Child & youth

Mental Health Series

Today's topic:

The Second Most Powerful Antidepressant: Nature

Speaker:

Dr. M Cheng

November 20, 2014

CHEO

The Le Royal

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Speaker has nothing to disclose with regard to commercial support.

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Nature: The free antidepressant with no side effects

Dr. Michael Cheng, CHEO Rounds

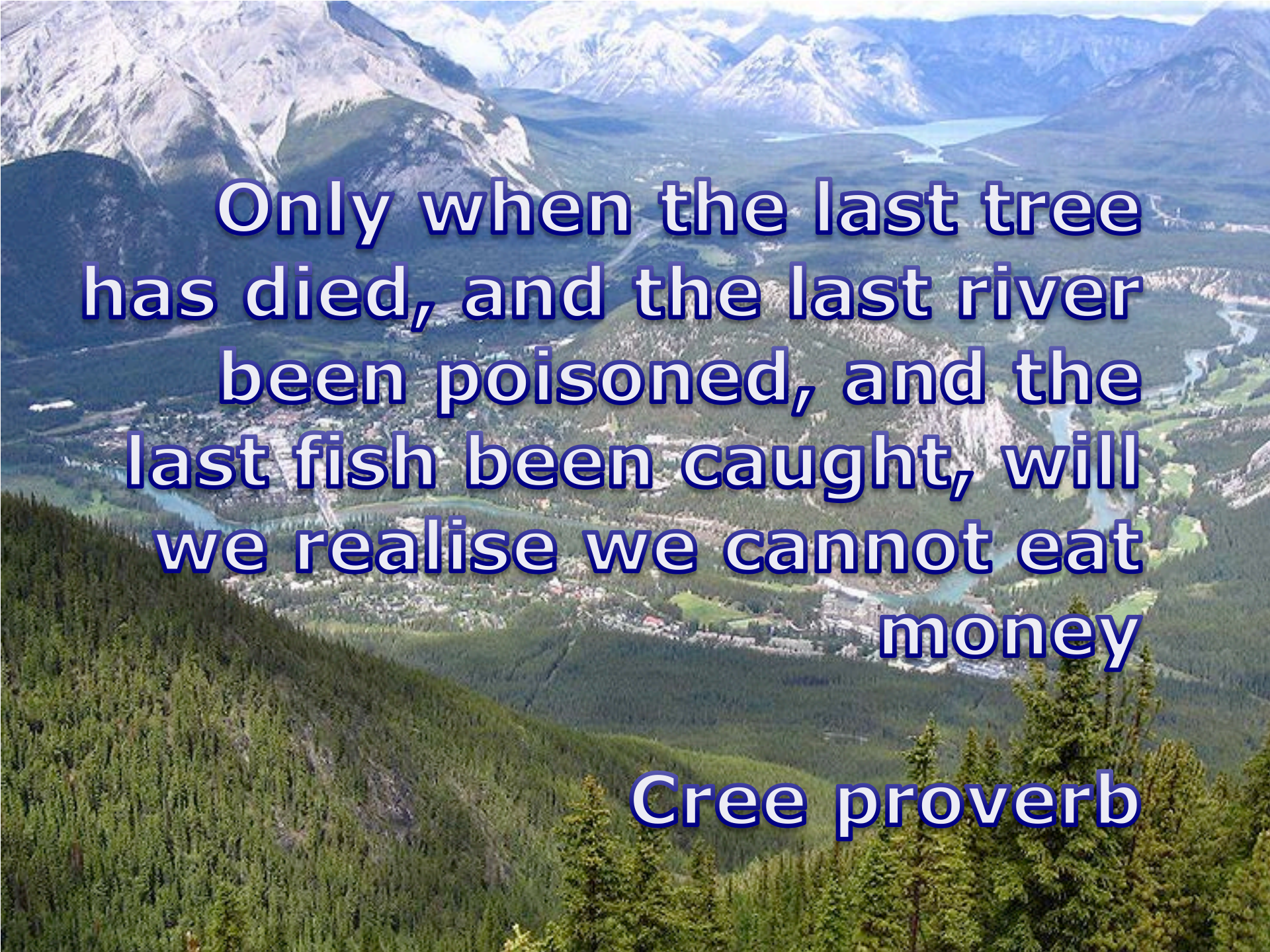
Psychiatry Rounds,

Thu, Nov 20, 2014, 12-1 PM

creative commons
BY NC SA

Learning Objectives

- By the end of this session, participants will be able to:
  1. List 3 examples of scientific literature supporting that which we already know intuitively; that nature is essential for emotional and physical health.
  2. List 3 ways in which modern society has disrupted our connection with nature.
  3. List 3 ways to reconnect with nature.


Only when the last tree has died, and the last river been poisoned, and the last fish been caught, will we realise we cannot eat money
Cree proverb

A little history lesson

In the past…

- We lived intimately with nature, and were physically active throughout the day
- Children played outside in nature, riding bikes, playing sports, with **movement and sensory stimulation**
- Children used their imagination, because they didn't have TVs
- We knew the shopkeepers, the neighbours, the people down the street
- We spent much more time outside in nature…

Cris Rowan, 2014

Image from Little House on the Prairie

Nowadays…

- We live in cities surrounded by concrete, increasingly disconnected from nature
- Thanks to modern conveniences (e.g. the automobile, modern appliances), we are much less physically active than we used to be
- We have less face-to-face contact with our neighbors and those in the community, and thanks to the internet, can avoid it entirely if we want…

In the past…

- We walked to get to places (Shaw, 2014)
- In doing our day-to-day routines such as groceries, we actually had to interact with people
- Families ate and talked after the dinner table
- After dinner, families continued to connect with each other
- Family, extended family and community play a large role
- Children contributed to the family through chores and looking after siblings

Cris Rowan, 2014

Nowadays…

- We drive to get to places
- Many of our day to day routines are done without needing to interact with people, and even when we do interact with the shopkeeper, it is unlikely we know them
- We no longer know our neighours
- We spend all day with technology, and even at night, many of us spend all our evenings with technology
- Today's parents must work harder in order to make ends meet, meaning there really is less time for parents to spend with children compared to a generation ago
- Families smaller, with much less extended supports than ever
- Today's kid's main focus is "how do I entertain myself"; parents main focus is "How do I make my kid happy?"

Kaiser Foundation, 2010; Cris Rowan, 2014

Our society is out of balance…

- Mental health issues on the rise
  - Demands for mental health facing unprecedented demands
- Physical health issues on the rise
  - Child obesity, diabetes are such that today's kids predicted to have shorter lives than their parents
- Evidence suggests that are are wired to require contact with **nature, and fellow human beings**
- Our disconnection from nature and fellow human beings may be contributing to these problems we face…

Modern Literature on Nature

We are not getting enough nature

- “Nature deficit disorder”, (Richard Louv, Last Child in the Woods, 2005)
- Today, human beings, especially children spend less time outdoors → behavioural, emotional, other problems
- “Time in nature is not leisure time; it’s an essential investment in our children’s health.”
- “Ecotherapy” (aka. “green therapy”, “earth-centered therapy”)
  - Nature based ways of physical and psychological healing (Clinebell, 1996)

Evidence that nature is good

- Nature reduces symptoms of attention disorders such as ADHD (Kuo, 2004)
  - Recommendations
    - “Green dose” such as
      - “Urban nature”, e.g. tree-lined street, green yard, neighborhood park
      - Walking to school, doing classwork or homework with a relatively green view, playing in a green yard or ball field after recess
- Nature improves cognitive abilities
  - E.g. Students on an exam do better if they can view a natural scene out a window rather than an artificial environment (Tennessen, 1995)
- Walking in park **anytime** of the year improves attention/memory, with 20% improvement after an hour (Kaplan, 2009)

Evidence that nature is good

- Nature
  - Reduces aggression (Kuo et al., 2001)
  - Reduces stress and anxiety (which thus also helps the cardiovascular system)
- Wilderness course (2-weeks) has psychological/lifestyle benefits (Greenway, 1995)

Exercise is good; ‘green’ exercise in nature is even better

- Exercise is an effective intervention for mood
  - Particularly for people who have low to moderate levels of major depressive disorders
  - Benefits comparable to medication and established psychotherapies (e.g. CBT)
- Green exercise (i.e. exercise outdoors) is better than exercise indoors
- Group nature walks improve mental health (Warber, 2014)

Dr. Jasper Smits, on www.mindingourbodies.ca

Proximity to urban parks improves mental health

- Proximity to **safe** urban parks can reduce mental health problems (e.g. depression/anxiety), physical health problems (e.g. obesity)
  - Los Angeles study
    - Residents living within 400 m of a **safe** park have the best mental health, compared to residents that are 800m, 1.6 km and 3.2 km away from a park
    - Having a nearby park is as important to mental health as reducing local unemployment rate by 2%
  - Netherlands study (Maas, 2009)
    - Those living close to **safe** parks were 1/3 less likely to receive treatment for anxiety, and 1/5 less likely to receive treatment for depression

Urban living may be bad for your mental health

- Schizophrenia
  - Schizophrenia incidence 2X higher in cities than in rural (Susser, 2004)
  - Dose response: More urban = More schizophrenia
  - Factors
    - Environmental toxins in cities
    - Social context in cities
    - Infectious diseases (such as prenatal infections)

- ADHD
  - ADHD incidence 5X higher in urban settings with (prenatal) exposure to polyaromatic hydrocarbons (PAH) (Perera, 2014)

Lack of outdoor play associated with short-sighted children

- Short-sighted children
  - Spent ~ 3.7 fewer hours/week outdoors than those with normal/long-sighted vision
  - Each additional hour spent outside/week reduces risk of myopia by 2%
- How nature might protect against short-sightedness

  ? Exposure to natural light

  ? Time spent looking at distant objects

Sherwin, 2014

Why is nature necessary?

- Sunlight
  - Without it → circadian rhythms disrupted, vit D deficiency…
- Movement
  - Insufficient movement → sedentary
- Fresh air
  - Without it → polluted indoor / outdoor air
- Natural surroundings
  - Television/video games (with rapid changes in visual scenes) → temporarily pleasure but is NOT restorative
  - Being in nature leads to improved mood and improved attention, whereas television/video games does not (Kubey, Sci Am, 2000)
- Animals, trees
  - We need attachments, whether it be people, otherwise, **fellow mammals and other creatures**

Theories on why nature is important

- ”Biophilia" theory
  - Humans are hard-wired genetically to be connected to nature
  - Humans suffer when deprived of nature
- Attention Restoration Theory (ART)
  - Brain relaxes in nature, entering a state of contemplative attention that is restorative or refreshing which permits **creative thought**
  - In contrast, in busy urban settings the brain's working memory is bombarded with distractions and attention systems are on alert
- In other words, the modern environment does not give us what **we evolved to require** for true happiness and contentment…

Marc Berman

We are know that nature is important

Many ways that we try to incorporate nature…

- Nature is deep in our psyche
- Living in nature, camping, cottages, trailers, etc…

Image from Wikipedia

Image from www.carleton.ca

Wilderness Education Programs

- Therapeutic factors include
  - Direct exposure to nature
  - Disconnect from unhealthy influences
  - Strengthens attachment to adults
    - Need to rely upon adult expertise to survive

Image from www.adventurecamp.com

Creativity and Nature

- When do you find your most creative thoughts and thinking?
  a) While in a relaxed state, such as in nature, or in the shower, etc.
  b) While in a stimulated state such as playing a first person shooter video game, or watching an exciting movie or TV show?

Nature is important, but its not all just about nature…

Can these baby animals survive on their own?

Can these baby animals survive on their own? **YES!**

Can this baby animal survive on its own?

Can this baby animal survive on its own?

NO!

We are programmed to require attachment

- Humans cannot survive on their own and are dependent on others for survival
- This basic reality is hard-wired into us
- Core drive of every person is to be connected to other people (**and nature)**

Bowlby, 1940; Ainsworth, 1979; Schore, 2001; Neufeld, 2004

Attachment (to people and nature) is thus required for:

- Normal development
  - Motor, sensory, self-regulation, including emotional regulation, left/right hemisphere integration, etc.
- Mental health, including happiness, contentment…
  - Healthy attachments contribute to healthy relationships later in life
  - Unhealthy attachments early in life lead to unhealthy relationships and mental health problems later in life…
- Attachment/connection drives us through all stages of life
  - Infant/toddlers/children
  - Teenagers/youth
  - Adults

Bowlby, 1940; Ainsworth, 1979; Schore, 2001; Neufeld, 2004

Its all about attachment

- Resiliency
  - Ability to overcome adversity is known as “resiliency”
  - Not everyone exposed to stresses develops problems; many in fact, will thrive…
- Regardless of the area (e.g. mental health, school, staying out of problems with the law), attachment is one of the most important (if not most important) resiliency factors …

Bowlby, 1940; Ainsworth, 1979;
Schore, 2001; Neufeld, 2004

In other words…

- By all means, kick your kids off the TV and video games so that they can play outside…
- But make sure that you also keep your connection with them too!
- So ideally, kick your kids outside, **and** spend time outside with them too!

The problem with technology: "I'd love to get my kids outside, but I can't get them off the screens…"

Survey Data

- U.S. children/teens (age 8-18) spend more time in front of an electronic screen than with family/friends
- Most have no household rules on their use
  - 7 hr/day
    - Television, cell phones, hand-held games, Internet games, Facebook and video games
  - 2-hrs/day
    - Violent video games

Generation M2: Media in the Lives of 8- to 18-year olds, Kaiser Family Foundation

- **54% of kids** preferred to spend time with the TV compared to parents

AC Nielsen report

The problem with technology

- We are a social, not solitary species
- Unfortunately, our ‘primitive’ brains are seduced by devices designed by billion dollar companies
- Many of the addictive technologies like video games, devices are **designed to be addictive**
- They provide sensory stimulation that our brains never evolved to handle
- No wonder, that everywhere we go, you can find people ignoring each other for their technology

We all know that this is the ideal…

But this is what we are seeing…

From http://www.babble.com/kid/parents-on-phones-ignoring-their-kidsis-your-picture-on-this-list/yeah-uh-huh-2/

But this is what we are seeing…

- >50% parents let their babies use smartphone or tablet
  - 1/7 allowing for 4+ hrs/day
- “Baby/Toddler Apps”

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Four-year-old girl is Britain's youngest iPad ADDICT: Shocking rise in children hooked on using smartphones and tablets

- She is one many children displaying compulsive behaviour with the device
- Girls is so addicted to games that she experiences withdrawal symptoms
- Poll shows more than half of parents let their baby use tablet or smartphone
- 81 per cent of parents worry their children spend too long on gadgets
- Doctors note increase in addicted children 'inconsolable' without them

By REBECCA SEALES and ELEANOR HARDING FOR THE DAILY MAIL

PUBLISHED: 10:46 GMT, 21 April 2013 | **UPDATED:** 17:22 GMT, 27 April 2013

But this is what we are seeing…

The iPotty!

iPad Apptivity Seat from Fisher-Price

Why connection to technology is bad…

Technology addiction is hurting parent-child bonding

- Once a child learns to speak, many parents offer children technology to meet child's attachment needs (Rhame)
- As such disconnected children grow older, they may be at a higher risk of turning away to peers, technology, or negative behaviours such as self-harm, drug use (Neufeld, 2012)

VIDEO CLIP:
Tronick's Still Face

Technology can never meet a child's deep needs

- Technology is no replacement for attachment with a parent
  - Needs such as connection through the senses, sameness, belonging/loyalty, and **unconditional acceptance and validation**
- Studies confirm
  - Parents using devices more likely to respond to their children in a harsh or negative manner (Radesky et al.: Patterns of mobile device use by caregivers and children during meals in fast food restaurants, J. Paediatrics, 2014)
  - Children emotionally hurt when ignored by parents distracted by a device (Sherry Turkle, 2013)
    - In particular, being ignored by parents 1) at meals, 2) at pickup after school, 3) extracurricular activities, sports events

Lack of Empathy from Loss of Face-to-Face Contact

- Plugged in kids have…
  - Less face-to-face communication with a live human being
  - Less opportunities to learn how to make eye contact, read facial expressions, interpret body language and tone of voice
  - Less opportunities to learn empathy
- Studies confirm
  - Many adolescents and teens today are having difficulty identifying emotions in people
  - Generations since the 70's are more and more narcissistic and less empathatic (Twenge, 2013)
  - UK Association of Teachers and Lecturers reports rising numbers of children who can swipe a screen, but unable to perform use building blocks, **or socialize with others** (http://www.telegraph.co.uk/education/educationnews/10767878/Infants-unable-to-use-toy-building-blocks-due-to-iPad-addiction.html)

“Screen sucking”

- “Screen sucking” = Excess use of technology
- Screen-sucking not only is a waste of time, it is also addictive
- Robs a child from participating in other activities, such as playing outdoors, getting exercise, reading a book, or doing schoolwork
- In the trance induced by screen-sucking, the child builds no useful skills and wastes precious time he or she could be investing in beneficial activities.
- So alluring are the screens, however, that children feel all but compelled to sit in front of them, sucking away…

Dr. Hallowell, ADHD expert

Lack of Empathy from Desensitization

- Today's child is exposed to many sources of violence, cruelty and age-inappropriate content whether on internet, TV, movies, video games
- Contribute to desensitization to violence, and loss of compassion, empathy and caring for others

VIDEO CLIP:
Let’s stop things before we get to this point…

Technology Use from Tech CEO's

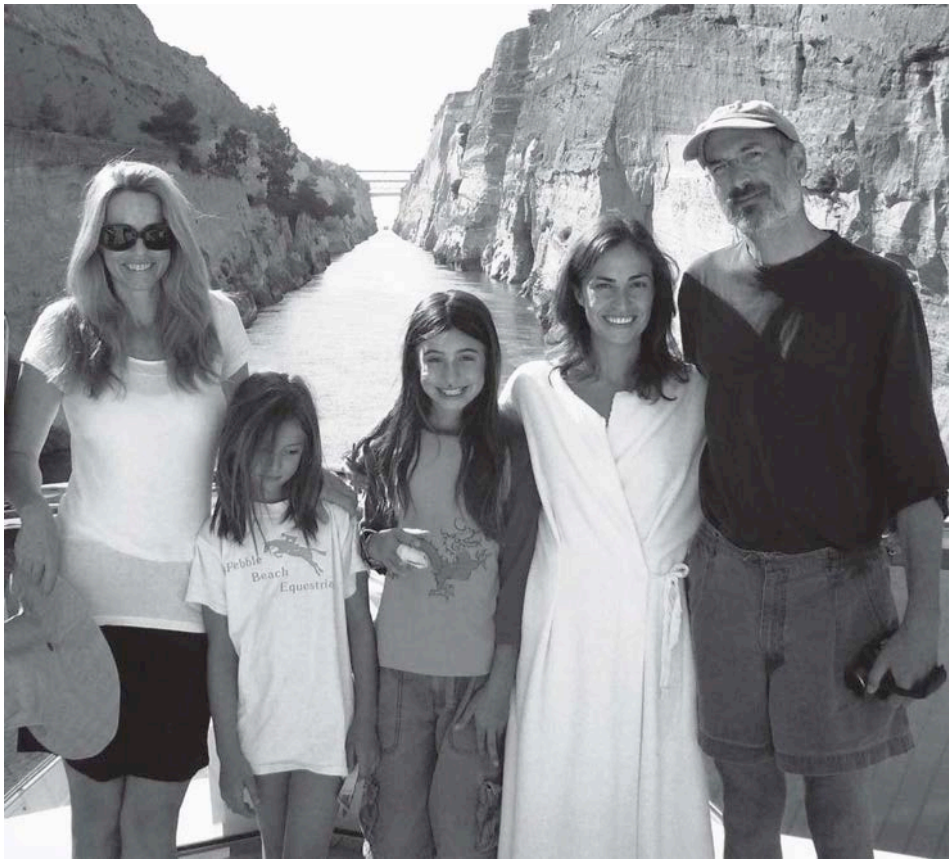
Silicon Valley executives send their kids to... a school with no computers

- Many top executives from Google, Apple, Yahoo, Hewlett-Packard, send their kids to the Waldorf School of the Peninsula
- **No computers in the classrooms**
- Younger pupils educated with **pencils, pen and paper, painting and knitting**
- Students report frustration with parents /relatives that are wrapped up in phones and other devices

http://www.nytimes.com/2011/10/23/technology/at-waldorf-school-in-silicon-valley-technology-can-wait.html?pagewanted=all

Steve Jobs, Apple CEO, was a low tech parent!

- Steve Jobs did not allow his youngest children (aged 12, 15) to have iPads when it came out in 2010
- Reporter: “Your kids must love the iPad…”
- Steve Jobs: “They haven’t used it… We limit how much technology our kids use at home… At the dinner table, we talk about books and history.”



http://www.nytimes.com/2014/09/11/fashion/steve-jobs-apple-was-a-low-tech-parent.html?_r=1

Technology Use Guidelines for Children and Youth

Guidelines collected from various sources…

- Cris Rowan, pediatric occupational therapist and author of Virtual Child;
- Dr. Andrew Doan, neuroscientist and author of Hooked on Games;
- Dr. Hilarie Cash, Director of reSTART Internet Addiction Recovery Program and author of Video Games and Your Kids
- Dr. Larry Rosen, Huffington Post
- Various tech parents (as quoted in NY Times)
- Contribution from the
  - American Academy of Pediatrics and the
  - Canadian Pediatric Society

Principles

- What children/youth need above all, is healthy connections with parents
- Technology is no replacement for genuine human interaction
- Ensure you have a close relationship with your child that is nurturing and caring
  - Spend 1:1 time with your child
  - Be sure that you are the primary influence in your child's development rather than technology, to protect yourself against negative influences from television, media, video games
  - Be close so that your child can turn to you to meet their core needs rather than technology

Recommendations

- Don't use technology as a babysitter
  - If your child is bored
    - Provide empathy
    - Boredom → Creativity

Recommendations

- Have rules/limits about technology
- Have tech-free times so that family can connect
  - E.g. All family members (including parents) should put devices into a basket when they come in through the door, and only retrieve them at a pre-designated time, e.g. after dinner
- Limit technology during dinner, ideally even TV

(Ritchie, personal communication)

Recommendations for age 0-2

- No technology
  - No TV
  - No handheld devices
  - No video games
    - No non-violent
    - No violent games
- “Don't leave your devices (e.g. iPad) around… if children see all the pretty colours, they will want to use it too” (Dr. Richard Graham, UK, 2014)

Recommendations for age 3-5

- Some technology
  - Some non-violent TV
    - 1-hr daily max
  - No handheld devices
  - No video games
    - There is no convincing evidence that video games (even educational video games) improve child development

Recommendations for age 6-10 / age 6-12

- Some technology
  - Weekdays:
    - No gadgets at all
    - No screen time
    - No video games
    - No screen time in bedroom
  - Weekends
    - Limit of ½ hr to 2-hrs on gadgets
    - Non-violent TV up to 2-hrs daily
    - No screen time in bedroom at all

http://www.nytimes.com/2014/09/11/fashion/steve-jobs-apple-was-a-low-tech-parent.html?_r=1

Technology Rules based on informal survey of tech CEOs

- Children aged 10-14
  - Weekdays: May use computers for **homework only**
  - No screen time
  - No screen time in bedroom at all
- Rules on social media
  - Many tech parents ban social media outright
  - Others permit it, as long as kids use Snapchat (which deletes messages) after being sent (thus, kids don't have to worry about things coming back to haunt them later in life)

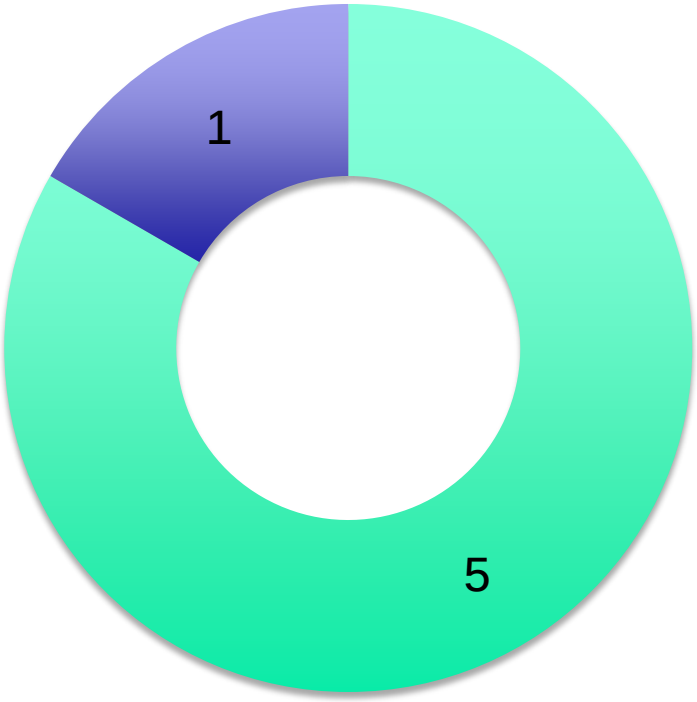
http://www.nytimes.com/2014/09/11/fashion/steve-jobs-apple-was-a-low-tech-parent.html?_r=1

Recommendations

- Find alternatives to screen time
  - Encourage non-electronic activities such as
    - Reading
    - Sports
    - Crafts
    - Extracurricular activities

Recommendations for Children

- 1:5 Ratio
  - For every 1-minute of technology, a child should be spending 5-minutes doing non-tech things

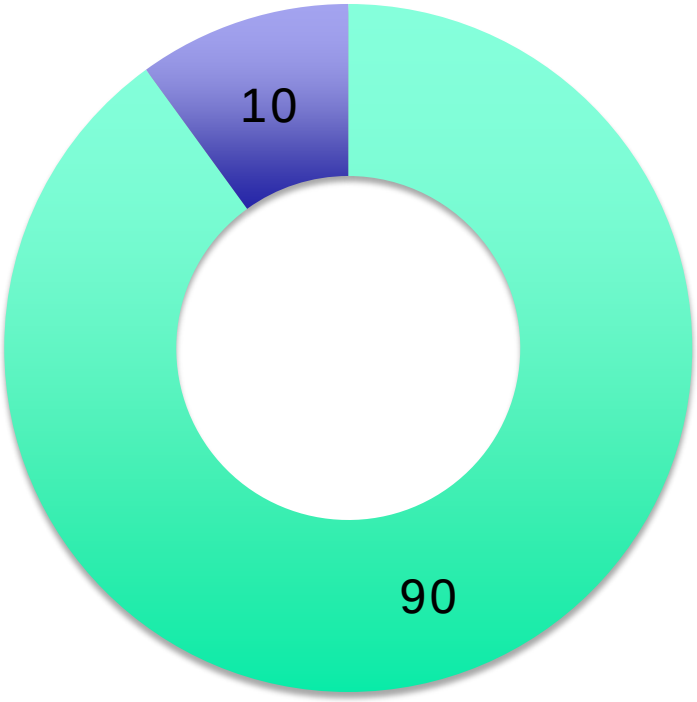


Dr. Larry Rosen, 2014

Recommendations for Adults

- Daytime Basic Rest and Activity Cycle (BRAC) = 90-min
- After 90-min. technology → need short rest of > 10-min.

Dr. Larry Rosen, 2014



Recommendations

- For every 1-hour of screen time, children/adults need at least 1-hr of restorative nature time to compensate

Louv, 2005

Don't be like these people in our 311 Waiting Room

AMERICAN-EAGLE

Tips on Getting More Nature

Tips for Individuals

- Walk everyday in an area which is more natural than man-made. This could be in the country but it could also be a park or a tree lined street. It could also be the coast or along a river.
- Get out the country, or the coast, as much as you can at weekends or on holidays.
- Join a local nature or walking group.
- Take up an outside hobby, e.g. walking, biking, bird watching, golf, etc.

CentreforConfidence.co.uk

Tips for Individuals

- Grow a garden outside.
- Get house plants.
- Have nature pictures on the wall.
- Arrange chairs/tables near the window
- Shop at the local grocer, rather than drive to the outlet mall
- Don’t vote for politicians that allow developers to build suburbs kilometers from nearest grocery store

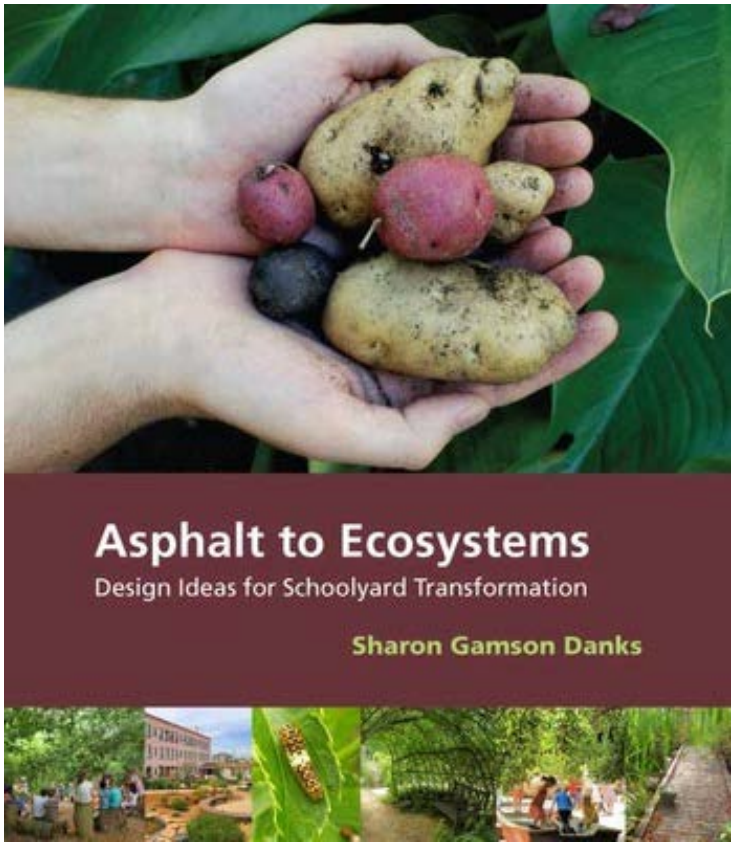
CentreforConfidence.co.uk

Tips for Parents and Families

- ❑ Walk with your kids to school
- ❑ Have family outings in wild places
- ❑ Have family walks in the evening
- ❑ Spend 1:1 time **outside with your kids**
- ❑ Create or join a family nature clubs
- ❑ Visit Cheryl Charles' Children & Nature Network (www.childrenandnature.org)

Tips for Educators

- Advocate for more green in schools as well as outdoor green spaces
  - E.g. grass rather than concrete / asphalt
- Never punish a child by removing their contact with recess / nature
  - If a child is having behavioural, emotional or other difficulties, they need recess / nature more than ever
- Embed nature in the curriculum
- Promising practices include ‘forest schools’, ‘outdoor education’, etc…



Tips for Health Care Professionals

- Take a holistic, psycho-social-spiritual-environmental perspective
- Avoid narrow, reductionist views (such as focusing just on medications)
- Diagnose “Nature Deficit Disorder” to build awareness
- Prescribe nature, “ecotherapy”
- Promote or start nature programs such as
  - CMHA Walking Groups
  - Youth Net Take a Hike

Contact with Nature as a Public Health Intervention

- **Contact with nature is a powerful, cost-effective public health intervention**
- Collaboration is required by researchers in health, social services, urban planning and environmental management

Maller et al., Health Promotion International, 21(1), Mar 2006.

Tips for Urban Planners

- Reverse the trend of having cities divided into separate zones for living and working, with commuting between them
- Communities must be walkable or bikable so people get out of cars
- Design communities where people can live, work and play
  - E.g. Have shops and grocers within walking distance
  - E.g. Young teenagers are 2.5 times more likely to walk if there is a recreation destination within 1-kilometre of their home

Image from http://ibikenopa.blogspot.ca

Tips for Urban Planners

- Parents must feel safe to let children bike to school
- Ramps (‘curb cuts’) need to be adequate in order for people with disabilities to venture out into their communities.
- Increase housing density to reduce urban sprawl
- Don’t allow developers to build new suburbs far away from grocery stores
- Safe and interesting parks
- Visit Holland!

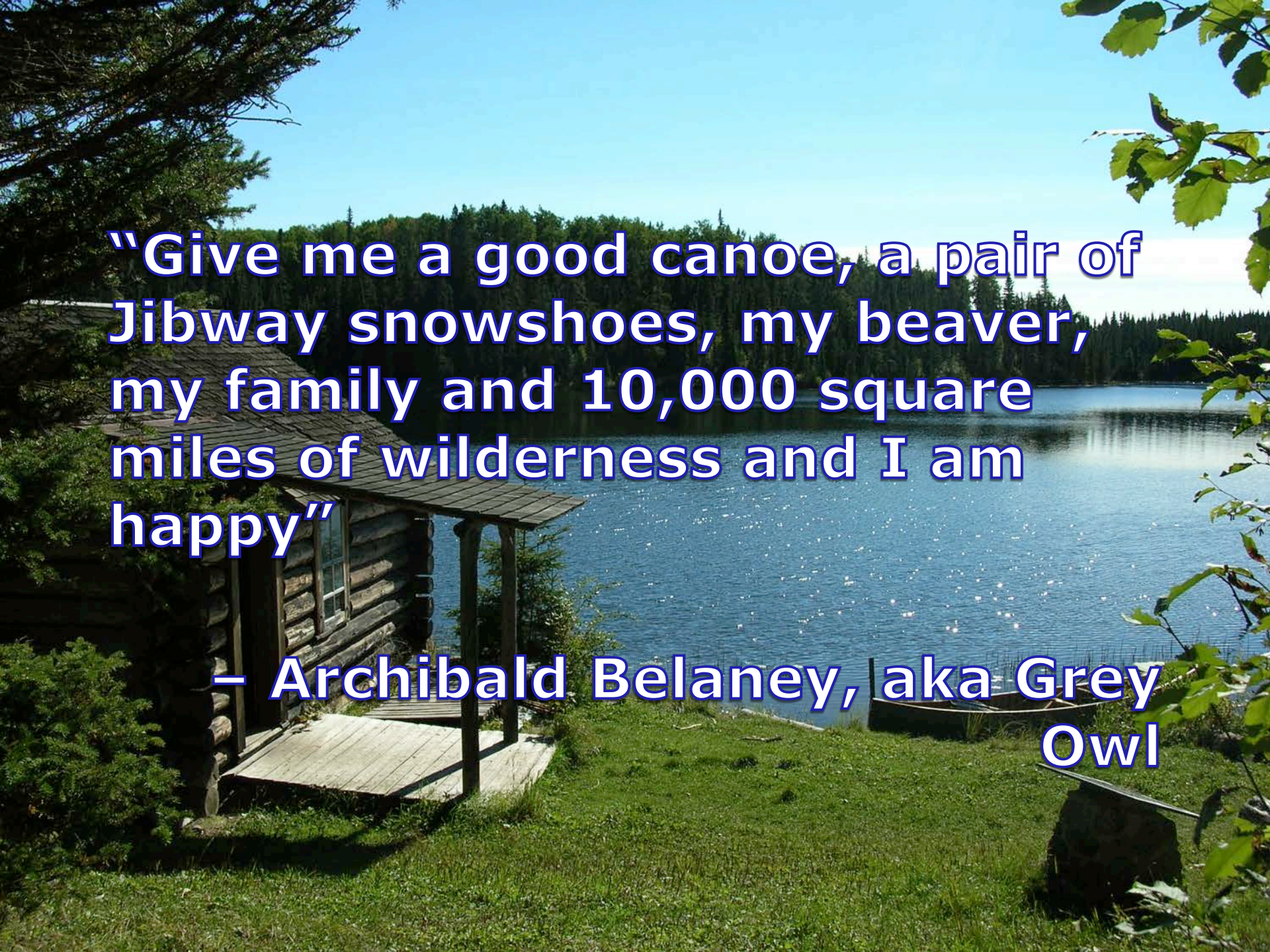
Tips for Managers/Policy Makers

- Review how much exposure your employees/clients may have to the green or natural environment and how much this can be improved by your organization.
- Set up a committee to look at how contact with the natural world can be improved.
- Improve the landscaping around buildings.
- Try to create a green effect indoor through plants. Encourage an office group to look after them and encourage staff to bring in plants.
- Hang up pictures or posters of natural scenes. Install a water feature if possible.
- Where possible, have retreats, trainings away in a green environment. Allow time in the program for a walk.

More nature for an inpatient psychiatric unit

Nature for an inpatient psychiatric unit

- Pictures of nature
- Natural lighting
- Activities such as
  - Gardener
  - Looking after plants
  - Pet therapy
  - Going out for walks
- Architecture / design issues
  - Inner courtyard with nature


"Give me a good canoe, a pair of Jibway snowshoes, my beaver, my family and 10,000 square miles of wilderness and I am happy"
– Archibald Belaney, aka Grey Owl

VIDEO CLIP:
Young David Attenborough discovers the Tech Crèche

Still struggling with getting more nature?

Join a more traditional society!

Images from Wikipedia.org

Get a Feng Shu Consult!

- Bringing nature into one's living spaces is a key component of Feng Shui, which seeks to balance the five elements:
  - Fire: Passion, enthusiasm, warmth
  - Earth: Staying grounded and being present
  - Metal: Mental clarity and determination
  - Water: Spirit and synchronicity
  - Wood: Growth
    - **Trees, plants, flowers, pictures of plants/flowers**
    - Shapes such as pillars, columns, vertical lines

http://www.feng-shui-and-beyond.com/feng-shui-living-room.html

Just wait until the zombie invasion!

Walking Dead, Still Photo

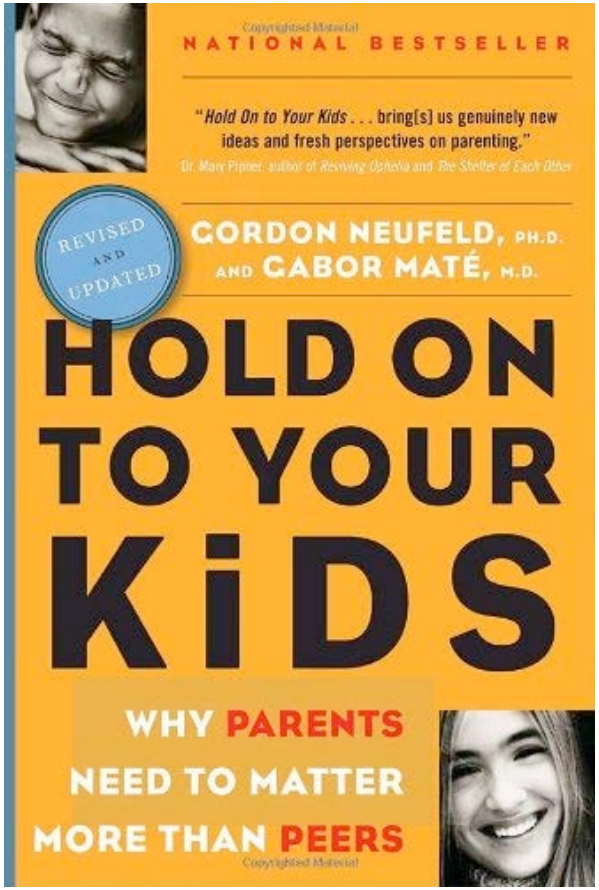
VIDEO CLIP:
Gary Turk's Look Up

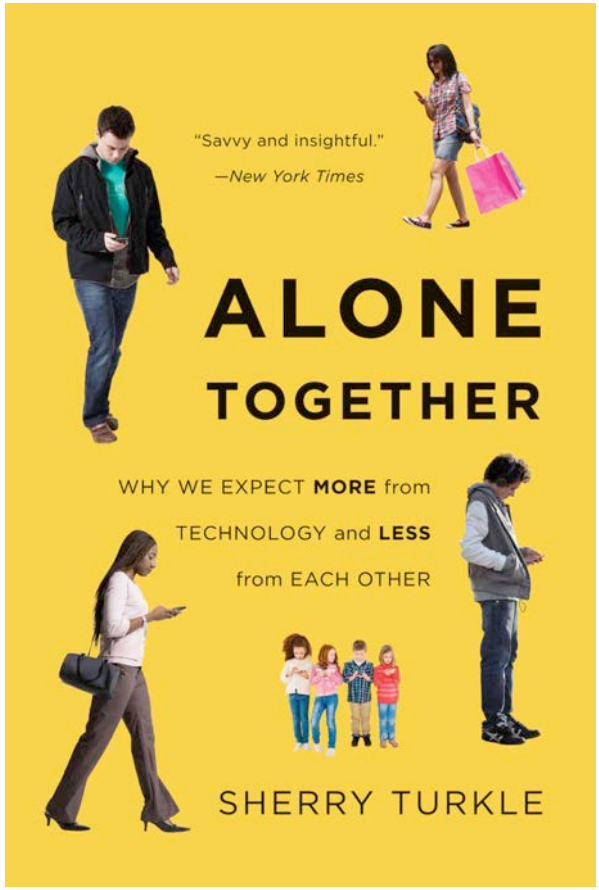
In Summary

Learning Objectives

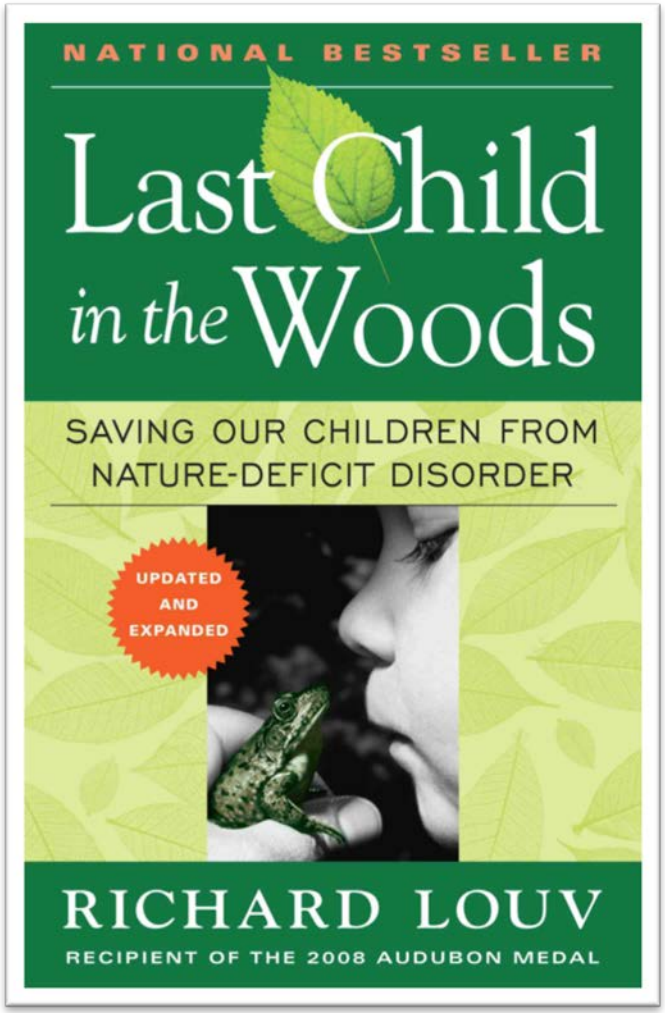
- By the end of this session, participants will be able to:
  1. List 3 examples of scientific literature supporting that which we already know intuitively; that nature is essential for emotional and physical health.
  2. List 3 ways in which modern society has disrupted our connection with nature.
  3. List 3 ways to reconnect with nature.

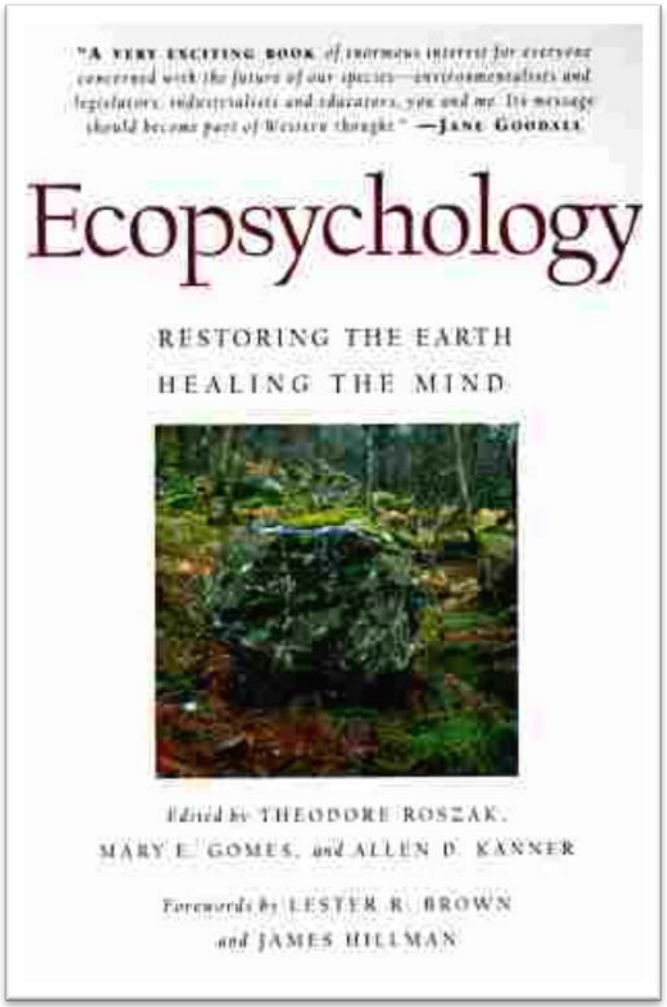
References and More Information





References and More Information





References and More Information

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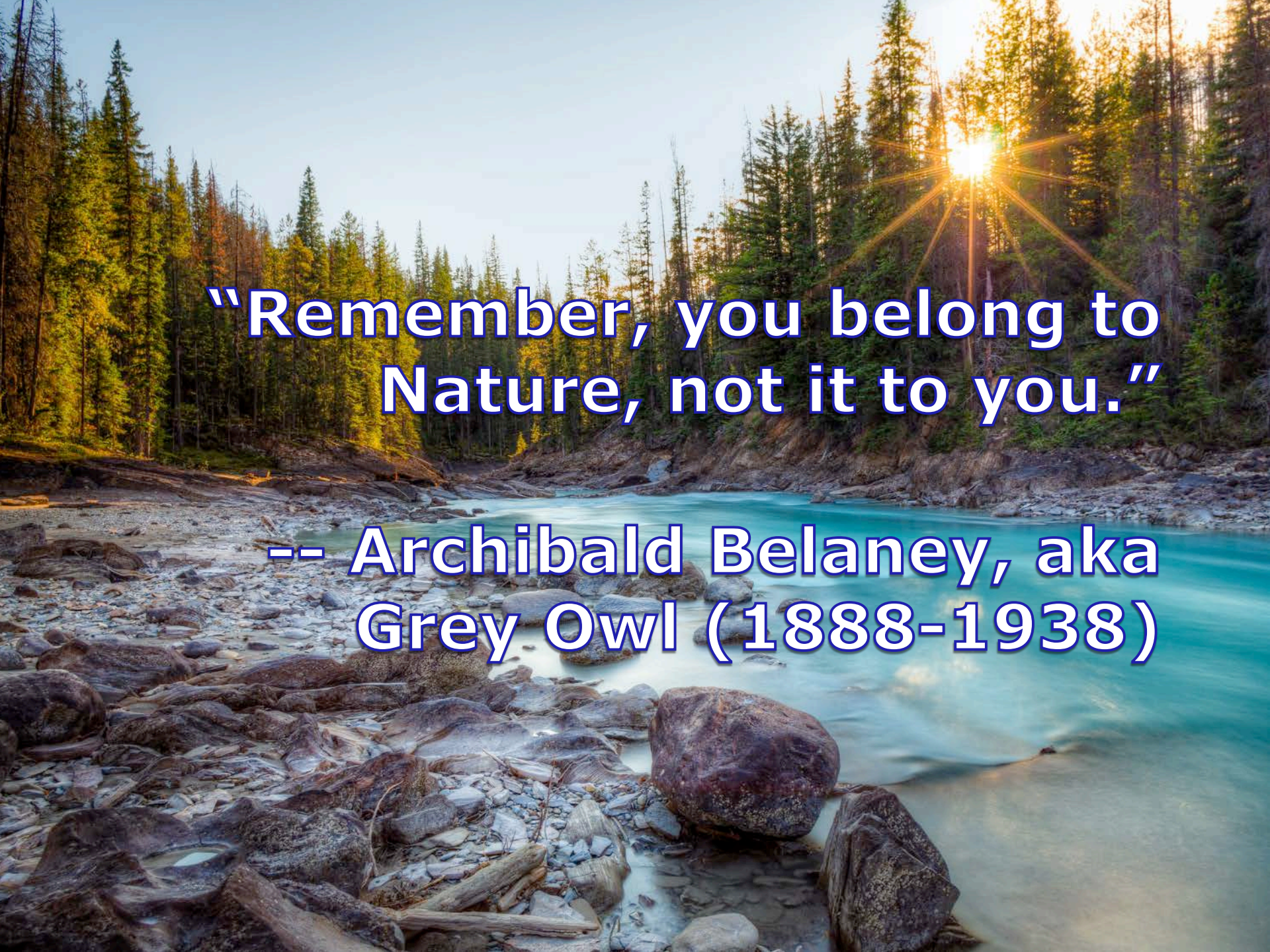
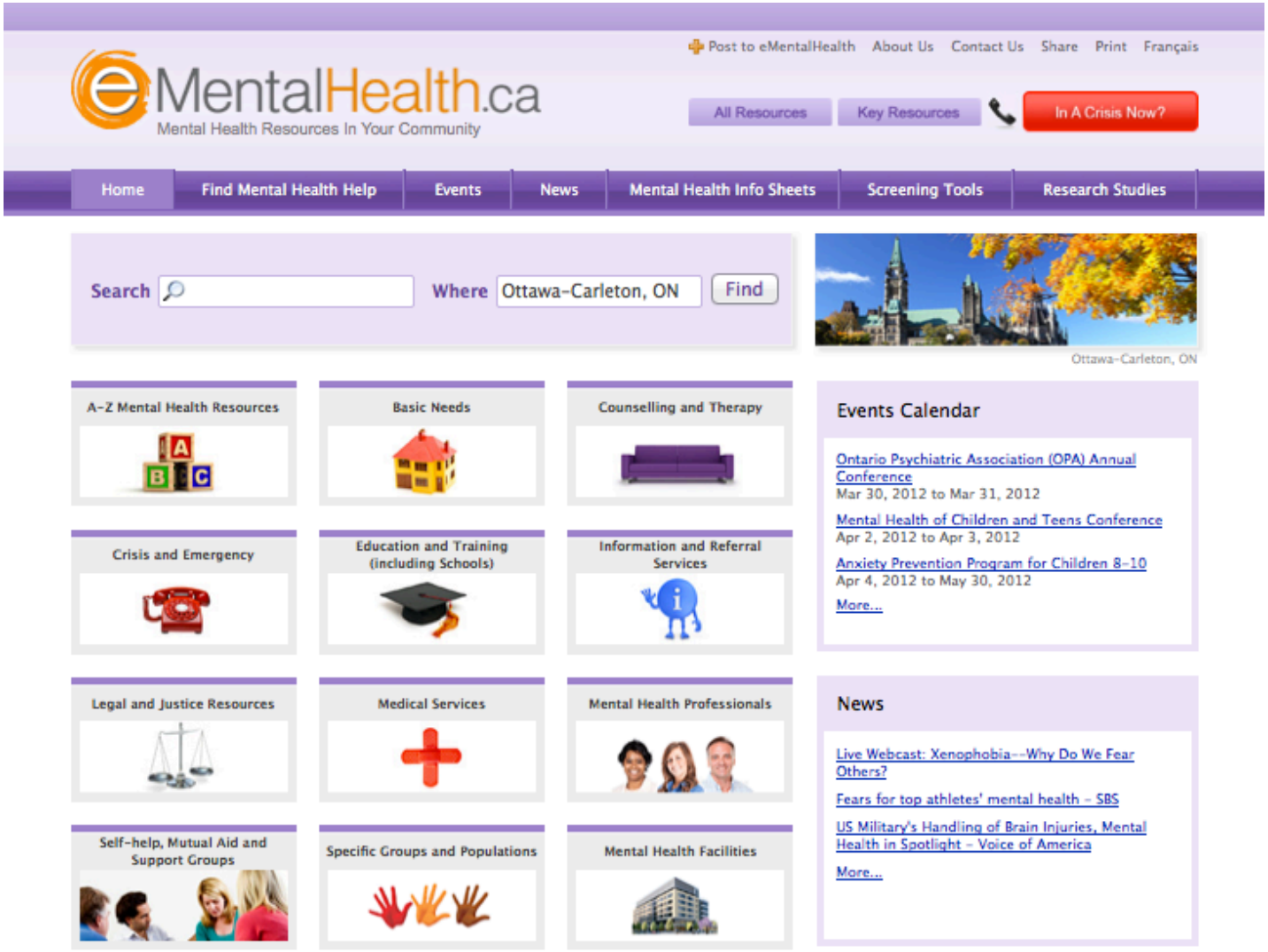
References

- Maltz, Psycho-Cybernetics, 1960.
- Lally et al.: How are habits formed, European Journal of Social Psychology, 2009, http://onlinelibrary.wiley.com/doi/10.1002/ejsp.674/abstract


"Remember, you belong to Nature, not it to you."
-- Archibald Belaney, aka Grey Owl (1888-1938)

For more information about mental health and where to find help…



Any questions?

Webcasters:
Type your question

Video-conferencers:
Unmute your system to ask a question

Thank you!

for participating in today's

Mental Health Series

Join us next time:

Details to come around
the Winter 2015 session.

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