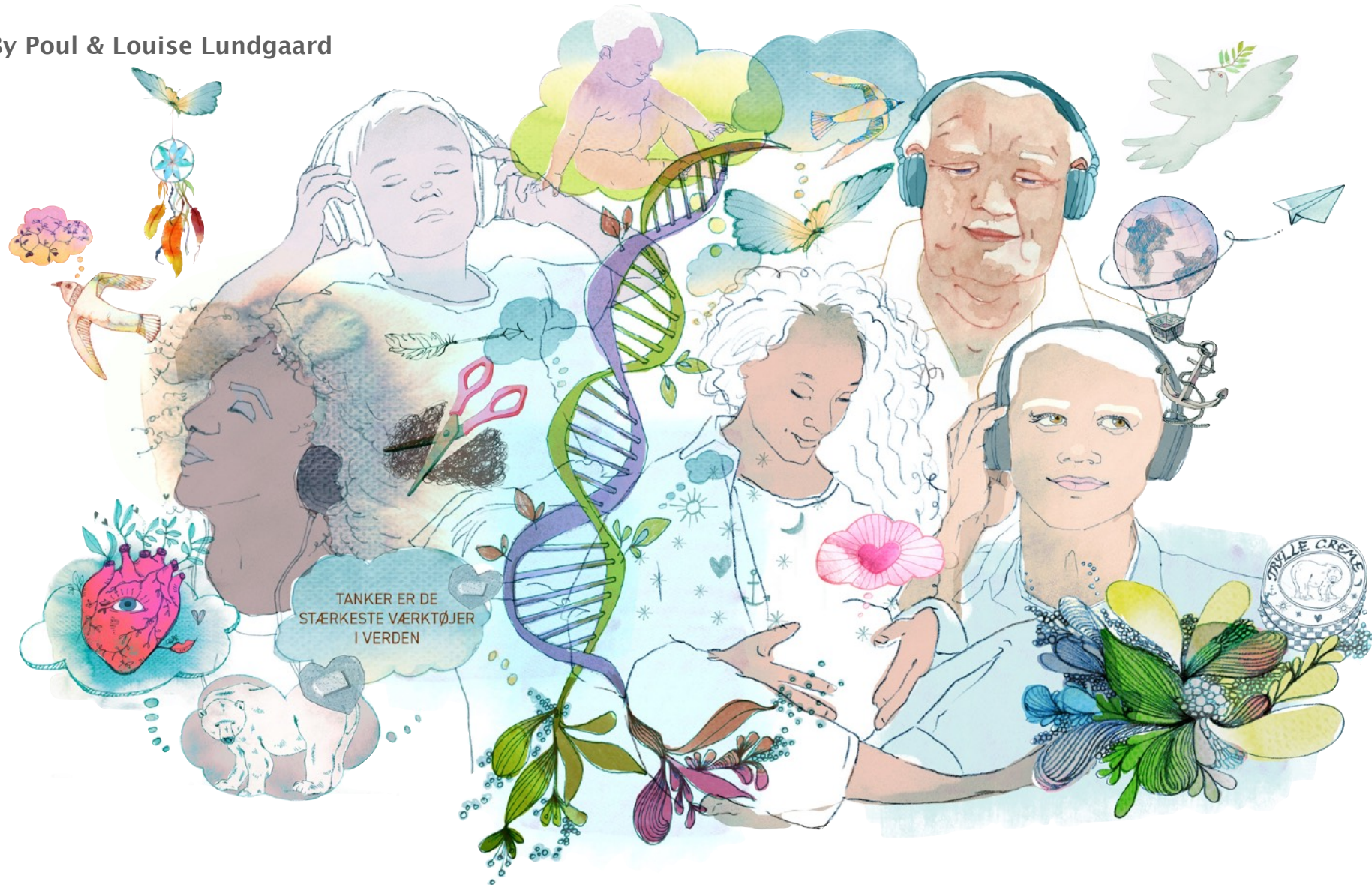


Thoughtful

Thoughts behind Theory and Research

By Poul & Louise Lundgaard





Thoughtful

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Thoughts behind Thoughtful

Theory and Research

By Poul & Louise Lundgaard, MD & Pd.B.

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In this book, we will present the theories and the research, that inspired Thoughtful.

It is important to us that anyone who is interested be given the chance to look behind the scenes and fully explore the knowledge that forms the foundation for Thoughtful.

For readers who wish to delve even deeper into the material, we have created a long list of references at the end of this book with further books and scientific articles to read.

This book will be updated every time we gain new knowledge to present.

Thoughtful exists in several languages. This book only exists in English.

Thoughtful in the world

Dk: Omtanke.house

KAL/GRL: thinkinuk.com

ENG: thoughtful.house



The Thoughtful drawings are created by Anne-Sophie Helger

Last updated July 2021

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INTRODUCTION

We think all the time but rarely think about what it really is that we are doing.

Thinking is simultaneously our most common everyday activity and the strongest & most wondrous of everything in this world.



Other peoples Thoughts to share

This is water

In his book *This is Water*, David Foster Wallace (Wallace 2009) tells a small anecdote about two young fish who meet an older fish:

The older fish says:

‘Hi friends – how is the water today?’

The two young fish swim on and after a while one of them asks the other:

‘What is water?’

The anecdote tells us that things may be so obvious that we are not aware of them. - It is the same with thinking.

Science

Science before it becomes experiments, measurements, math and stringent logic inference – is first of all visions. Science is first of all a visionary activity. Scientific thoughts are nourished by the skill to “see” things in other ways that hitherto.

– Carlo Rovelli in *Seven lessons in Physics*

Imagination

Logic will bring you from A to B. Imagination will bring you everywhere.

– Albert Einstein

Understanding

Understanding is to see things from different perspectives.

– Roger Antonsen, Norwegian Mathematician



Protect & repair – the body & mind

It is vital that our body & mind can protect and repair themselves. Otherwise we wouldn't be here. So Nature has taken advantage of every opportunity to refine its own repair workshop. And because thoughts are the most powerful tools in the world (they literally create everything in our lives) it is completely natural that thoughts can boost protection and repair in our body and mind.

That is what Thoughtful is about. In brief Audios & Videos we offer knowledge and inspiration to your thoughts in everyday life – how to boost effortless protection & repair – to yourself and your loved ones:

In the Mind: Sleep, stress, bullying, anxiety, anger, sadness and depression.

In the Body: Pain, wound healing, flu & cold, eczema, hay fever.

Thoughtful is for everyone – children, teenagers & adults – for personal and professional use.

The Thoughtful Audios are designed for acute use – just like a pain-killer. And for regular use – just like vitamins. The Audios are knowledge-vitamins with huge advantages: There are no side effects and the positive effects increase with regular use.

Naturally thoughts cannot cure everything – no matter how powerful they are (no remedy can). But they can help reduce physical and emotional pain & discomfort. That is a fine purpose in itself. Self-help tools are not a substitute for medical examination and treatment when needed. It is complementary. The good news is that Thoughtful can be integrated with any other kind of health promotion and treatment.

Practice thinking

Thoughts are the strongest tools in the world. Everything is the result of thinking. That is: In our inner life, our relations, our communities, and our material world. So when you want to empower life in any dimension and scale, thinking must be empowered.

We are born with the ability to think – just as we are born with the ability to learn languages. Thinking and language is intimately connected and develop interrelated throughout life.

A significant stepping stone in cultural evolution has been the invention of written language – a genius way to express thoughts. Written language feeds back and adds completely new dimensions to our thinking because we can share thoughts with each other from a distance in time and space.

Naturally Thinking comes first. Language – spoken, written & read – is “only” an expression of thoughts.

Writing and reading are skills we develop by practicing. In exactly the same way we can empower our skills of thinking by practicing the alphabet of thinking – how to read your own thoughts and create new thoughts.

That is what Thoughtful is about: Exciting knowledge in everyday language and little magic stories about how to empower thinking.

THOUGHTS IN THE MIND & BRAIN

Mentalizing

Sometimes our thoughts flow freely in multiple directions – so-called mind-wandering. At other times our thoughts are focused on a specific task – big or small. We can be conscious about what’s going on in our minds, but a lot of stuff is happening on a subconscious level.

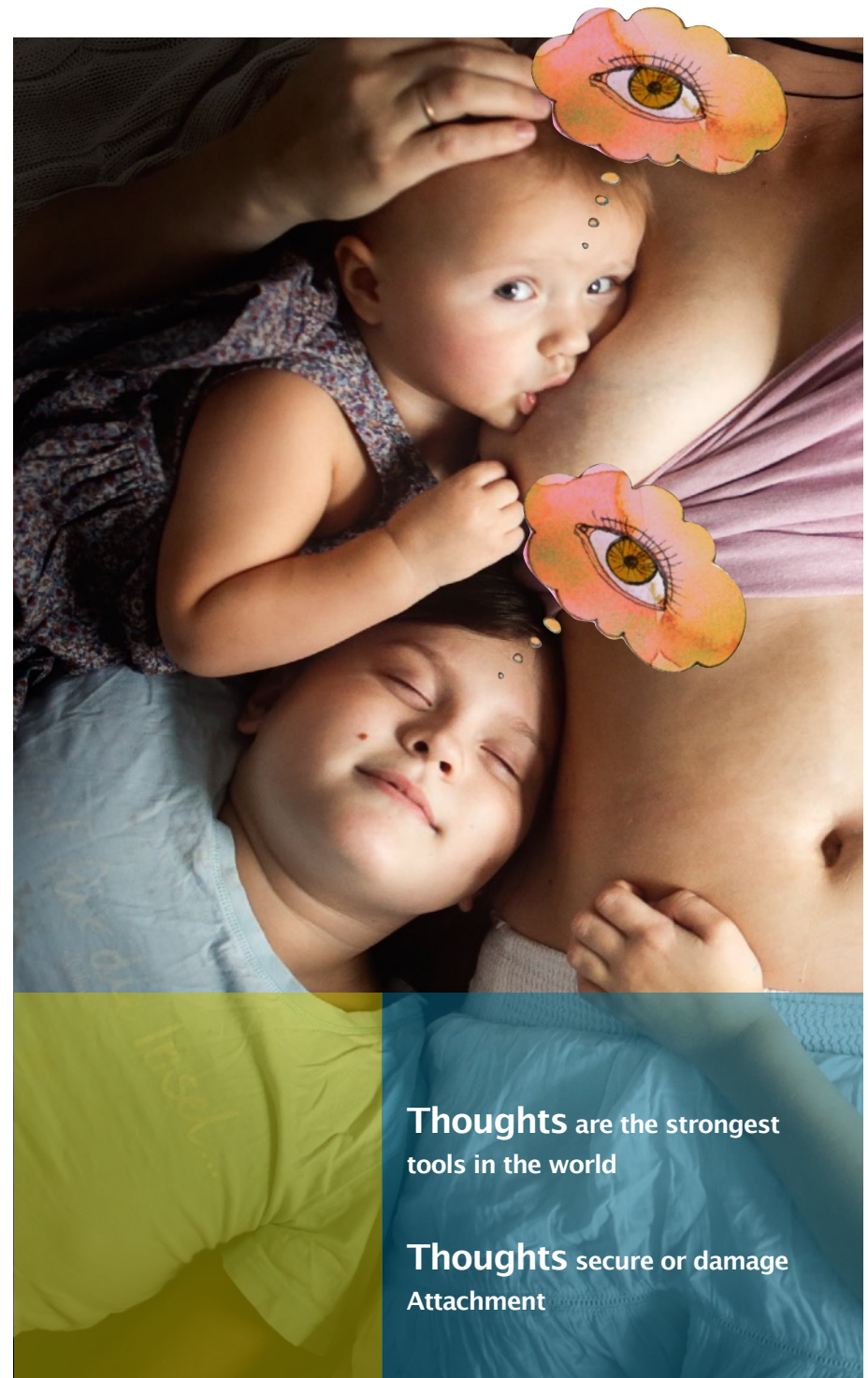
We possess a wondrous ability: We can think about our thoughts and we can change our thoughts. This is one of the ultimate mysteries in the universe.

As the brain develops in the first five years of life children gradually discover that invisible and very important events are going on inside your own head and inside the heads of other people. – In academic terms this is called mentalizing or metacognition – the skill to think about your own thoughts and feelings and about other people’s thoughts and feelings.

This is something we all experience in everyday life. With neuropsychological research our knowledge about this phenomenon has greatly increased.

Neuroscience has shown that mentalizing is primarily going on in the frontotemporal parts of the brain (‘the social brain’). And decades of research has documented that proper development of this extraordinary skill is heavily dependent on secure attachment relations in early childhood (Midgley & Vrouva 2010, Liotti & Gilbert 2011, Weijers 2020).

As with any other human skill, thinking about thoughts can be taught and practiced. The effects of teaching and practicing mentalizing can even be quite dramatic. Prominent psychiatric research with intensive mentalization-based training of adult patients with severe borderline personality disorder (who have greatly increased suicide risk) has documented (8 year follow up) that suicide risk can be reduced by a factor 10, use of health care services by a factor 30 and medicine consumption by a factor 100. (Batemann & Fonagy 2008).



Thoughts are the strongest tools in the world

Thoughts secure or damage Attachment

Thoughtful Research

Mentalizing research has been an important inspiration for the development of Thoughtful.

Thoughtful is mentalizing about mentalizing – in everyday language & concepts – how to do it. Thoughtful is the first mentalization-based program in the world which has been developed for general Mental & Physical Health.

Thoughtful has been subject to a number of research studies.

Note: In early research projects the Thoughtful program has formerly been called: The Thoughts in Mind Project and the Resilience Program. In Danish: Robustheds-programmet. In Greenlandic: Thinkinuk – which means Thinking Human.

By the way Thinking Human is also the meaning of the name of our species Homo Sapiens.

This is a summary:

High risk conflicts & staff sick leave

Thoughtful has helped to reduce high risk conflicts with 90 % and reduce staff sick leave with 50% in a socially deprived district (3 year follow up) (Bak et al 2015).

Substance abuse treatment

Thoughtful has been a useful supplement to substance abuse treatment among psychiatric and violent addicts in prisons. For instance an inmate who had been imprisoned for 28 years completely got rid of his substance craving (Lundgaard Bak 2016).

Improved learning among foster care children

Thoughtful can help improving learning among foster care children (Lundgaard 2019a, 2019b).

Improved thinking

Thoughtful can improve careful, positive and empathic thought-patterns among school children – to an extent never shown before (Valle et al 2016).

Practical Experiences

In 2018 we published a book with practical experiences and stories using the program in Denmark, Greenland and Italy with children and young people in different settings. The book is written by experienced professionals and published worldwide by Routledge (Lundgaard Bak 2018). Two analogous books have been published in Danish (Lundgaard Bak 2017a, 2017b)

More research projects

An ongoing large-scale, randomized test-run is examining Thoughtful for pregnant women – with the purpose of protecting the fetus/child during pregnancy, birth and early childhood (Wilson et al 2019).

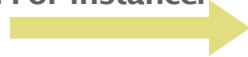
Other project ideas regarding Thoughtful are under way in several countries.

We invite researchers and students to cooperate in new Thoughtful projects.



Mental Health Theories

A range of related (academic) concepts exists in this field. For instance:



This is all about movement: How to move from harmful thoughts to beneficial thoughts. Thoughtful is about how to do this easily in daily life.

To further illustrate the significance of the skill of mentalizing – to think about thoughts and change thoughts – we will refer to research about self-efficacy and self-control:

Two of the most influential health paradigms in the last ½ century are the Salutogenesis Theory – how do we support successful coping in life and facilitate health and resilience (Antonovsky 1987, Antonovsky 1984, Lundberg & Nyström 1994) and Social Learning Theory – SLT (Bandura 1977, Bandura & Locke 2003). One important salutogenic factor is the so-called Sense of Coherence (SOC) embracing three components: Comprehensibility, manageability and meaningfulness. SOC is strongly related to perceived mental and physical health (Eriksson & Lindström 2006. Torsheim, Aaroe & Wold 2001). Neenan (2009) has also linked the experience of meaningfulness to the development of resilience in a cognitive behavioral approach.

Social learning theory is rooted in the simple fact that every human action is preceded by conscious/unconscious thoughts and feelings:



Examples of Related academic concepts

- Mentalizing
- Metacognition
- Executive functions
- Externalization
- Theory of Mind
- Cognitive Behavioral Training
- Self-control
- Self-awareness
- Introspection
- Self-efficacy
- Self-suggestion
- Mindfulness
- Meditation
- Visualization



Self-efficacy Expectations are determined by:

1. Personal Experience
2. Knowledge
3. Role models
(secure attachment)

Whether a person takes action or not in a particular situation is determined by outcome expectations and self-efficacy expectation (Note: The decision not to act is also an action). Outcome expectations may be high but one does not take action if self-efficacy expectations are low ('I would like to do it – but I don't think I can succeed'). Self-efficacy is task specific but when self-efficacy is low in multiple areas, general self-esteem is affected.

This is relevant in any major or minor situation in human life.

The importance of secure and positive role models is well known from attachment research (Fonagy et al 2002, Masten & Wright 2010). Parents are the most important figures in childhood but the key role of the professional as a role model is also emphasized by research about teacher-student relationships: It has been shown that dramatic increases in academic performance can be achieved through systematic training and focus on positive teacher-student interaction qualities (Allen et al 2011, Hattie & Donoghue 2016).

To strengthen self-efficacy expectations it is absolutely crucial to 'design' practical life situations with appropriate challenges which can lead to meaningful personal experiences. It is an obvious and

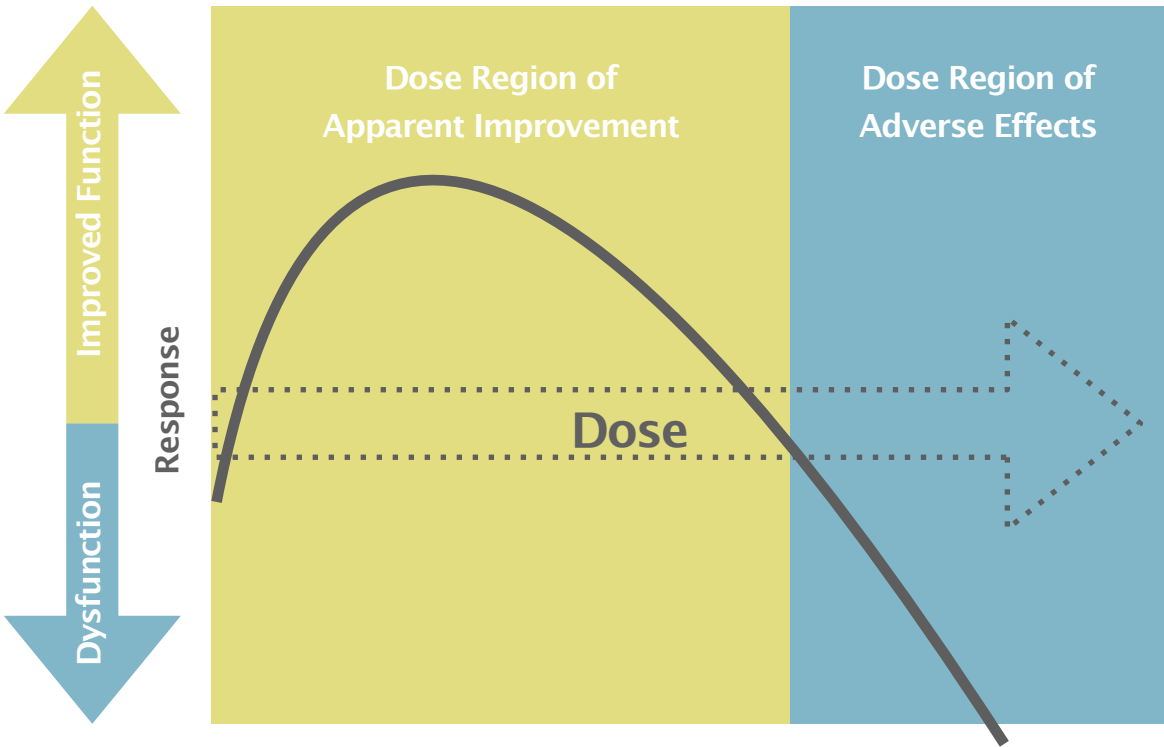
for many years known fact that practice-based learning and gradual training in everyday life is essential for lasting change. It is a classic learning principle expressed in Vygotsky's 'proximal learning zone' and in the Cognitive Behavioral Training tradition as 'exposure in vivo'. This is all about conscious/subconscious goal-setting and goal-commitment (Klein et al 1999) and in line with mentalization and the concepts of self-control.

Research indicates that announcing one's intentions (one kind of so-called 'commitment device') without direct coupling to practice-based behavior may decrease the likelihood of achieving the goal (Gollwitzer 2009). One should also be careful when giving feedback to a person in learning process. In general, feedback should be task specific and give guidance in a positive way and not address identity levels which carry the risk of being counterproductive (Kluger & DeNisi 1996).

The process of 'designing' practical life situations with appropriate challenges is very much related to the concept of goal setting which is a documented way to increase performance and reduce procrastination. Appropriate goal complexity and interest enhancement are strong positive moderators – more than feedback (Gröpel & Steel 2008, Neubert 1998).

The concept of appropriate challenges, which is fundamental for meaningfulness, learning and practice, links all the way down to basic gene expression and the biologic phenomena Yerkes-Dodson's law and Hormesis. The concept of Hormesis originally stems from toxicology and may be defined as a dose-response phenomenon characterized by low-dose stimulation and high-dose inhibition. It embodies a process whereby a low dose of a physical or chemical agent/stressor that is toxic at higher doses induces what often appears to be a beneficial effect on the system/individual studied (Calabrese 2008, Calabrese and Baldwin, 2002).

In the field of neuroscience Hormesis is also profoundly evident and reflects, as noted by Mattson and Cheng (2006), 'the adaptive process by which neurons (and hence nervous systems and organisms) respond to a moderate level of stress by enhancing their ability to resist a more severe stress that might otherwise be lethal or cause dysfunction or disease.' These adaptive responses induce changes in gene expression activating molecular pathways that mediate stress resistance and ultimately lead to the expression of the hormetic dose response (see also Rossi 2002).



Modified figure from Lupien et al 2005

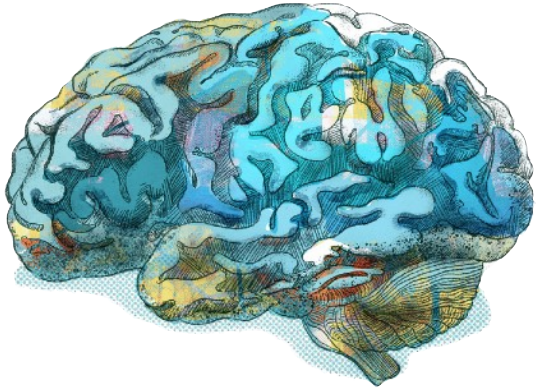
The key concept on the social and relational level is thus appropriate challenges. What we see in building resilience and self-efficacy is that individually appropriate challenges which are within the stimulatory enhancing hormetic zone actually influence gene expression and the glucocorticoid and neuropeptide systems in the brain and thereby enhance engaged arousal, flexible learning and memory - thereby increasing adaptability and resilience (Kastin & Pan 2008, Lupien et al 2005, Rossi 2002).

In contrast, severely adverse situations elicit hormonal and cellular responses in the brain which then inhibit flexible functioning of the learning-memory systems. They do so in a way that elicits vigilance, decreases self-efficacy and narrows coping possibilities and life skills. An important example is the cognitive bias in anxiety disorders where the attention is attracted to fearful stimuli.

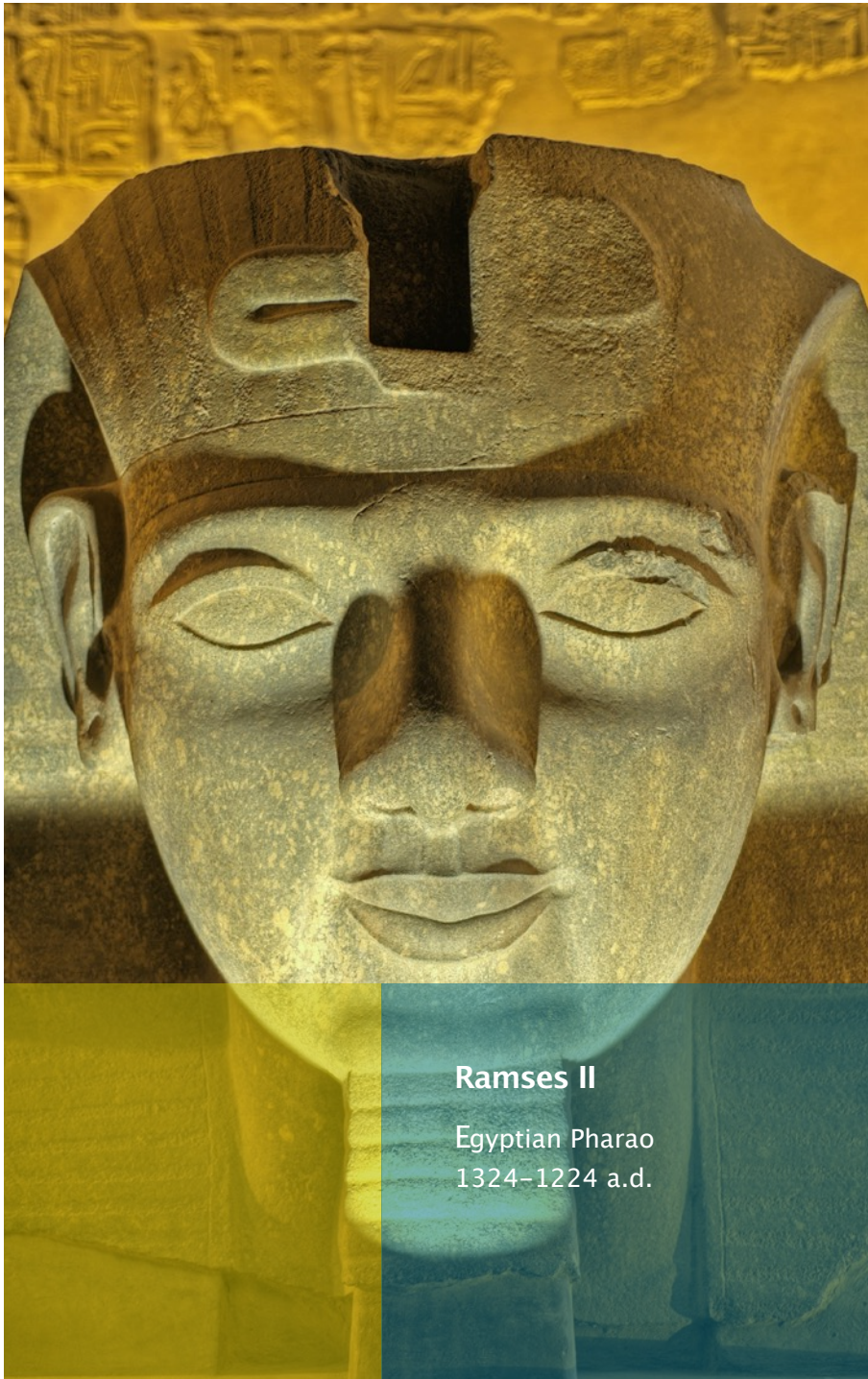
A natural example of this mechanism is children’s risky play which from an evolutionary perspective can be considered to have an anti-phobic effect. As stated by Sandseter & Kennair (2011): ‘The child starts off with a natural inhibition toward situations that the child developmentally is not mature enough to cope with, but this fear is reduced when the child develops mental and physical skills and exposes itself to the stimulus by thrilling emotions, while learning to master these challenges.

The phenomenon is known in psychology as Yerkes–Dodson’s law (Calabrese 2008). Vygotsky’s concept of proximal learning zone as well as studies in micro-development and micro-cognition may also be considered as expressions of this basic phenomenon (Granott & Parziale 2002). And it is also a well-known fundamental principle in Cognitive Behavioral Therapy/Training called ‘exposition in vivo’.

Research indicates that appropriate early life stressors may foster resilience. Adults cope better with spousal loss, illness, and major accidents if they have previously experienced and coped with stressors in childhood. Work-related stressors likewise have fewer depressive effects in adults previously exposed to work-related stressors in adolescence. These findings suggest that stressful events that are not overwhelming, but challenging enough to elicit emotional activation and cognitive processing may make subsequent coping efforts more efficient, and therefore easier and more likely to be used later in life (Feder et al 2010, Lyons & Parker 2007).



The adaptive brain



Ramses II
Egyptian Pharaoh
1324-1224 a.d.

ΨΥΧΗΣ ΙΑΤΡΕΙΟΝ

Psyches Iatreion

Healing Place of the Soul

Getting personally relevant knowledge about what is going on around and inside oneself is very often a significant component of perceived meaningfulness and a condition for setting up appropriate challenges for building useful personal experiences and self-efficacy. This is naturally in line with the UN & WHO statement that education in general is one of the most important general health factors in the world.

This is certainly not a new discovery: Above the entrance door to the Library of Ramses 2 - Egyptian pharaoh 1324-1224 a.d. - this phrase was engraved:

ΨΥΧΗΣ ΙΑΤΡΕΙΟΝ

PSYCHES IATREION
(Healing Place of the Soul)

Meaningfulness

We will repeatedly return to the concept of meaningfulness which is also a key in understanding how thoughts can affect physiological protection and repair in the body.

Personally relevant knowledge is a key factor in building meaningfulness and self-efficacy. So it is obvious that Social Learning Theory and the concept of Sense of Coherence are intimately connected.

Everyday Language

It is equally obvious that everyday language has a crucial importance when knowledge is presented with the purpose:

To optimize the chance that the knowledge is comprehensible and relevant and can be personalized.

To reach people with extremely diverse backgrounds – in any dimension – ultimately all humankind.

To create common concepts and understanding between professionals and all of us – as lay people.

Although this may seem to be a monumental task it is in principle easy. Because: two types of language exist in the world – professional language and everyday language. Both types of language are amazing.

With professional language professionals can communicate with each other. But professional language is only for professionals. Professional knowledge which has importance to others apart from the professionals, must be conveyed in a common language – and that is everyday language and figurative language.

Thoughtful is: Vital knowledge for all humans in everyday language & figurative language about the most important tools we have at our disposal in life – our thoughts.

Although this in principle sounds easy – don't underestimate the task. It takes a lot of time to solve it perfectly. We have literally spent thousands of hours creating Thoughtful, because we want to fulfill our aim to make this life-important and exciting knowledge about thoughts meaningful for any human being on earth. We often think about Leonardo Da Vince who once said: Simplicity is the ultimate form of sophistication.



The Two Languages
in the World

Everydag language and
professional language
complement each other.

Health education

It has been documented on a meta-analytical level that knowledge distribution in health education, psycho-education and patient-education in a wide range of specific health topics has positive effects on perceived health, health behavior and disability.

Here are some examples:

Knowledge

is not the worst thing in the world

A contemporary field which is also in line with the above mentioned classical theories and research is positive psychology (Seligman 1995, 2002 & 2011). That is supporting people in exploring their own personal and collective resources and opportunities for action.

As an illustrative example Seligman and colleagues have documented that very brief and simple actions such as writing down at least three good experiences (small or big) every day for at least two weeks can be helpful in promoting mental health for up to 6 months.

Resilience and capacity building programs have also had focus on sense of personal mastery & positive affects (Seligman & Steen 2005, Ken & Davis 2010, Lyubomirsky & Della Porta 2010).

Meta-analyses

- Psychoeducation for schizophrenia (Xia, Merinder & Belgamwar 2011).
- Psychoeducation for depression, anxiety and psychological distress (Donker, Griffiths, Cuijpers & Christensen 2009).
- Psychosocial treatment of adult ADHD (Knouse, Cooper-Vince, Sprich & Safren 2008).
- Children's physical activity and mental health (Ahn & Fedewa 2011).
- Youth psychotherapy and academic performance (Baskin, Slaten, Sorenson, Glover-Russell & Merson 2010).
- Parenting education with expectant and new parents (Pinquart & Teubert 2010).
- Internet-based self-management interventions for youth with health conditions (Stinson, Wilson, Gill, Yamada & Holt 2009).
- Treatment foster care for improving outcomes in children and young people (Macdonald & Turner 2008).
- School-based interventions for aggressive and disruptive behavior (Wilson & Lipsey 2007).
- Interventions for promoting smoking cessation during pregnancy (Lumley et al 2009).
And: Self-help smoking cessation interventions in pregnancy (Naughton, Prevost & Sutton 2008).
- Effects of asthma education on children's use of acute care services (Coffman et al 2008)
and: Effects of educational interventions for self-management of asthma in children and adolescents (Guevara et al 2003).
- Educational interventions for asthma in children (Wolf et al 2003).
- Media-based behavioral treatments for behavioral problems in children (Montgomery, Bjornstad & Dennis 2006).



Self control

Lack of self-control is a lack of appropriate control over thoughts, feelings and behavior when needed.

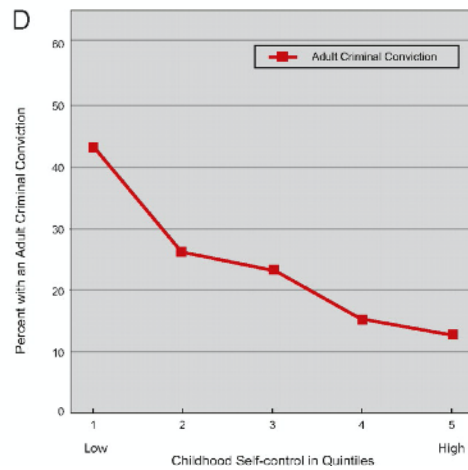
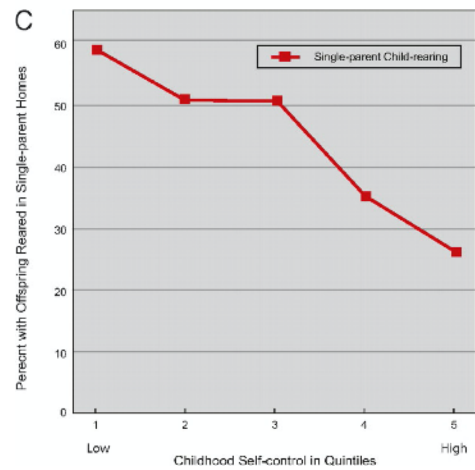
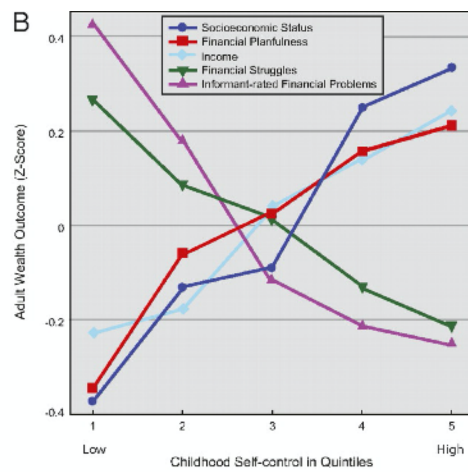
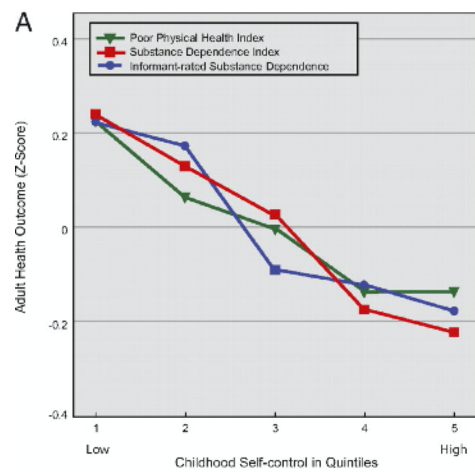
This is one common factor behind vulnerability, mental suffering, powerlessness and helplessness, anger, fear, depression and inability to change unwanted habits.

Thoughtfulness and self-control is a natural prerequisite to the concepts of coping and self-efficacy.

This is illustrated by one of the most thorough investigations of a human population – The Dunedin study from New Zealand, where a cohort with 1000 children has been followed by a research group from birth – 45 years ago – on a large number of physical, psychological and social parameters. The results show clearly that early childhood self-control strongly predicts health, wealth and public safety in adulthood (Moffit et al 2011):

Marshmallow Experiment

The Dunedin results are supported by other studies – among them the Stanford Marshmallow Experiment (Mischel 2016). Thus any supportive measures that might strengthen secure attachments and the development of self-control in vulnerable children and families with low self-control could have a substantial impact on health, welfare and security in the society.



The Dunedin study from New Zealand

Moffit et al 2011

Self-control gradient. People with low self-control in childhood had poorer health (A), more wealth problems (B), more single-parent child rearing (C) and more criminal convictions (D) than those with high self-control.

The key to success

The key to success in all the above mentioned dimensions is the personal sense of coherence mentioned earlier – that is: Comprehensibility, manageability and meaningfulness.

In every dimension Thoughtful is designed to create mental scenes in which people can evolve personally meaningful ideas & strategies for problem-solving & innovation on levels that fit their current life conditions.

To make that more comprehensible, manageable and meaningful – that is: easy, effortless and playful – we objectify thoughts in Thoughtful. We consider thoughts to be entities – virtual objects/things that in principle can be processed just like simple or complex physical entities: A thought can be taken up or put aside – you can focus on one thought-object instead of another or change the object to make a new version etc. This may sound strange but when we look close that is in fact what happens all the time in our daily life. For instance when you think about something – a sentence or sentences – simple or complex – that you want to say. That thought and the act is in itself a delimited entity – interacting with other thoughts but nevertheless in the moment an entity.

This is a crucially important point because it becomes more comprehensible that specific bits of knowledge aimed to help processing thoughts can be considered to be tools targeted to affect specific thought patterns that we would like to improve – in exactly the same way that we can improve physical objects with mechanical, chemical and electronic tools.

That is why it is meaningful to consider Thoughtful to be knowledge-vitamins – designed for acute use – like a pain-killer – and for regular use – like vitamin-pills.

This core of Thoughtful becomes even more important and exciting when it comes to how thoughts and Thoughtful can support and reinforce protection and repair in the body.



Can you do the test?

1 or 2 marshmallows



Side effects

There is an increasing awareness that mental health work can have side effects – just as medications can have side effects.

Research indicates that a disturbingly large number of people (20–30 %) get worse when they attend psychotherapy – even though all guidelines for the therapy have been complied with (Flor 2019, Linden 2014, Berk 2009, Schermuly–Haupt 2018, Klatte 2018). In some areas the rate of side effects may be even higher. Personal reports from Greenland suggest that up to 50 % may have significant negative side effects.

Side-effects are caused by re-traumatizing if you only talk about the dark thoughts. In the Thoughtful theme Basic this mechanism is discussed in detail.

Mentalizing strategies seem to be one way to reduce this risk of talking-therapy (Batemann 2008).

Mindfulness and meditations techniques can also have side effects. The reported incidence of significant side effects is about 25% (Galante 2021, Schlosser 2019, Britton 2010 & 2018, Cebolla 2017). In Mindfulness & Meditation you practice focus on observing what happens in the present moment without being disturbed by whatever happens. So if negative and eventually dangerous thought patterns come up – you just let them stay there without doing any mentalizing/ metacognitive efforts to affect or modify such destructive patterns. So if you don't do anything about it but just let it stay in your mind, then you actually risk re-traumatizing yourself.

Still we believe, that there are still measures to be learned when it comes to the knowledge about side effects in therapy/talking.

Side Effects References

Flor 2019, Linden 2014, Berk 2009, Schermuly–Haupt 2018, Klatte 2018.

Mentalizing Strategies

Mentalizing strategies seems to be one way to reduce this risk of talking-therapy (Batemann 2008).

Can Thoughtful have side effects?

In this context it is a highly relevant question to ask:
Can Thoughtful have side effects?"

To answer this question we will make an analogy:

When we learn to read and write, it opens a completely new world of knowledge and experiences. If you incidentally read a book that makes you feel very bad you won't blame the skill of reading – but you will eventually blame the book – or your choice to read the book. Likewise if you write a letter to a person who becomes very upset – you may regret the way you wrote the letter but you won't regret that you learned how to write.

Thoughtful is basic knowledge about how to think – how to read your thoughts and write new thoughts. So that you can extend your innate skill to think and to choose what to think about – that is to be thoughtful. This is in any respect comparable to the skill of reading and writing which is an extension of your innate skill to learn languages – which is expression of thoughts.

If you end up in a troublesome situation which is very difficult to solve – it is not your basic Thoughtful knowledge about how to read your own thoughts and write some new thoughts that is the problem – it is the difficult circumstances in the situation that will cause your discomfort and suffering.

This level of thinking – mentalizing/metacognition – can be helpful when emotions, feelings and thoughts are troublesome – then you can think about your thoughts and emotional state and take appropriate actions. That is why this approach actually also can reduce the risk of side effects in psychotherapy and mindfulness/ meditation practices and make it safer. Because one is better equipped to take responsibility for what happens.



Pharmacy of the Brain

www.thoughtful.house
www.omtanke.house
www.thinkinuk.com

The widely used Audio
Pharmacy of the Brain is
Basic Knowledge in daily
language and imagery.

Suicidal thoughts

Thoughtful is designed for Mental and Physical Health. Therefore Thoughtful is also relevant in relation to suicidal ideation – the most serious indicator of mental suffering. Thoughtful has been tested in cooperation with the Greenlandic Government in 2018–2020 as part of the national strategy for the prevention of suicide. In the Science theme on the Thoughtful website there is a link to the Test-Report (Lundgaard 2021). In the Theme Real Life Stories on the website a number of case stories are presented.

In this section we will present suicide research & observations relevant in relation to Thoughtful.

There are well-known risk factors for suicide ideation and actions. Childhood maltreatment, bullying, poverty, suppression and psychiatric diseases are very important risk factors (Dube 2001, Holt 2015, Teicher 2016, Zoroglu 2003).

Suicide attempts are often associated with alcohol – and alcohol policies influence suicide rates (Kaplan 2016, Xuan 2016).

Contagious suicide

Decades of research has documented that suicide can be contagious – also called suicide contagion, suicide clusters or copycat suicide (Gould 2013).

Other disorders and behaviors in general can also be contagious – such as depression, eating disorders, bullying, smoking – and smoking cessation, weight loss, etc.

Everywhere in the world people have very hard lives – but when suicide is present as a means of action in a community, an increased risk exist that people may choose to commit suicide when they are in despair. When the idea of suicide does not exist

in a society, then people do all sorts of other things when they feel despair – but they will not kill themselves.

This is reflected in the widely different rates of suicide in time and location (WHO 2021). Currently Greenland has the highest suicide rate in the world among young people.

Contagious suicide is social learning (Mesoudi 2009).

Research shows that media coverage can affect the rate of suicides (Moran 2017, Philips 1986, Mesoudi 2009, Sisack 2012). There is a clear dose-response effect – more media coverage increases the risk of suicides. Dramatic media coverage increases the risk of suicides even more. When celebrities commit suicide, the risk of suicide increases. When Marilyn Monroe committed suicide in 1962, the rate of suicide in the United States increased by 12% the following month.

Attitudes towards suicide in a society and in media coverage also affect the risk. Acceptance of suicide increases the frequency of suicides more than attitudes that emphasize the abnormality of the action and the negative consequences of a suicide.

When discussing the stand that we should condemn suicide, it is naturally important to make sure not to reproach the person who has suicidal ideations. For instance: ‘A person with suicidal thoughts should think about how many people she/he is going to harm if she/he commits suicide’.

A person only commits suicide in the case of utmost despair in a society where better scopes of action don't exist. What we should then rightfully condemn is that society doesn't offer better options for its citizens than suicide when life gets really tough.

Brain scan research shows that in people with suicidal thoughts, the Alarm-Brain does not react with a normal adversity reaction when death-related pictures are presented to the person compared to people without suicidal thoughts. That means the normal fear-and adversity response to death is numbed in people with suicidal thoughts (Schmall 2020).

It seems that young and old people have the greatest risk of being influenced by media coverage (Sisack 2012).

Media coverage of suicide, which 'takes the opportunity' to tell you what to do if you are feeling bad and have suicidal thoughts and where you can get emergency help, can reduce the frequency of suicide instead of increasing the risk of suicide. An example is Kurt Cobain's suicide (lead singer of the rock band Nirvana). In his hometown, the coverage of his suicide was consistently linked to information about how to get help if you were feeling bad. The number of suicides in the city decreased in the time after (Jobes1996). In Vienna in the 1980s, the frequency of subway-suicides was reduced by 70% through similar efforts (Etzersdorfer 1998).

Similar negative and positive effects can be seen in communities where such events are spread by word of mouth, even if there is no media coverage.

Therefore, knowledge about how to talk about suicide and emergency society measures in case of suicides has a great impact on the risk of new suicides.

There are recommendations for the media and other relevant bodies on how to reduce the risk that media coverage of suicides leads to more people committing suicide (O'Caroll 1994).

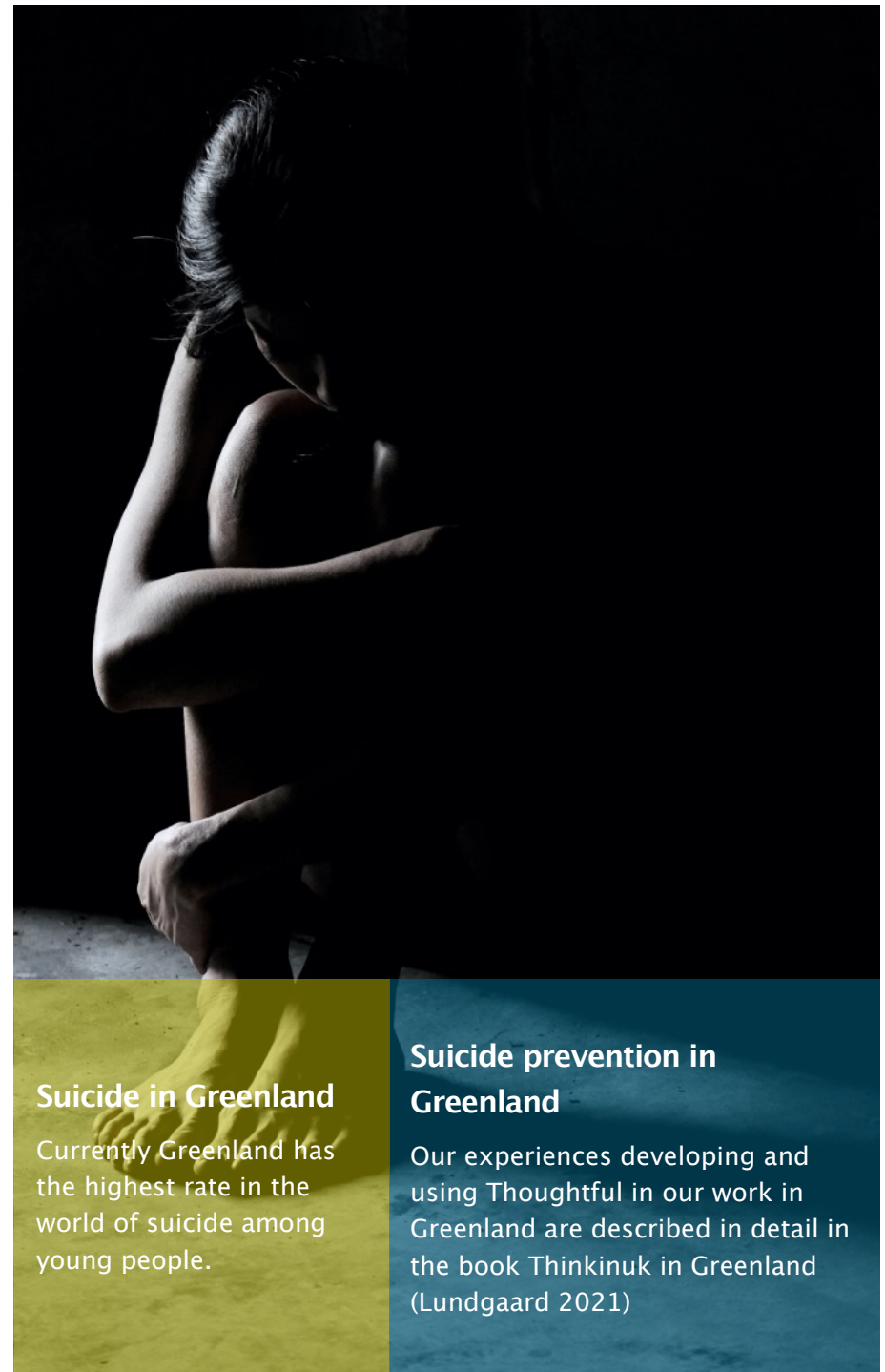
What works

There is widespread consensus among researchers that multilevel Whole Community-based (Public Health) strategies & policies are necessary for effective prevention of suicide (Salzman 2016, Riblet 2017, Robinson 2018). That includes Mental Health Education against risk factors and knowledge about what to do when suicide ideation arises.

It is clear that neurocognitive-oriented mental health measures are effective in relation to suicide prevention (Batemann 2008, Denchev 2018, Mishara 2007, Riblet 2017).

Thoughtful is designed to be in line with this research.

In our work in Greenland we have firsthand experiences from several communities using Thoughtful as an emergency measure in cases of suicide and suicide attempts – with the aim of preventing recurrent attempts and contagious suicide. These experiences are described in detail in our Book Thinkinuk in Greenland (Lundgaard 2021).

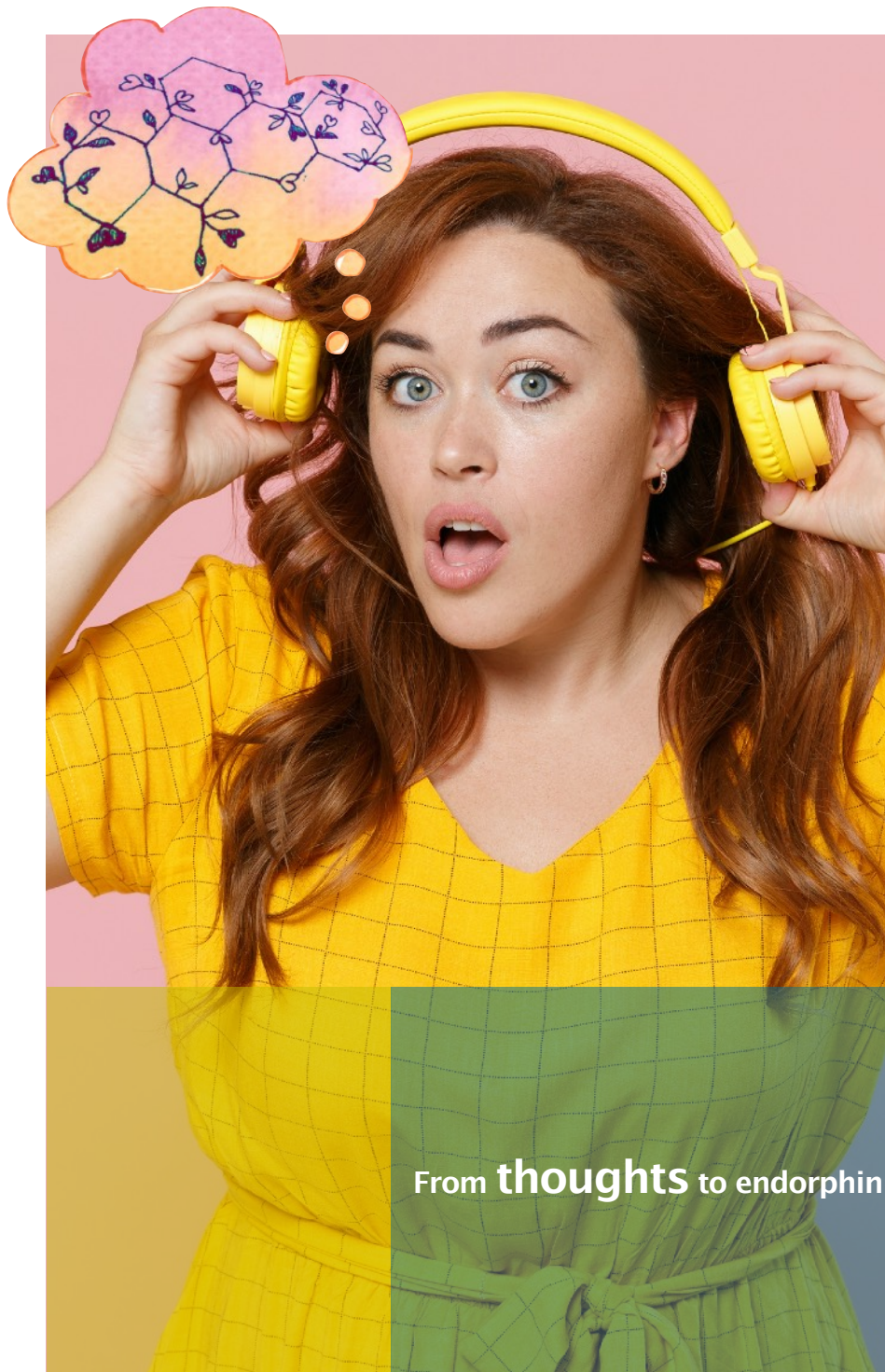


Suicide in Greenland

Currently Greenland has the highest rate in the world of suicide among young people.

Suicide prevention in Greenland

Our experiences developing and using Thoughtful in our work in Greenland are described in detail in the book Thinkinuk in Greenland (Lundgaard 2021)



THOUGHTS IN THE BODY

Psycho-biology. Psycho-neuro-immunology

The intimate connection between emotions, feelings, thoughts and basic body & cell physiology. A few examples:

Nearly all movement patterns are preceded by intentional thoughts.

Thought patterns are constantly affected by sensory stimuli.

Thoughts can instantly affect the cardiovascular system: heart rate, blood pressure, skin blushing, penile erection.

Thoughts affect glands: Saliva, sweat, vaginal secretion, gastric secretion.

The immune system is deeply affected by our thoughts.

It is vital that the body and the mind can protect and repair themselves. Otherwise we wouldn't be here. For that reason Nature has used every opportunity to refine its repair-workshop. Thoughts are the strongest tools in the world. So it is natural that thoughts can support & reinforce protective and healing mechanisms in our physiology. It happens because the body translates our thoughts into its own biochemical language deep inside our cells and in the expression of our genes.

This is something which has been known for a long time and it is increasingly documented by detailed and sophisticated scientific research. Here are a few general references: Astin 2003, Benson 1997, Benson & Proctor 2011, Esch 2018, Hamilton 2018, Moerman 2002, Rankin 2020, Rossi 2002.

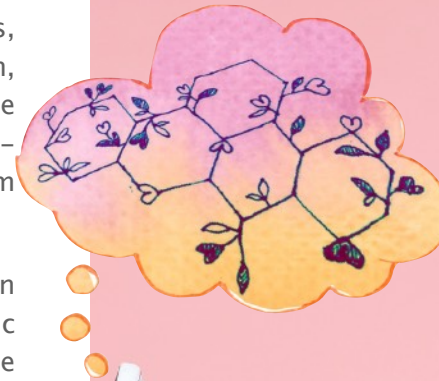
In Thoughtful this knowledge is transformed into daily language and small stories to make it useful for a range of specific and common health issues. In this section we will go a little deeper into the science behind some of these exciting and important phenomena.

The connectiveness of the brain is astronomical

Decades of research has demonstrated the intimate connection between emotions, feelings, thoughts and basic body & cell physiology such as gene expression, psycho-neuroimmunology and chronic inflammation – which is considered to be risk factor in a wide range of chronic diseases (APA 2006, Astin 2003, Kendall-Tackett 2010, Moraes 2017, Perth 1999, Rankin 2020, Rossi 2002, Segerstrom 2004).

This also includes brain-heart neurodynamics (McCraty 2003) and the gut-brain axis (Esch 2018, Liang 2018). Other terms have been used as well: Psychosomatic Medicine, Systems Biology, Bio-Psycho-Social Models – and Personalized Medicine (Yan 2016).

Research has also indicated that emotional states affect the susceptibility risk to the common cold (Cohen 2003). And the effect of a vaccination can be affected by emotional expressions (APA 2006, Petrie 1995). Psycho-neuroimmunological intervention approaches seem to be valuable in relation to chronic pediatric illnesses (Nassau 2008).



From **activity** to endorphin

The connection between the dangerous thoughts of others & the childhood brain

The development of the brain in childhood can also be deeply affected by thoughts – by maltreatment which is the product of dangerous thoughts. This is by far the most common cause of mental illness later in life (Teicher 2016). Maltreatment is highly correlated to poor parent–child attachment and low parental mentalization (Zeegers 2017)

The brain bar becomes thinner. It becomes harder for the two brain halves to work together. Left hemisphere works linearly and analytically. Right hemisphere works holistic and creatively. Thinking becomes more chaotic.

The Thinking–Brain becomes smaller. It becomes harder to think about things – to mentalize – to think about your own and others' thoughts.

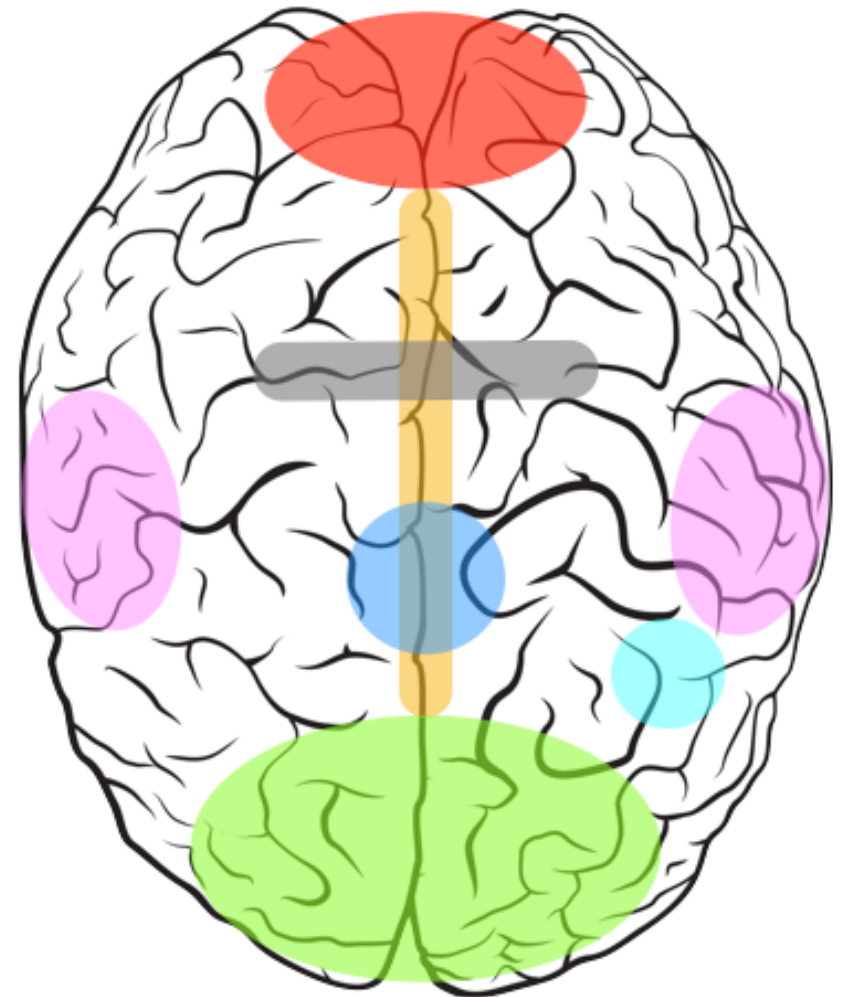
Short-term memory becomes smaller. It becomes more difficult to learn, remember and understand the world in which you live.

The language center decreases. It becomes harder to understand what other people are saying and it becomes harder to express yourself.

The Alarm–Brain is enlarged. You feel more insecure. You get scared and angry easier. The Thinking–Brain is turned down.

Witness to violence: The visual Center is affected. Visual impressions are interpreted differently.

Sexual abuse: Nerve pathways change. Sensations in the genitals are impaired.





Caring for young Brains

Pain control

Before doctors and pharmacies were invented, nature had already invented its own medicine. The brain thus has its own pharmacy which produces endorphin and other useful drugs.

Endorphin resembles morphine but it is 20 times stronger (Loh 1976). It has no side effects and the positive effects increase with regular use. Thoughtful includes an Audio – The Pharmacy of the Brain – about how to activate the production of endorphin. The Audio is based on experimental and clinical research and it works because the brain and the body naturally translate our thoughts into the biochemical language in the cells.

Endorphin relieves physical and emotional pain & discomfort, stress and worries, anxiety and anger, sleep disturbances, weight problems and substance dependency.



Pharmacy of the Brain

A Thoughtful Audio

Medical pain experiment

The basic mechanism is clearly illustrated by a medical pain experiment (described in Moerman 2002, p105–108):

1. A subject is told that the experiment is about testing the effect of different kinds of painkillers.
2. His one arm is exposed to a pain stimulus of increasing intensity. In the other arm, a thin tube is inserted into a vein – so that pain medication can be given and blood samples taken. A screen is set up so he cannot see the tube.
3. When it hurts a lot, the doctor says: ‘Now I’ll give you the best painkiller medicine we have – It will work very fast’. The doctor goes behind the screen to the tube – and does nothing!
4. Shortly afterwards, the subject verifies that the pain is reduced. After a few minutes, an endorphin–blocking substance is injected into the tube – without the subject knowing it. Immediately the pain begins again. This is a clear and simple proof that endorphins had been produced in the brain.

This experiment shows that thoughts can activate endorphin production. What happens specifically in this experiment is that a meaningful message from a trusted person directly presses the button in The Pharmacy of the Brain. The body translates the thought into its own chemical language in the cells. So here it comes again:

Personal meaningfulness is the key to activation of protective and repair mechanisms at all levels in the mind and in the body.

The **trusted person** can also be oneself.

You can press the button in The Pharmacy of the Brain.

Activate endorphin as anesthetic

The physiological mechanisms and the techniques are so established that they are actually used in surgery as anesthesia. The effects are scientifically documented on meta-analytical level (Montgomery 2002, Faymonville 2000). It is called hypno-anesthesia. This example also shows that a seemingly exotic phenomenon like hypnosis, is actually a very straightforward and simple physiological phenomenon.

It is even something that we all experience in our daily life. Imagine that you are deeply preoccupied with an intense outdoor physical activity and you become oblivious to everything going on around you. Without noticing, you hurt yourself at some point and it is only after you have finished the game that you discover you have a bleeding wound – which then starts to hurt. When your attention is intensely focused on something really interesting it will not move to a superficial wound or bruise.

It is this simple physiological mechanism of focused attention that you can amplify

It is this simple physiological mechanism of focused attention that you can amplify – ultimately to such an extent that “natural anesthesia” can support surgery. But certainly everyone can practice this technique in relation to daily simple pain and discomfort in the body and the mind.

With Thoughtful we have made this pain-killing very easy – how to do it in daily life. You will find several options in the Audio-library and especially in the Audio Pharmacy of the Brain.

If you have severe pain or other symptoms
and do not know the cause, consult a doctor.



Placebo

The above described pain experiment is likely to be called a placebo treatment by professionals. For instance you give a pill without any active chemical ingredients to the patients in the control group in a so-called Randomized Clinical Trial.

There is ample evidence that the causal mechanism behind the placebo effect is a meaningfulness response in the mind, brain and body (Moermann 2002). It is powerful psycho-neurochemistry with very substantial clinical effects. So much that you have to take it into consideration in any evaluation of established and new chemical treatments: Are the positive clinical effects the result of an active chemical ingredient in a pill or is it the result of a psycho-neuro-chemical placebo/meaningfulness response?

The meaningfulness component in medical treatment is linked to the trustworthiness of the professionals (doctors, nurses etc.) and other prominent figures in your life – and to the cultural practices in relation to sickness and health in your society. But first and foremost it is an individual thing. Thoughtful is therefore designed to support individual meaningfulness with the aim of reinforcing the natural protective and healing mechanisms in our physiology.

Although thoughts certainly can be directed towards a specific issue such as pain or any of the other issues mentioned below it is likely that they also have a more general component.

Imagine

Imagine for a moment that you are on your way walking to a place you have not been before. The weather is foggy, you have been walking for a very long time and you are tired and stressed. You arrive at a crossroad and you are not sure which way to go. This will add to your burden of stress. Then suddenly the rain stops and the fog disappears. Now you see the landscape clearly, you can see your destination and you know which way to go. That is a relief.

Compare this to the situation in the body when something feels wrong and worries you. You don't always know the cause and you are not sure what to do about it. That is a stressful situation. When you get the knowledge you need you can act on the situation and that provides clarity and relief.

Lack of situational control, meaninglessness, powerlessness, hopelessness and all of those kinds of things are mentally and physically stressful and elicits classical stress-responses in the mind, the brain and the body. This suppresses some of the natural and automatic physiological repair mechanisms in our physiology – Natures repair-workshop. Healing becomes an uphill struggle (see the wound-healing example below). When control and meaningfulness is restored the suppression on the repair-workshop is relieved so it becomes easier for the repair mechanisms to work.

So – although placebo can be seen as a disturbing phenomenon in for instance medical trials, placebo is basically an amazing thing – an expression of the general power of Natures repair-workshop.





Wound Healing

It is absolutely vital that wounds heal by themselves. Self-repair is one of the basic characteristics about living organisms. Otherwise we wouldn't be here. That is why the way thoughts affect wound healing is highly interesting.

Research has shown that wound healing in humans can be delayed by a full 24 hours as a result of just half an hour of quarrel with a relative (Kiecolt-Glaser 1995) and also by exam stress (Marucha 1998).

It has also been demonstrated that wound healing of even chronic diabetic foot ulcers in which blood circulation is severely impaired can be improved dramatically with rather simple biofeedback and visualization techniques (Rice 2001, 2007).

Basically this works because you can use your thoughts to increase the blood flow to specific regions. Even in your brain: With a special form of brain scan (fMRI) you can see which areas of the brain are particularly active, e.g. in connection with a particular thought. If you look at the blood flow pictures of your own brain while thinking the thought, you can, by 'amplifying the thought', increase the activity in those brain areas – that is you can actually affect the blood flow inside your own brain with the power of thoughts (dCharms 2004).

Suffering from diabetic foot ulcers is a worst case scenario. Logically we can then expect these techniques for boosting wound healing to apply to other kinds of wounds as well. Which is why these techniques are adapted to the Thoughtful Audios in the Body theme and the Child theme in a general manner making them useful for all types of wounds and tissue damages such as bruises and fractures – in all age groups including children.



THOUGHTFUL IS FOR EVERYONE

Kadzin & Blase (2011) and Roth & Fonagy (2006) have emphasized that it is important in order to meet today's welfare challenges that more cost-efficient models of delivery in mental health care are developed.

This is an increasing challenge but not a new challenge. Investigators have tried to design and evaluate brief interventions based on media technologies available – mostly written materials, booklets and videos. Large-scale educational self-directed material is highly interesting because health education & psycho-education has proven effective in a large range of contexts.

Media-based behavioural treatments

A Cochrane database systematic review on brief intervention media-based behavioral treatments for behavioral problems in children (Montgomery, Bjornstad & Dennis 2006) compares effect sizes in brief parenting interventions to effect sizes in more resource-intensive programs. This is interesting because media-based, self-directed programs are low cost brief interventions with the potential of large-scale implementation. Out of 2564 trials found in the search strategy 11 fulfilled the inclusion criteria for the review including 943 participants. Written information to convey behavioral skills to parents was the most frequently used method - in one program the written information was supplemented by video modeling of behavioral techniques. All studies are 'pre-internet' studies meaning that there are no studies so far on this quality level evaluating IT technology in parenting programs.

Because of the small number of high quality trials, conclusions must be drawn with caution. The results indicate, however, that immediately after the intervention, participants actually benefit from both face-to-face intervention and media-based self-directed intervention. Benefits seem to be stable at a one year follow-up in both groups. However it seems that self-directed intervention results improve within the first year. Adding options to the self-directed programs for brief professional support may improve results but it is unclear whether it would justify the additional costs that would be incurred.

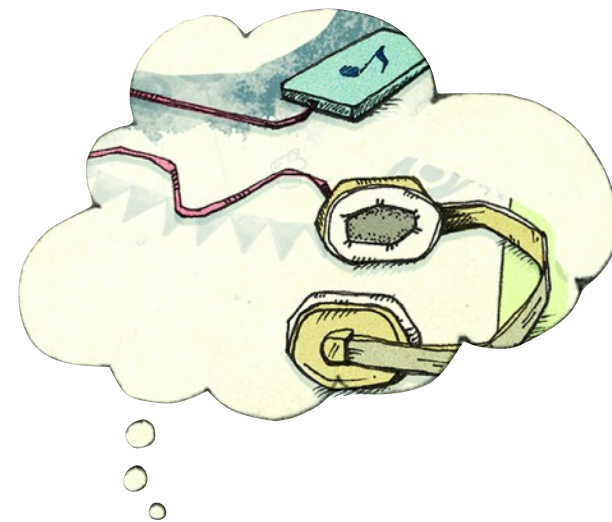
There is some evidence to suggest that self-help materials possibly supplemented by professional guidance may reduce eating disorders and other symptoms in comparison to delayed treatment due to waiting lists or control treatment and may produce comparable outcomes to formal therapist-delivered

psychological therapies. Self-help concepts may thus have some utility as a first step in treatment (Perkins et al 2009).

A review has concluded that Internet based smoking cessation programs has not yet been evaluated. There are only few trials reporting success rates for quitting smoking after six months or more, and those trials provided only limited evidence of long-term benefits of web-based smoking cessation programs.

Internet intervention programs that provide individually tailored information and support may be more effective than a static website. The Internet may have an additional benefit when used alongside other interventions, such as nicotine replacement therapy (NRT) or other pharmacotherapy. Innovative smoking cessation intervention delivered via the Internet may be more attractive to young people and females who smoke, and less attractive to smokers reporting depression (Civljak 2010).

A Meta-analytic review, of eHealth interventions for pediatric health-promoting behaviors, has indicated that in order to be efficient it is important that behavioral components (such as goal setting, self-monitoring, feedback and contingency management) are included in the interventions (Cushing & Steele 2010).



The Internet as a Potential Tool for Wide-Scale Dissemination of Preventive Interventions

In the 2009 report from the National Research Council and Institute of Medicine (O’Connell 2009), the Committee recommended Internet based intervention research:

The enormity of need for mental health services often produces a type of paralysis: since it is not feasible to train enough providers to treat all individuals with mental, emotional, and behavioral disorders, how can preventive interventions be provided to those at risk? This dilemma is caused in part by the exclusive reliance on consumable interventions, such as face-to-face services, and the use of medications. Once a prevention or therapy session is over, no other individual can benefit from that hour of contact. Once a medication is consumed, no one else can benefit from its therapeutic effect. The development and implementation of interventions delivered via the Internet offers the promise of an approach to make interventions available on a continual basis to a wide range of young people at minimal cost while addressing several dissemination and implementation challenges.

Fidelity: The fidelity of Internet interventions is inherent as the material on the computer screen remains the same, no matter how many times it is used. The content of the intervention can be shared widely exactly as tested in randomized control trials.

Scalability: An Internet intervention can be shared with literally

thousands of users beyond the locality in which it was created, while remaining accessible to the original locality. The site of a proven Internet intervention can be immediately opened to use by anyone with web access, which also allows effectiveness evaluation on a wide scale.

Sustainability: The cost of maintaining a website hosting an evidence-based preventive intervention is relatively modest, especially if the site is an automated, self-help intervention.

Accessibility: Internet interventions can simultaneously serve users across a community, a state, the nation, or the world, at any time of the day or night, including holidays and weekends.

Stigma: The availability of Internet interventions that are used in the privacy of one’s own home, educational or work setting, or using a public access computer makes these interventions more likely to be used by people who would not come to a mental health-oriented program.

Reaching multicultural, multilingual communities: Internet interventions can be implemented relatively easily in multiple languages. Similarly, advances in technology now make it possible to create Internet interventions that require a minimum level of reading or writing. The use of video, graphics, and audio allow the creation of Internet interventions that can be used by individuals at any education level.

Internet interventions also have limitations. One of the most troublesome is the lack of Internet access in many low-income, low-education groups. However, Internet access is increasingly available via mobile devices, such as cell phones. Many developing countries have skipped the stage of land-line phones and moved directly to cell phones. As is the case for other venues, Internet interventions will not be effective in preventing all types of mental, emotional and behavioral disorders. It is useful to think in terms of ‘market segmentation,’ in which specific means of reaching populations at risk will need to be developed and evaluated to see which is most effective for which population. Nevertheless, to help make prevention feasible, one must think beyond traditional interventions and harness the power of advanced communication media, such as the Internet.

Thoughtful is for everyone

Barak and Grohol (2011) reviews and summarizes research for online mental health interventions and discusses future trends. These interventions range from psychoeducational static webpages and complex, personalized, interactive cognitive-behavioral-based self-help programs, to videoconferencing, self-help support groups, blogging, and professional-led online therapy. Future trends in online interventions include the greater prevalence of online therapy and the use of video chat and videoconferencing technologies to enhance and extend the therapeutic relationship. The use of texting or short message service (SMS), mobile communications, smart phone applications, gaming, and virtual worlds extends the intervention paradigm into new environments not always previously considered as intervention opportunities. The authors find that there is strong evidence to support the effective use and future development of a variety of online mental health applications.

Since the above publications in 2009 and 2011, technology and prevalence has been improved dramatically thus giving much more opportunities for web-based programs. Thoughtful has been designed to meet those recommendations and exploit the new technologies.

In a groundbreaking study Weisz et al (Weisz 2012) demonstrated that modulated programs in which each module is designed specifically to meet daily challenges in people's lives has double clinical efficacy compared to more curriculum-oriented programs. That has also been a great inspiration for Thoughtful.

Thoughtful consists of packages of practical knowledge targeted to help with specific mind and body health issues – to support and reinforce natural physiological protective and healing mechanisms. This is in all respects comparable with the use of vitamins, antibiotics and pain-killer medications. That is why we call it knowledge-vitamins – designed for acute use just like a pain killer – and for regular use just like vitamin pills. The good thing about knowledge-vitamins is that they have no side effects and the positive effects increase with regular use. And just like chemical vitamins– they are supplements and work seamlessly with any other measure. We would like to give you a clinical case that illustrates this point:

A person with a life sentence for murder – suffering from severe mental disorder and substance dependency. After 3 weeks using The Pharmacy of the Brain Audio he reported back that he no longer felt any craving for drugs. He commented that this was a better fix than heroin and it worked better for him than mindfulness. Several years later he still uses the Audio on a nearly daily basis.

Thoughtful is also designed to follow WHO guidelines for suicide prevention on Whole Community Level (Riblet 2017). We have used this approach in our cooperation with the Greenlandic Government for 3 years now in a nationwide effort to prevent suicide especially among young people (Greenland has the world-record in suicide incidences among young people).

Thoughtful can be used by children, young people and adults – privately and professionally. This means for instance that teachers and educators can use the knowledge and the stories in the classroom. For that purpose a task set is included in the Thoughtful Library.

Nurses, medical doctors, psychologists, social workers etc. can use Thoughtful as a supplement and inspiration in their counseling of patients. Professionals can use their own login when they inform people. Then it is the patients/clients own decision whether to sign up themselves.

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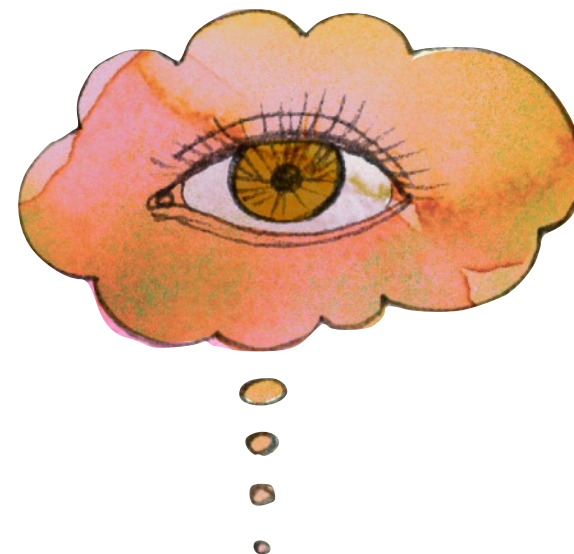
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