekström, M., Jakobsen, L., & Karlsson, J. C. (2002). *Explaining society: Critical realism in the social sciences.* London: Routledge.

Davies, C. A. (2008). *Reflexive ethnography: A guide to researching selves and others* (2nd edn.). London: Routledge.

Davis-Berman, J., & Berman, D. S. (1994). *Wilderness therapy: Foundations, theory & research*. Dubuque: Kendall/Hunt Publishing.

Davis-Berman, J., & Berman, D. S. (2008). *The promise of wilderness therapy*. Boulder: Association for Experiential Education.

Deci, E., & Ryan, R. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies*, *9*, 1–11.

DeMille, S. M., Comart, C., & Tucker, A. (2014). Body Composition Changes in an Outdoor Behavioral Healthcare Program. *Ecopsychology*, *6*, 174–182. doi: 10.1089/eco.2014.0012

DeMille, S., Tucker, A. R., Gass, M. A., Javorski, S., VanKanegan, C., Talbot, B., & Karoff, M. (2018). The effectiveness of outdoor behavioral healthcare with struggling adolescents: A comparison group study a contribution for the special issue: Social innovation in child and youth services. *Children and Youth Services Review, 88,* 241 – 248. doi: 10.1016/j.childyouth.2018.03.015

De Ridder, K. A. A., Pape, K., Johnsen, R., Westin, S., Holmen, T. L., Bjørngaard, J. H. (2012). School dropout: a major public health challenge: a 10- year prospective study on medical and non-medical social insurance benefits in young adulthood, the young-HUNT 1 Study (Norway). *Journal of Epidemiology & Community Health*, 66, 995–1000. doi: 10.1136/jech-2011-200047

Dobud, W. (2017). Towards an evidence-informed adventure therapy: Implementing feedback-informed treatment in the field. *Journal of Evidence-Informed Social Work.* doi: 10.1080/23761407.2017.1304310

Dobud, W., & Harper, N. J. (2018). Of dodo birds and common factors: A scoping review of direct comparison trials in adventure therapy. *Complementary Therapies in Clinical Practice, 31,* 16 – 24. doi: 10.1016/j.ctcp.2018.01.005

Dolezal, L. (2015). *The body and shame: Phenomenology, feminism, and the socially shaped body.* Lanham: Lexington Books.

Duncan, B. L., Miller, S. D., & Sparks, J. (2007). Common factors and the uncommon heroism of youth. *Psychotherapy in Australia, 13,* 34–43.

Ellis, C. (2007). Telling Secrets, Revealing Lives: Relational Ethics in Research with Intimate Others. *Qualitative Inquiry*, *13*, 3–29. doi: 10.1177/1077800406294947

Fortunati, L. (2003). Front stage/back stage: Mobile communication and the renegotiation of the social sphere. In L. Fortunati, J. Katz, & R. Riccini (Eds.). (2003). *Mediating the human body: Technology, communication, and fashion*. (pp. 1–16). Mahwah: Lawrence Erlbaum.

Frank, G. (1997). Is there life after categories? Reflexivity in qualitative research. *Occupational Therapy Journal of Research*, *17*, 84–16.

Frumkin, H. (2018) Foreword. In M., van den Bosch & W. Bird. (Eds). (2018). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. (pp. ix –xi). Oxford: Oxford University Press. doi:10.1093/med/9780198725916.001.0001

Gabrielsen, L. E., & Fernee, C. R. (2014). Psykisk helsearbeid i naturen – friluftsliv inspirert av vår historie og identitet [Mental health work in nature – friluftsliv inspired by our history and identity]. *Tidsskrift for psykisk helsearbeid*, 4, 358–367.

Gabrielsen, L. E., Fernee, C. R., Aasen, G. O., & Eskedal, L. T. (2016). Why randomized trials are challenging within adventure therapy research: Lessons learned in Norway. *Journal of Experiential Education*, *39*, 5–14. doi: 10.1177/1053825915607535

Gabrielsen, L. E., & Harper, N. J. (2017). The role of wilderness therapy for adolescents in the face of global trends of urbanization and technification. *International Journal of Adolescence and Youth*. doi: 10.1080/02673843.2017.1406379

Gass, M. A., Gillis, H. L., & Russell, K. C. (2012). *Adventure therapy: Theory, research, and practice*. New York: Routledge.

Guillemin, M., & Gillam, L. (2004). Ethics, Reflexivity, and "Ethically Important Moments" in Research. *Qualitative Inquiry*, *10*, 261–280. doi: 10.1177/1077800403262360

Hammersley, M., & Atkinson, P. (1995). *Ethnography: Principles in Practice*. (2nd edn.). London: Routledge.

Harper, N. J. (2012). Contact with nature as a research variable in wilderness therapy. In A. Pryor, C. Carpenter, C. Norton, & J. Kirchner (2012). *Emerging insights: Proceedings of the fifth International Adventure Therapy Conference 2009* (pp. 305–315). Prague: European Science and Art Publishing.

Harper, N. J. (2017). Wilderness therapy, therapeutic camping and adventure education in child and youth care literature: A scoping review. *Children and Youth Services Review, 83*, 68 – 79. doi: 10.1016/j.childyouth.2017.10.030

Harper, N. J., Gabrielsen, L. E., & Carpenter, C. (2018). Cross-cultural exploration of 'wild' in wilderness therapy: Canadian, Australian and Norwegian perspectives. *Journal of Adventure Education and Outdoor Learning*, *18*, 148–164. doi: 10.1080/14729679.2017.1384743.

Harper, N. J., Russell, K. C., Cooley, R., & Cupples, J. (2007). Catherine Freer Wilderness therapy expeditions: An exploratory case study of adolescent wilderness therapy, family functioning, and the maintenance of change. *Child & Youth Care Forum*, *36*, 111–129. doi: 10.1007/s10566-007-9035-1.

Hartig, T., Mang, M., & Evans, G.W. (1991). Restorative effects of natural environment experiences. *Environ Behav*, *23*, 3-26. doi:10.1177%2F0013916591231001

Harwood, J., Dooley, J. J., Scott, A J., & Joiner, R. (2014). Constantly connected: The effects of smart-devices on mental health. *Computers in Human Behavior*, *34*, 267–272.

Henderson, B., & Vikander, N. (2007). *Nature first: outdoor life the friluftsliv way*. Toronto: Natural Heritage Books.

Herrman, H., Saxena, S., & Moodie, R. (2005). *Promoting mental health: Concepts, emerging practice.* A report of the World Health Organization, Dept of mental health and substance abuse in collaboration with Victorian Health Promotion Foundation and The University of Melbourne. Geneva: WHO.

Hill, N. R. (2007). Wilderness therapy as a treatment modality for at-risk youth: A primer for mental health counsellors. *Journal of Mental Health Counselling*, *29*, 338–349.

Hoag, M. J., Massey, K. E., & Roberts, S. D. (2014). Dissecting the wilderness therapy client examining clinical trends, findings, and patterns. *Journal of Experiential Education*, *37*, 382–396. doi: 10.1177/1053825914540837.

Howell, A.J., Dopko, R.L., Passmore, H.-A., & Buro, K. (2011). Nature Connectedness: Associations with well-being and mindfulness. *Personality and Individual Differences*, *51*, 166 –171. doi: 10.1016/i.paid.2011.03.037.

Hägerhäll, C., Taylor, R., Cerwén, G., Watts, G., van den Bosch, M., Press, D., & Minta, S. (2018). Biological mechanisms and neurophysiological responses to sensory impact from nature. In M., van den Bosch & W. Bird. (Eds). (2018). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. (pp. 79–88). Oxford: Oxford University Press.

Jagosh, J., Pluye, P., Macaulay, A. C., Salsberg, J., Henderson, J., Sirett E., … Green, L. W. (2011). Assessing the outcomes of participatory research: Protocol for identifying, selecting, appraising and synthesizing the literature for realist review. *Implementation Science*, *6*, 24. http//www.dx.doi.org/ 10.1186/1748-5908-6-24.

Kaplan, S. (1995). The restorative benefits of nature: Towards an integrative framework. *Journal of Environmental Psychology*, *15*, 169–182.

Kaplan, S., & Berman, M. G. (2010). Directed attention as a common resource for executive functioning and self-regulation. *Perspectives on Psychological Science*, *5*, 43–57. doi: 10.1177/1745691609356784

Kaplan, R., & Kaplan, S. (1989). *The experience of nature. A psychological perspective*. Cambridge: Cambridge University Press.

Kaplan, R., Kaplan, S., Brown, T. (1989). Environmental preference: a comparison of four domains of predictors. *Environ Behav*, *21*, 509–530.

Kellert, S.R. & Wilson, E.O. (1995). *The Biophilia Hypothesis*. Washington, DC: Island Press.

Kerr, M., & Key, D. (2011). The Ouroboros (Part 1): Towards an ontology of connectedness in ecopsychology research. *European Journal of Ecopsychology*, *2*, 48–60.

Langeveld, J. H., Israel, P., & Thomsen, P. H. (2010). Parental relations and referral of adolescents to Norwegian mental health clinics. *Nordic Journal of Psychiatry*, *00*, 1–7.

Lariviére, M., Couture, R., Ritchie, S. D., Côté, D., Oddson, B., & Wright, J. (2012). Behavioural assessment of wilderness therapy participants: Exploring the consistency of observational data. *Journal of Experiential Education*, *35*, 290–302. doi: 10.1177/105382591203500106.

Lightfoot, C. (1997). *The culture of adolescent risk-taking*. New York: The Guildford Press.

Louv, R. (2008). *Last child in the woods: Saving our children from nature-deficit disorde*r. Chapel Hill: Algonquin Books.

Magle-Haberek, N. A., Tucker, A. R., & Gass, M. A. (2012). Effects of program differences with wilderness therapy and residential treatment center (RTC) programs. *Residential Treatment for Children & Youth*, *29*, 202–218. doi: 10.1080/0886571X.2012.697433.

Maxwell, J. A. (2004). Using qualitative methods for causal explanation. *Field Methods*, *16*, 243–264. doi: 10.1177/1525822X04266831

Maxwell, J. A. (2012). *A realist approach for qualitative research*. Los Angeles: Sage.

McEvoy, P., & Richards, D. (2006). A critical realist rationale for using a combination of quantitative and qualitative methods. *Journal of Research in Nursing*, *11*, 66–78.

McIver, S., Senior, E., & Francis, Z. (2018). Healing fears, conquering challenges: narrative outcomes from a wilderness therapy program. *Journal of Creativity in Mental Health*. doi: 10.1080/15401383.2018.1447415

McMahan, E., & Estes, D. (2011). Hedonic versus eudaimonic conceptions of well-being: Evidence of differential associations with self-reported well-being. *Social Indicators Research*, *103*, 93–108.

Miles, M. B., & Huberman, A. M. (1984). *Qualitative data analysis: a sourcebook of new methods*. Newbury Park: SAGE.

Muir, J. (1992). *The Eight Wilderness – Discovery Books*. London: Diadem Books.

Mulhall, A. (2003). In the field: Notes on observation in qualitative research. *Journal of Advanced Nursing*, *41*, 306–313.

Nairn, A., & Clarke, B. (2012). Researching children: Are we getting it right? A discussion of ethics. *International Journal of Market Research, 54*, 1–16.

Nicholls, V., & Gray, T. (2007). The role of stillness and quiet when developing human/nature relationships. *Australian Journal of Outdoor Education*, *11*, 21–28.

Norton, C. L. (2009). Ecopsychology and Social Work: Creating an Interdisciplinary Framework for Defining Person-in-environment. Ecopsychology, 1, 138–145. doi: 10.1089/eco.2009.0046

Norton, C. L. (2010). Into the wilderness – A case study: The psychodynamics of adolescent depression and the need for a holistic intervention. *Clinical Social Work Journal*, *38*, 226–235. doi: 10.1007/s10615-009-0205-5.

Norton, C.L., Tucker, A., Russell, K. C., Bettmann, J. E., Gass, M. A., Gillis, H. L., & Behrens, E. (2014). Adventure therapy with youth. *Journal of Experiential Education*, *37*, 46–59. doi: 10.1177/1053825913518895.

Norton, C. L., Carpenter, C., & Pryor, A. (Eds). (2015). *Adventure therapy around the globe: International perspectives and diverse approaches*. Champaign: Common Ground Publishing LLC.

Norwegian Institute of Public Health (2014). *Mental disorders in children and adolescents in Norway – fact sheet*. Oslo: Norwegian Institute of Public Health.

Norwegian Ministry of the Environment (2010). *The nature experience and mental health.* Report of the «outdoor life and mental health» Nordic project. T1474E/2010. Oslo: Norwegian Ministry of the Environment.

Næss, A. (1987). Self-realization: An ecological approach to being in the world. *The Trumpeter*, *4*, 35–41.

Næss, A. (1989). Ecosophy and gestalt ontology. *The Trumpeter*, *6*, 134–137.

O'Mahoney, J., & Vincent, S. (2014). Critical Realism as an Empirical Project: A Beginner's Guide. In: Edwards, P., O'Mahoney, J., & Vincent, S. (Eds.). *Using critical realism to study organisations*. (pp. 1–20). Oxford: Oxford University Press.

Oyserman, D., & Markus, H. R. (1990). Possible selves and delinquency. *Journal of personality and school psychology*, *59*, 112–125.

Pálsdottír, A.M., Sempik, J., Bird, W., & van den Bosch, M. (2018). Using nature as a treatment option. In M., van den Bosch & W. Bird. (Eds). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. (pp. 125–131). Oxford: Oxford University Press. doi:10.1093/med/9780198725916.001.0001

Park, B. J., Tsunetsugu, Y., Kasetani, T., Hirano, H., Kagawa, T., Sato, M., & Miyazaki, Y. (2007). Physiological effects of Shinrin-yoku (taking in the atmosphere of the forest): using salivary cortisol and cerebral activity as indicators. *Journal of physiological anthropology*, *26*, 123–128.

Pawson, R. (2006). *Evidence-based policy. A realist perspective*. London: SAGE.

Pawson, R. (2013). *The science of evaluation. A realist manifesto*. London: SAGE.

Pawson, R., Greenhalgh, T., Harvey, G., & Walshe, K.. (2005). Realist review – a new method of systematic review designed for complex policy interventions. *Journal of Health Services Research & Policy, 10*, 21–34.

Pawson, R., & Tilley, N. (1997). *Realistic evaluation*. London: SAGE.

Pilgrim, D. (2014). Some implications of critical realism for mental health research. *Social Theory & Health*, *12*, 1–12. doi: 10.1057/sth.2013.17

Pilgrim, D. (2015). The Biopsychosocial Model in Health Research: Its Strenghts and Limitations for Critical Realists. *Journal of Critical Realism*, *14*, 164 –180. doi: 10.1179/1572513814Y.0000000007

Pryor, A. (2018). *Outdoor Adventure Interventions – Young people and adversity: a literature review*. Richmond: Berry Street Victoria Inc.

Pryor, A., Carpenter, C., & Townsend, M. (2005). Outdoor education and bush Adventure therapy: A socio-ecological approach to health and wellbeing. *Australian Journal of Outdoor Education*, *9*, 3–13.

Rainie, L., & Wellman, B. (2012). *Networked: The new social operating system*. Cambridge: MIT Presss.

Richards, K., Carpenter, C., & Harper, N. (2011). Looking at the landscape of adventure therapy: Making links to theory and practice. *Journal of Adventure Education & Outdoor Learning*, *11*, 83–90.
doi: 10.1080/14729679.2011.632877.

Rickwood, D., Deane, F. P., & Wilson, C. J. (2007). When and how do young people seek professional help for mental health problems? *Med J Austr*, *187*, S35–39.

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. V. (2005). Young people's help-seeking for mental health problems. *Australian e-journal for the advancement of mental health*, *4*, 1–34.

Rook, G. (2018). Microbes, the immune system, and the health benefits of exposure to the natural environment. In M., van den Bosch & W. Bird. (Eds). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. (pp. 63–70). Oxford: Oxford University Press.
doi:10.1093/med/9780198725916.001.0001

Russell, K. C. (2001). What is wilderness therapy? *Journal of Experiential Education*, *24*, 70–79. doi: 10.1177/105382590102400203.

Russell, K. C. (2003). An assessment of outcomes in outdoor behavioral healthcare treatment. *Child & Youth Care Forum*, *32*, 355–381. doi: 10.1023/B:CCAR.0000004507.12946.7.

Russell, K. C. (2005). Two years later: A qualitative assessment of youth well-being and the role of aftercare in outdoor behavioral healthcare treatment. *Child & Youth Care Forum*, *34*, 209–239. doi: 10.1007/s10566-005-3470-7.

Russell, K. C. (2006). Publishing to the choir or digging deep: Implications of a snapshot of experiential education research. *Journal of Experiential Education*, *28*, 243–247. doi: 10.1177/105382590602800306.

Russell, K. C. (2012). Research and evaluation of adventure therapy. In M. A., Gass, H. L. Gillis, & K. C. Russell. *Adventure therapy: Theory, research, and practice*. (pp. 281–301). New York: Routledge.

Russell, K. C., & Farnum, J. (2004). A concurrent model of the wilderness therapy process. *Journal of Adventure Education & Outdoor Learning, 4*, 39–55. doi: 10.1080/14729670485200411.

Russell, K., Gillis, H.L., & Lewis, T. (2008). A five-year follow-up of a survey of North American outdoor behavioral healthcare programs. *Journal of Experiential Education*, 31, 55–77. doi: 10.1177/105382590803100106.

Russell, K. C., & Hendee, J. C. (2000). *Outdoor behavioral healthcare. Definitions, common practice, expected outcomes, and a nationwide survey of programs*. Technical report. The University of Idaho-Wilderness Research Center.

Russell, K. C., & Phillips-Miller, D. (2002). Perspectives on the wilderness therapy process and its relation to outcomes. *Child & Youth Care Forum*, *31*, 415–437. doi: 10.1023/A:1021110417119.

Rutko, E. A., & Gillespie, J. (2013). Where's the Wilderness in Wilderness Therapy? *Journal of Experiential Education*, *36*, 218–232. doi: 10.1177/1053825913489107

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141–166.

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations of the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*, 1069–1081.

Sayer, A. (2000). *Realism and social science*. London: SAGE.

Selhub, E. M., & Logan, A. C. (2012). *Your brain on nature: The science of nature's influence on your health, happiness, and vitality*. Mississauga: John Wiley & Sons.

Smith, C. (2010). *What is a person?* Chicago: The University of Chicago Press.

Smith, C. & Elger, T. (2014). Critical realism and interviewing subjects. In: Edwards, P., O'Mahoney, J., & Vincent, S. (Eds.). *Using critical realism to study organisations*. (pp. 109 – 131). Oxford: Oxford University Press.

Swartz, S. (2011). 'Going deep' and 'giving back': strategies for exceeding ethical expectations when researching amongst vulnerable youth. *Qualitative Research*, *11*, 47–68. doi: 10.1177/1468794110385885

Söderbäck, M., Coyne, I., & Harder, M. (2011). The importance of including both a child perspective and the child's perspective within health care settings to provide truly child-centred care. *Journal of Child Health Care, 15*, 99–106.

Taylor, D. M., Segal, D., & Harper, N. J. (2010). The Ecology of Adventure Therapy: An Integral Systems Approach to Therapeutic Change. *Ecopsychology*, *2*, 77–83.

Townsend, M., Henderson-Wilson, C., Ramkissoon, H., & Weerasuriya, R. (2018). Therapeutic landscapes, restorative environments, place attachment, and well-being. In M., van den Bosch & W. Bird. (Eds). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. Oxford: Oxford University Press. (pp. 57 –62). doi:10.1093/med/9780198725916.001.0001

Trigwell, J. L., Francis, A. J., & Bagot, K. L. (2014). Nature connectedness and eudaimonic well-being: spirituality as a potential mediator. *Ecopsychology*, *6*, 241–251. doi: 10.1089/eco.2014.0025

Tucker, A. R., Norton, C. L., DeMille, S. M., & Hobson, J. (2015). The Impact of Wilderness Therapy: Utilizing an Integrated Care Approach. *Journal of Experiential Education*, *39*, 15–30. doi: 10.1177/1053825915607536

Tucker, A. R., Smith, A., & Gass, M. A. (2014). How presenting problems and individual characteristics impact successful treatment outcomes in residential and wilderness treatment programs. *Residential Treatment for Children & Youth*, *31*, 135–153. doi: 10.1080/0886571X.2014.918446.

Turkle, S. (2011). *Alone together: why we expect more from technology and less from each other*. Philadelphia: Basic Books.

Twenge, J. M. (2017). *iGen: Why today´s super-connected kids are growing up less rebellious, more tolerant, less happy – and completely unprepared for adulthood*. New York: Atria Books.

Twenge, J. M., Joiner, T. E., Rogers, M. L., & Martin, G. N. (2017). Increases in depressive symptoms, suicide-related outcomes, and suicide rates. *Clinical Psychological Science,* 1 – 15. doi: 10.1177/26702617723376.

Ulrich, R. S. (1983). Aesthetic and affective response to natural environment. In: Altman, I. & Wohlwill, J. F. (Eds.) *Human Behavior and Environment: Advances in Theory and Research, Volume 6*. New York: Plenum Press.

Ulrich, R. S., Simons, R. F., Losito, B. D., Fiorito, E., Miles, M. A., & Zelson, M. (1991). Stress recovery during exposure to natural and urban environments. *Journal of Environmental Psychology*, *11*, 201–230.

van den Berg, A.E. & Staats, H. (2018). Environmental psychology. In M., van den Bosch & W. Bird. (Eds). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. Oxford: Oxford University Press. (pp. 51 −56). doi:10.1093/med/9780198725916.001.0001

van den Bosch, M. & Depledge, M. H. (2015). Healthy people with nature in mind. *BMC Public Health, 15*, 1232. doi: 10.1186/s12889-015-2574-8

van den Bosch, M. & Bird, W. (Eds). (2018). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. Oxford: Oxford University Press. doi:10.1093/med/9780198725916.001.0001

van den Bosch, M., Thompson, C.W., Grahn, P. (2018). Preventing stress and promoting mental health. In M., van den Bosch & W. Bird. (Eds). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. (pp. 108–115). Oxford: Oxford University Press. doi:10.1093/med/9780198725916.001.0001

van den Laar, T., & de Regt, H. (2008). Is Cognitive Science Changing its Mind? *Theory & Psychology*, *18*, 291–296. doi: 10.1177/0959354308089786

Venhoeven, L., Taufik. D., Steg, L., Bonaiuto, M., Bonnes, M., Ariccio, S., De Dominicis, S., Scopelliti, M., van den Bosch, M., piff, P., Zhang, J.W., & Keltnes, D. (2018). The role of nature and environment in behavioural medicine. In M., van den Bosch & W. Bird. (Eds). *Oxford textbook of nature and public health: The role of nature in improving the health of a population*. (pp. 89–94). Oxford: Oxford University Press.

Wainwright, L., Nee, C., & Vrij, A. (2018). "I don't Know How, But I'll Figure It Out Somehow": Future Possible Selves and Aspirations in "At-Risk" Early Adolescents. *International Journal of Offender Therapy and Comparative Criminology*, *62*, 504–523.

Warin, J. (2011). Ethical mindfulness and reflexivity: Managing a research relationship with children and young people in a fourteen year qualitative longitudinal research (QLR) study. *Qualitative Inquiry*, *17*, 805–814. doi: 10.1177/1077800411423196

Walsh, D., & Evans, K. (2014). Critical realism: An important theoretical perspective for midwifery research. *Midwifery*, *30*, e1–e6. doi. 10.1016/j.midw.2013.09.002

WHO (1986). *Ottawa charter for health promotion*. Geneva: World Health Organization.

WHO (2001a). *Basic documents* (43rd edn.) Geneva: World Health Organization.

WHO (2001b). *Strengthening mental health promotion*. Geneva: World Health Organization.

Williams, B. (2000). The treatment of adolescent populations: An institutional vs. a wilderness setting. *Journal of Child and Adolescent Group Therapy*, *10*, 47–56. doi: 10.1023/A:1009456511437.

Williams, F. (2017). *The nature fix: Why nature makes us happier, healthier, and more creative*. New York: W.W. Norton & Company.

Williams, S. J. (1999). Is anybody there? Critical realism, chronic illness and the disability debate. *Sociology of Health & Illness*, *21*, 797–819.

Wilson, E. O. (1984). *Biophilia*. Cambridge: Harvard University Press.

Wong, G. (2017). Getting to grips with context and complexity – the case for realist approaches. *Gaceta Sanitaria*. doi: 10.1016/j.gaceta.2017.05.010.

Wong, G., Greenhalgh, T., & Pawson, R. (2010). Internet-based medical education: A realist review of what works, for whom and in what circumstances. *BMC Medical Education*, *10*, 12. doi: 10.1186/1472-6920-10-12.

Wong, G., Greenhalgh, T., Westhorp, G., Buckingham, J., & Pawson, R. (2013). RAMESES publication standards: realist syntheses. *BMC Medicine, 11*, 21. doi: 10.1186/1741-7015-11-21.

Woodgate, R. L., Tennent, P., & Zurba, M. (2017). Navigating ethical challenges in qualitative research with children and youth through sustaining mindful presence. *International Journal of Qualitative Methods*, *16*, 1–11. doi: 10.1177/1609406917696743

Yalom, I. D. (2005). *The theory and practice of group psychotherapy*. (5th ed.). New York: Basic Books.

Zachrisson, H. D., Rödje, K., & Mykletun, A. (2006). Utilization of health services in relation to mental health problems in adolescents: A population based survey. *BMC Public Health*, *6*, 34. doi: 10.1186/1471-2458/6/34

94

Paper I

Fernee, C. R., Gabrielsen, L. E., Andersen, A. J. W., & Mesel, T. (2015). Therapy in The Open Air: Introducing Wilderness Therapy to Adolescent Mental Health Services in Scandinavia. Scandinavian Psychologist, 2, e14.
doi: 10.15714/scandpsychol.2.e14.

_____

_____

Paper II

_____

Fernee, C. R., Mesel, T., Andersen, A. J. W., & Gabrielsen, L. E. (2019). Therapy the Natural Way: A Realist Exploration of the Wilderness Therapy Treatment Process in Adolescent Mental Health Care in Norway. Qualitative Health Research, 29(9), 1358–1377. doi: 10.1177/1049732318816301.

_____

Appendix I

Ethical approvals

_____

_____

Appendix 2

Informed consent form

_____

_____

Appendix 3

Interview guides

_____