



International Day for the Elimination of Racial Discrimination

21 March

INTERCONNECTIVENESS



Cheryl Bartlett, PhD

Canada Research Chair in
Integrative Science

(www.integrativescience.ca)

Professor of Biology

CAPE BRETON
UNIVERSITY

presentation:

Acadia University, Wolfville, NS

21 March 2011



International Day for the Elimination of Racial Discrimination

21 March

ABSTRACT: “Interconnectiveness” ... says Mi’kmaw Elder Murdena Marshall of Eskasoni First Nation wherever and whenever she explains her Mi’kmaw culture. And then she simply chuckles, while insightfully and merrily continuing to say it, when people tell her the word does not exist in the English language. Murdena’s “interconnectiveness” can be viewed as the dynamic of mindfully living within an expanding sense of holistic relationships with everything and everyone, i.e. “all my relations” or “all of Creation”. Cheryl Bartlett, who is a Canada Research Chair in Integrative Science, will explore “interconnectiveness” in her presentation on March 21 – the International Day for the Elimination of Racial Discrimination and “almost” (2011) the Spring Equinox. Cheryl will do this using an integrative approach to bringing together knowledges from different epistemic communities. She will also explain the Integrative Science co-learning journey in Unama’ki – Cape Breton where, for 15+ years, university researchers and Mi’kmaw Elders have been working together (within participatory action research projects) to recognize the strengths in both Indigenous and western scientific knowledges and ways of knowing ... and to use these strengths together for the benefit of all.



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*... the dynamic of
mindfully living within
an expanding sense of
holistic relationships
with everything
and everyone,
i.e. “all my relations”
or “all of Creation”*



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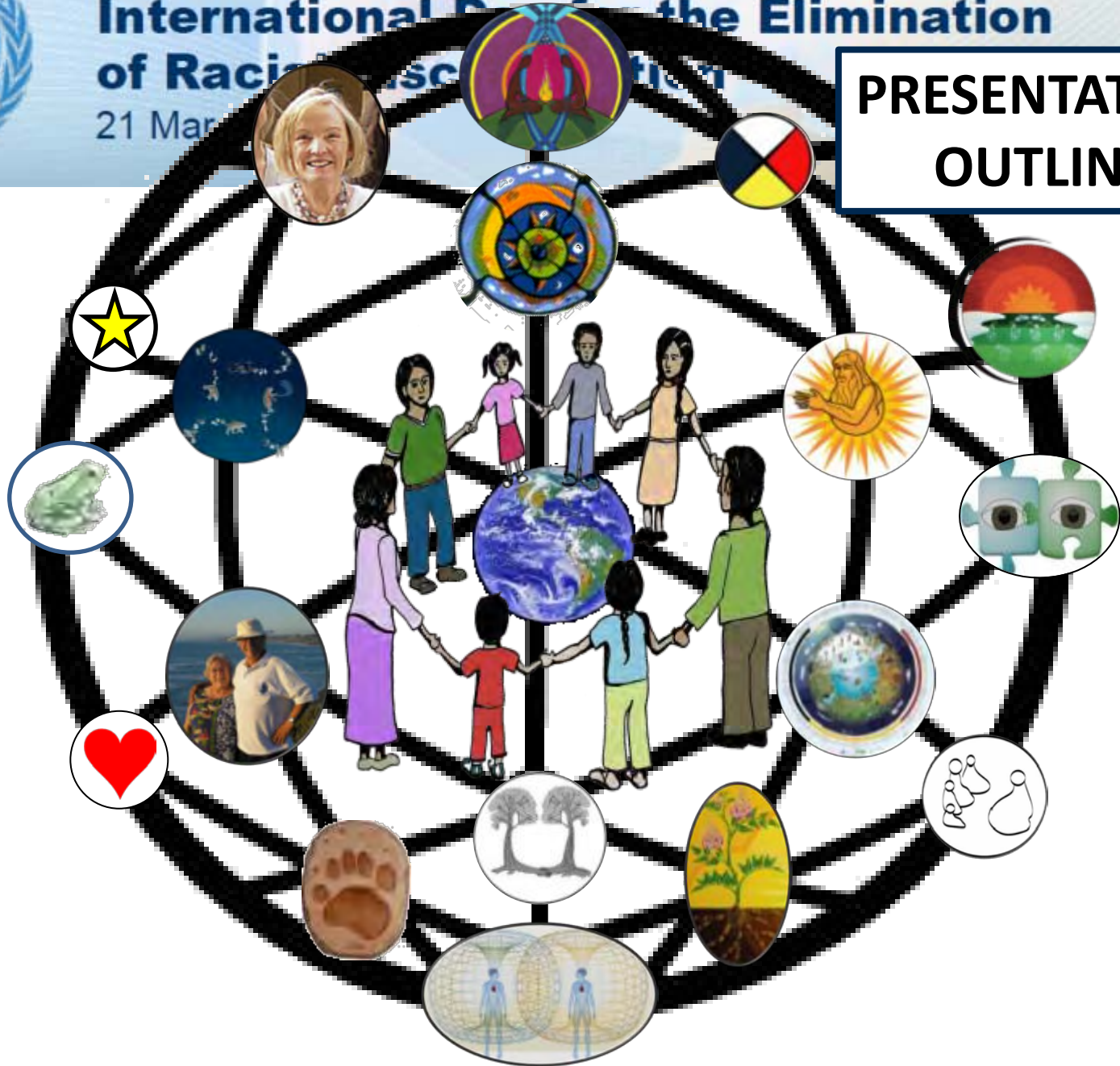
**Mi'kmaw Elder Murdena Marshall,
Eskasoni First Nation, Unama'ki – Cape Breton**



International Day for the Elimination of Racial Discrimination

21 March

PRESENTATION OUTLINE





International Day for the Elimination of Racial Discrimination

21 March





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**Mi'kmaw Elders Murdena & Albert Marshall,
Eskasoni First Nation, Unama'ki – Cape Breton**



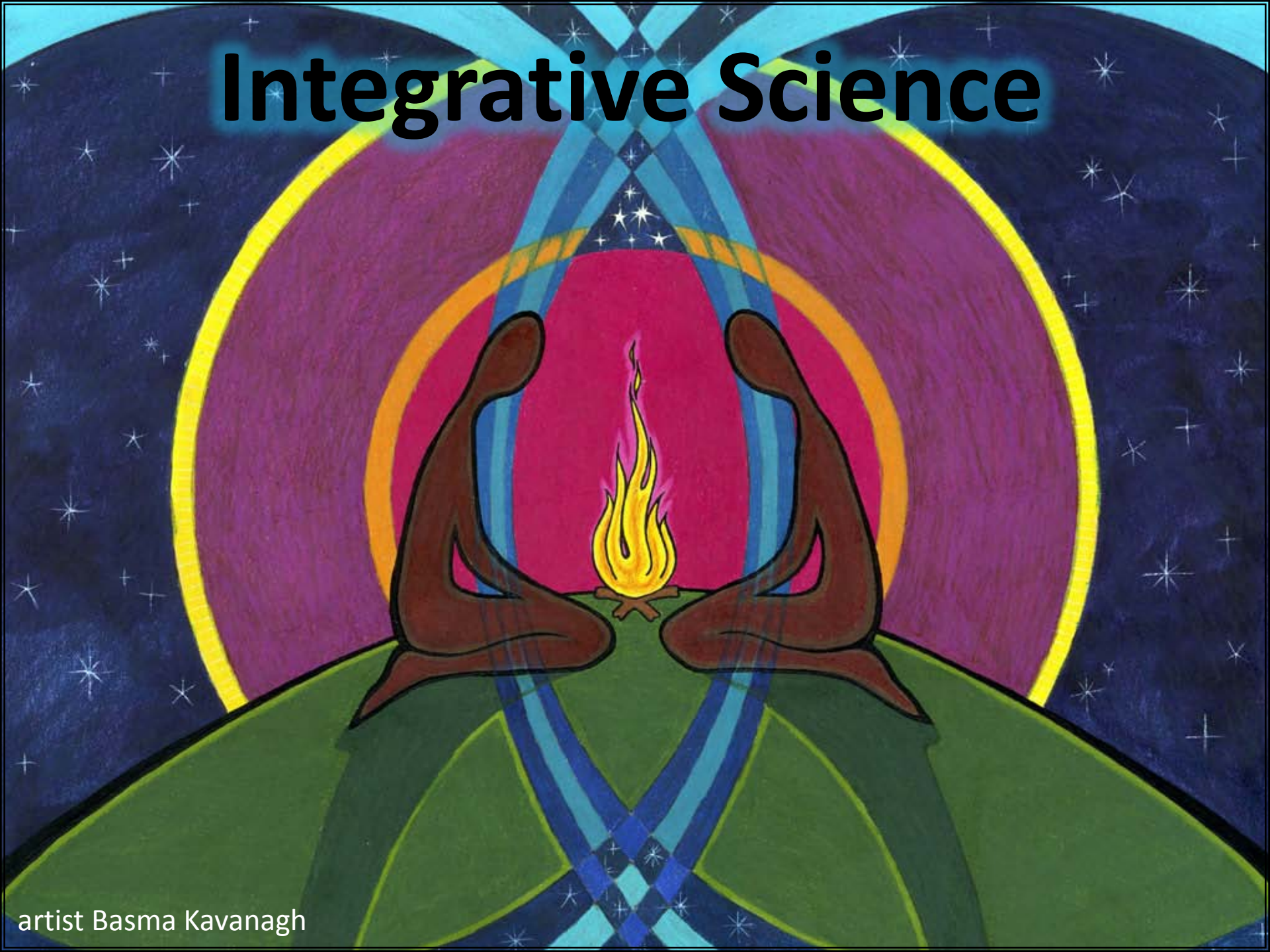
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Integrative Science



artist Basma Kavanagh

Integrative Science



our stories
our cosmologies
our philosophies
our worldviews
our knowledges
our sciences

Indigenous

Western

“bringing together”

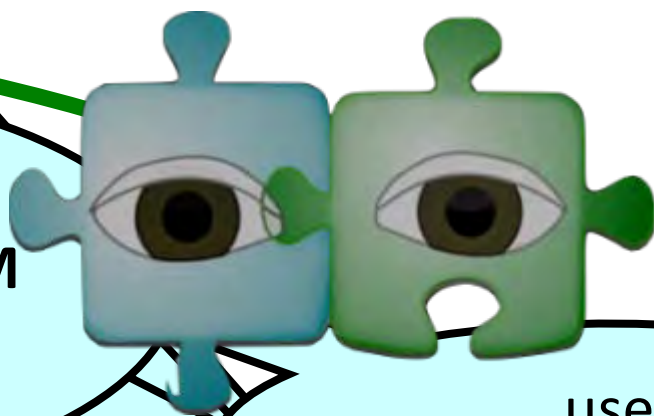
Integrative Science



Indigenous

Western

SEVEN BASIC LESSONS LEARNED



1. **ACKNOWLEDGE WE NEED TO LEARN FROM EACH OTHER ...**
co-learning journey

2. **use TWO-EYED SEEING**

4. **DO ... in a CREATIVE, GROW FORWARD WAY**

3. **view "SCIENCE" inclusively**

revitalize LANGUAGE share **STORIES**

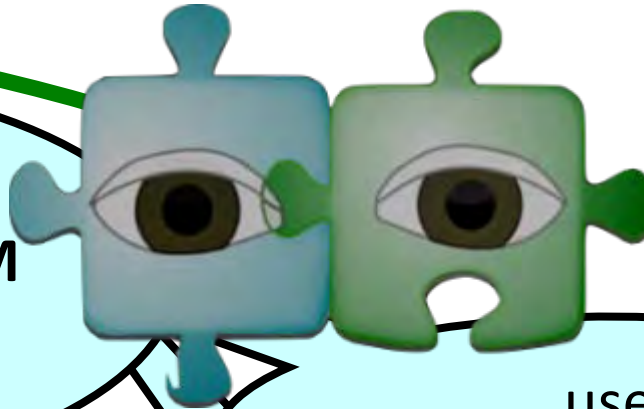
6. **use VISUALS**

5. **put our VALUES + ACTIONS + KNOWLEDGES** in front of us ... like an object

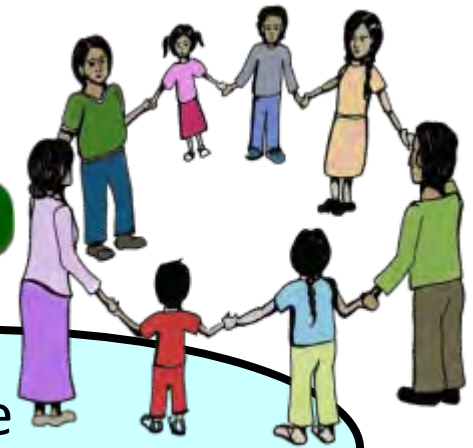
7. **WEAVE** back and forth between our worldviews

SEVEN BASIC LESSONS LEARNED

1. **ACKNOWLEDGE WE
NEED TO LEARN FROM
EACH OTHER ...**
co-learning journey



2. **use
TWO-EYED SEEING**



share **STORIES**

6. **use VISUALS**



International Day for the Elimination of Racism

21 March





International Day for the Elimination of Racial Discrimination

21 March



**Go into the forest ... you see the birch, maple, pine.
Look underground and all those trees are holding
hands. We as people must do the same.**

(words of late Mi'kmaw Chief, Spiritual Elder and Healer Charlie Labrador)



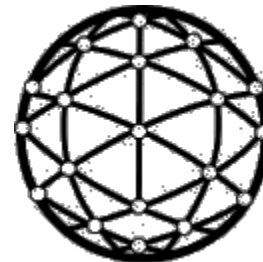
Co-Learning Journey



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INTERCONNECTIVENESS

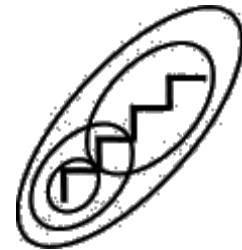
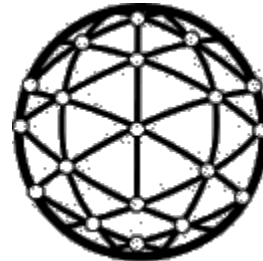




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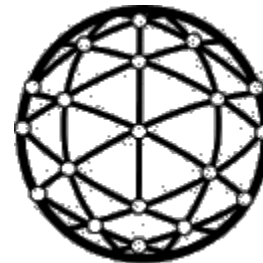




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INTERCONNECTION



TWO-EYED SEEING



Mi'kmaw Elder
Albert Marshall,
Eskasoni First Nation,
Unama'ki –
Cape Breton



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**LEARN ... to see from one eye with the best in our
Indigenous ways of knowing and from the other eye**

**with the best in the Western
(mainstream) ways of
knowing and ...**



TWO-EYED SEEING

**... learn to use both these
eyes together, for the benefit
of all.**

(Guiding Principle in the words of Elder Albert Marshall, Mi'kmaw Nation)



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INTERC



Native Council of Nova Scotia; Mi'kmaq Language Program; Artist: Michael J. Martin



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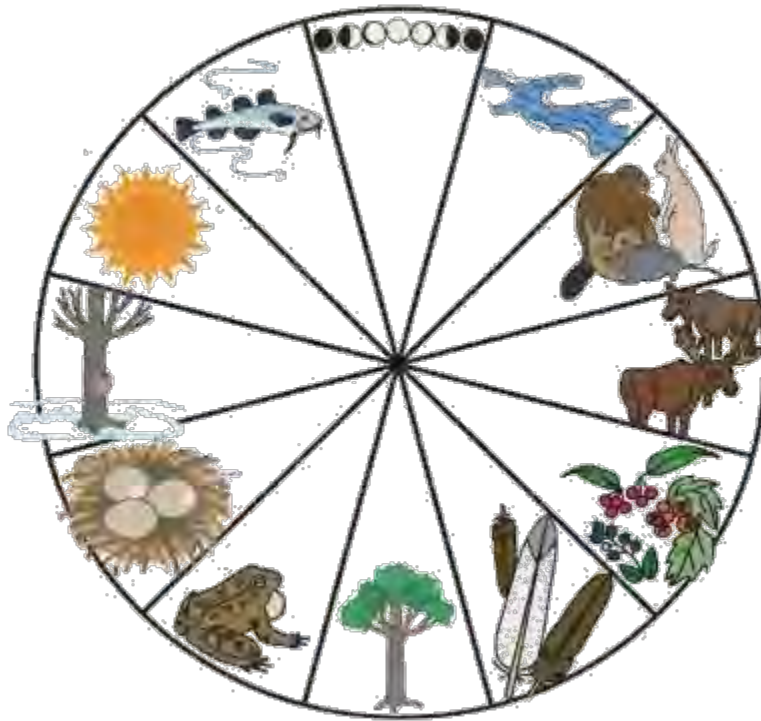


One Full Year in Mi'kma'ki



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Moons in One Full Year



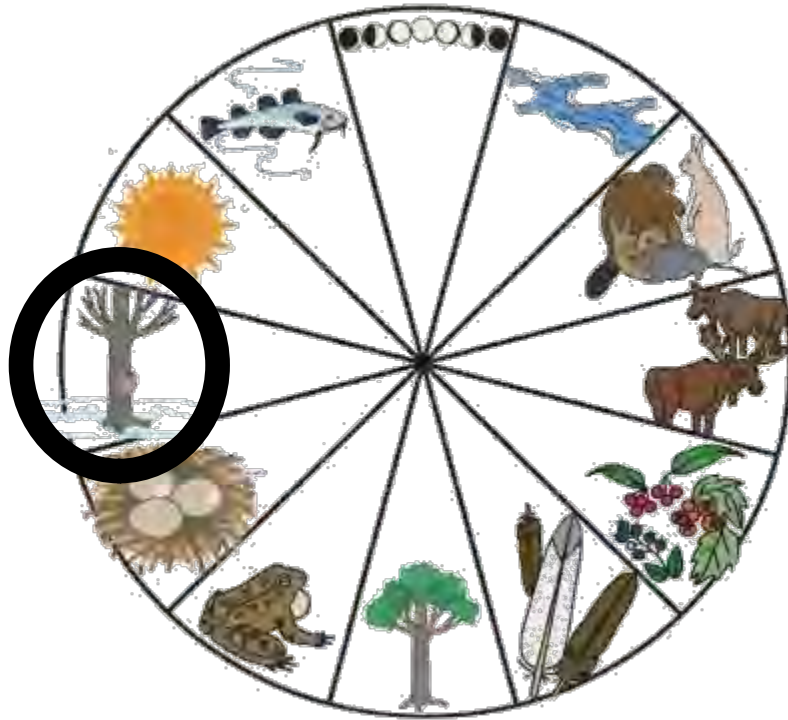
One Full Year in Mi'kma'ki



International Day for the Elimination of Racial Discrimination

21 March

≈ Spring Equinox



Moon of
“Maple Sugar Time”



One Full Year in Mi'kma'ki



International Day for the Elimination of Racial Discrimination

21 March

“equality” of day and night – around the world

≈ Spring Equinox



“Maple Sugar Time”



One Full Year in Mi'kma'ki



International Day of the Elimination of Racial Discrimination

21 March





International Day for the Elimination of Racial Discrimination

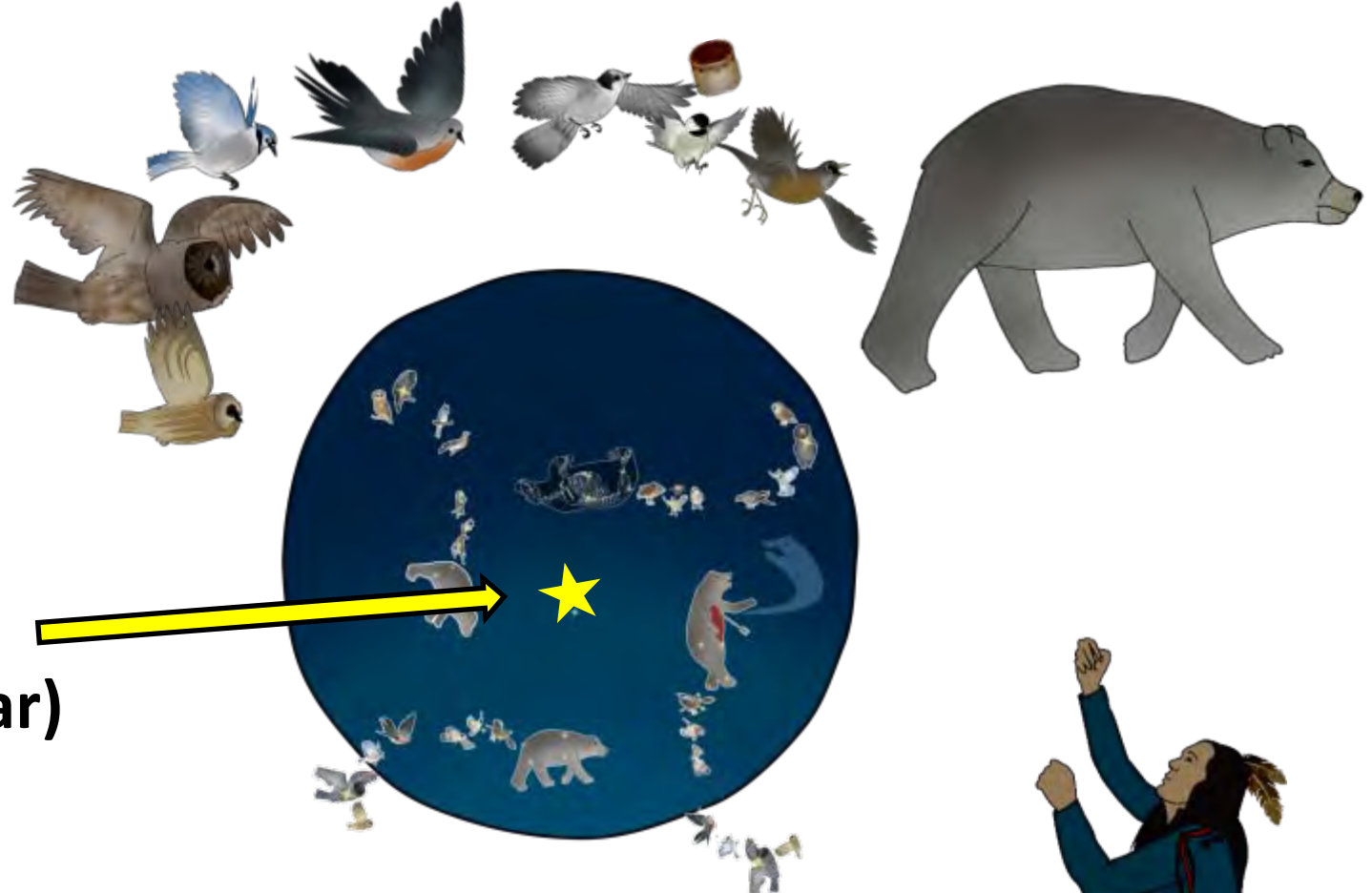
21 March

≈ Spring Equinox

Mi'kmaw Night Sky Story



One Full Year in Mi'kma'ki



**Tatapn
(North Star)**

**Muin and The Seven Bird Hunters:
Mi'kmaw Night Sky Story
... interconnectiveness of
space-time-life-knowledge-spirit**



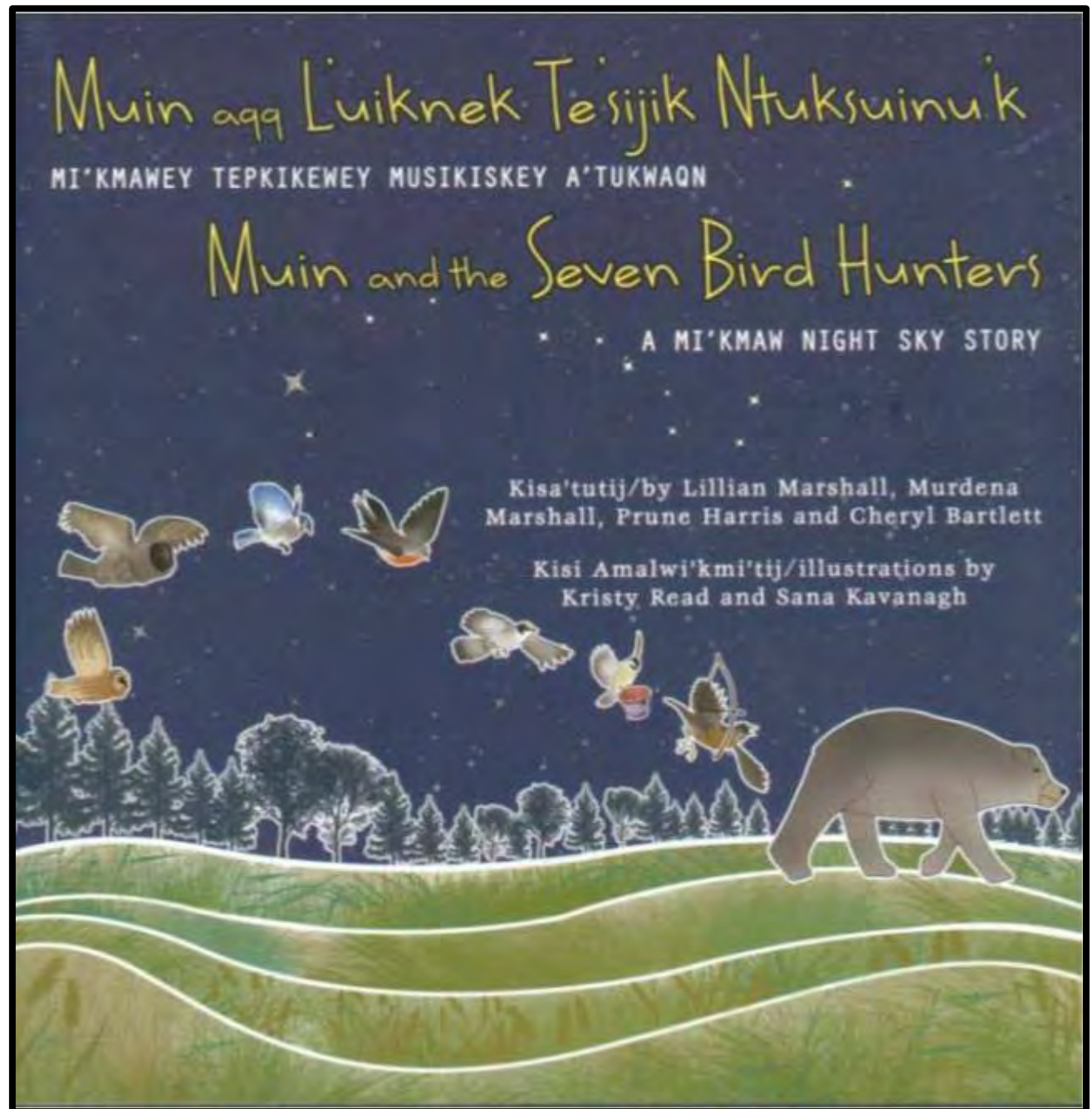
DVD



book

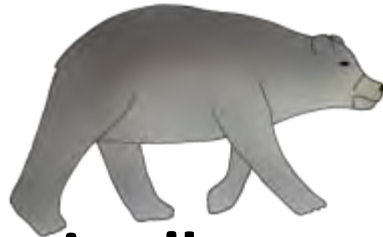


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· P · R · E · S · S ·



The Stars in this Story

Muin



Ntuksuinu'k

Jipjawej



Jiji'kes



• Wow

Mikjaqoqwej



Ples



Tities



Ku ku kwes



Kupkwe'j



Mi'kmaq

Alioth

Mizar

• *Alcor*

Alkaid

Seginus

Izar

Arcturus

Mufrid

Arabic

Bear

The Hunters

Robin

Chickadee

• Pot

Grey Jay

Passenger Pigeon

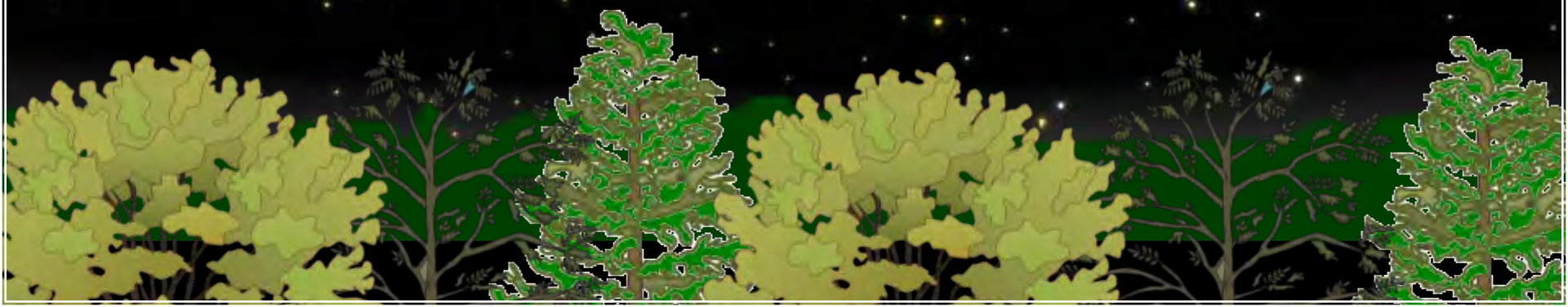
Blue Jay

Barred Owl

Saw-whet Owl

English

The Stars in this Story



The Stars in this Story



The Stars in this Story



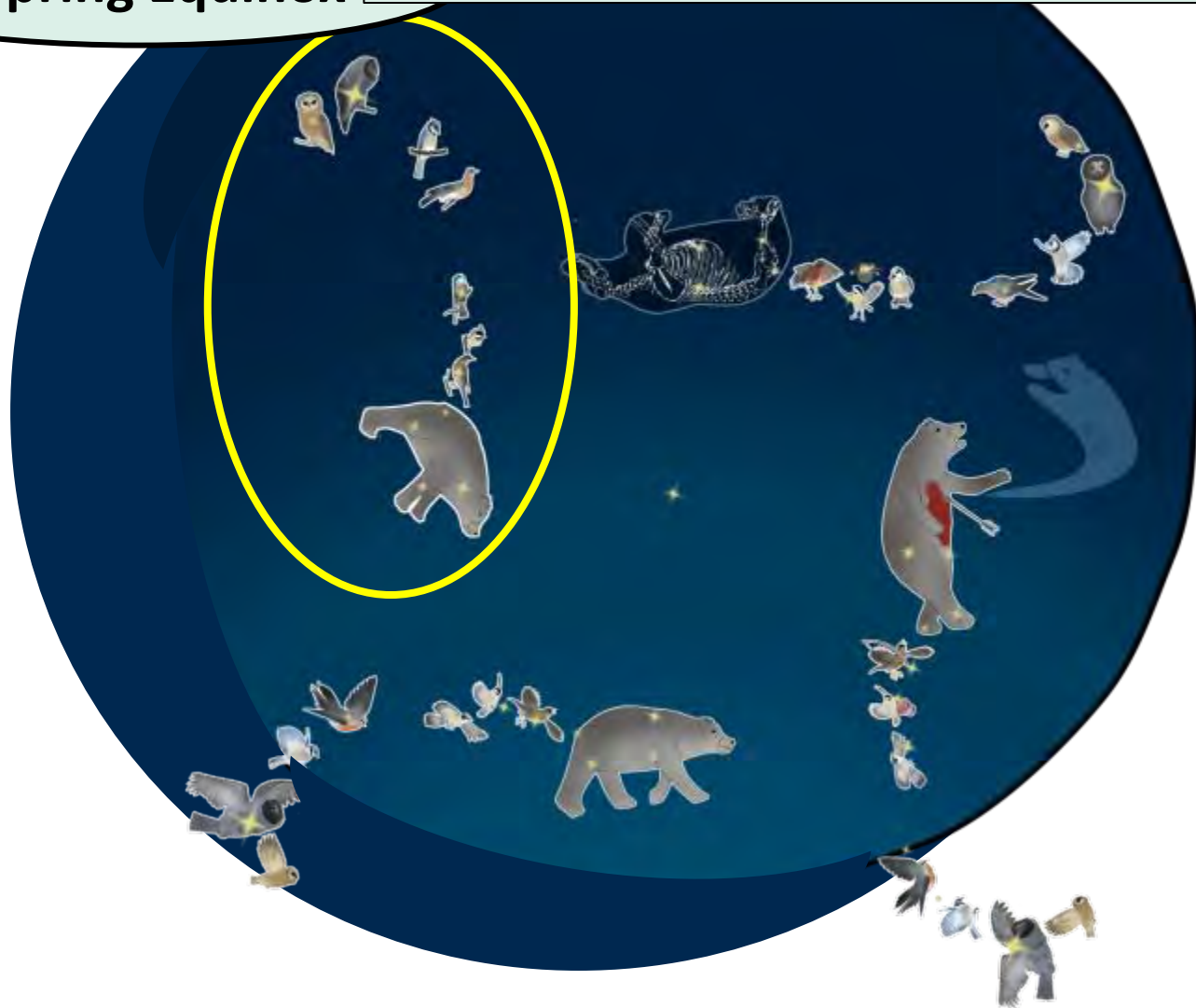


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The Mi'kmaw Year Begins

≈ Spring Equinox





Muin and The Seven Bird Hunters



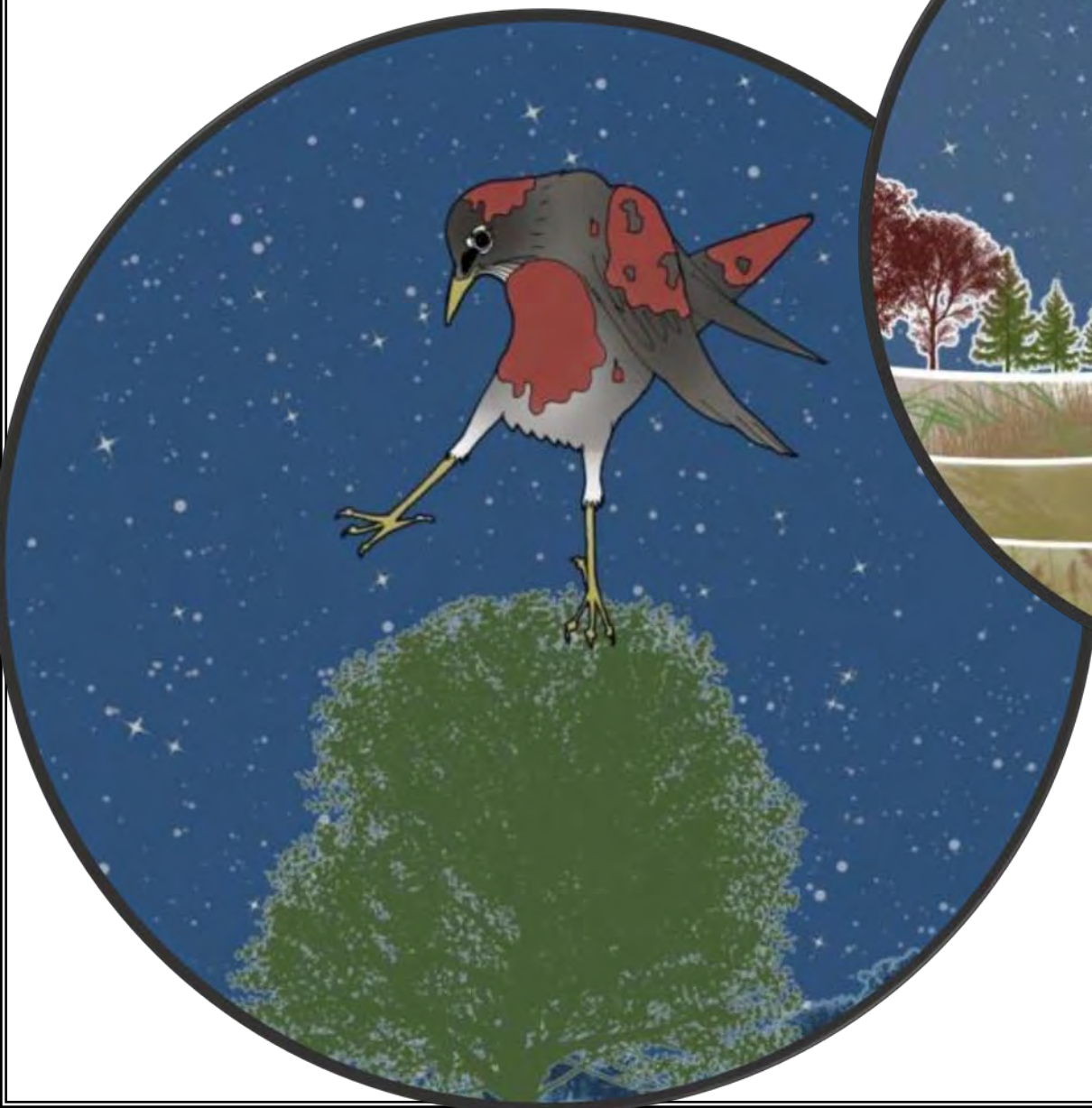






















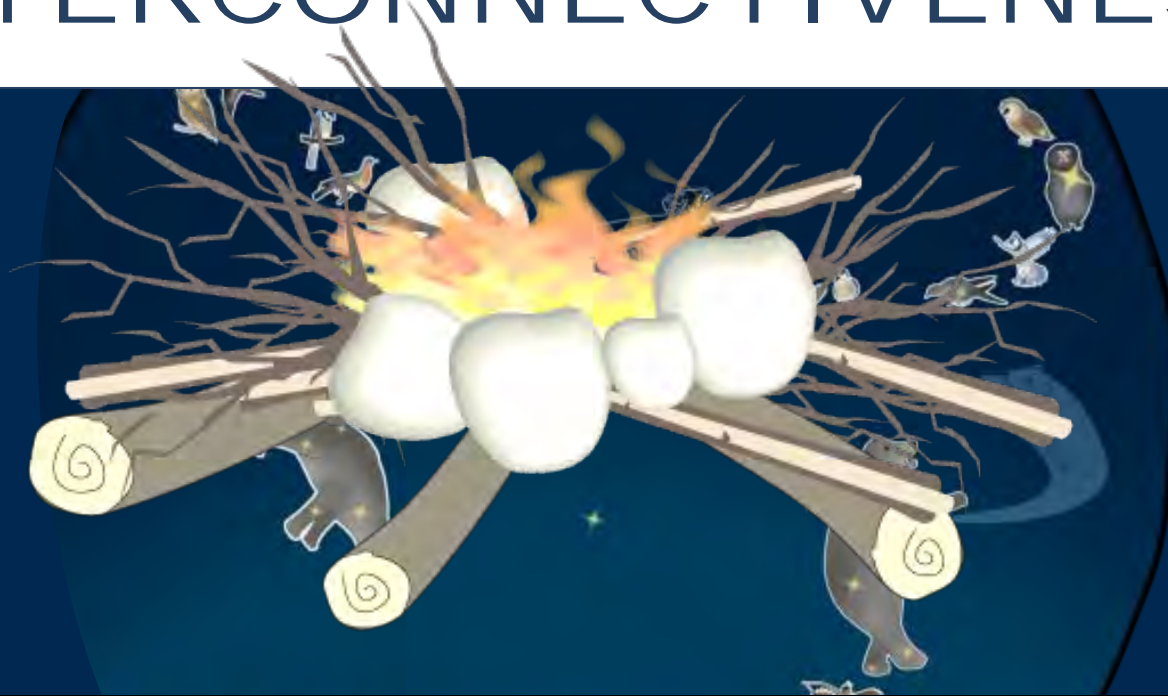


Tatapn

(Polaris or North Star)



THERE IS NO END INTERCONNECTIVENESS



*The story is always happening.
It is told in the present tense.*





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One Full Year in Mi'kma'ki



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One Full Year in Mi'kma'ki



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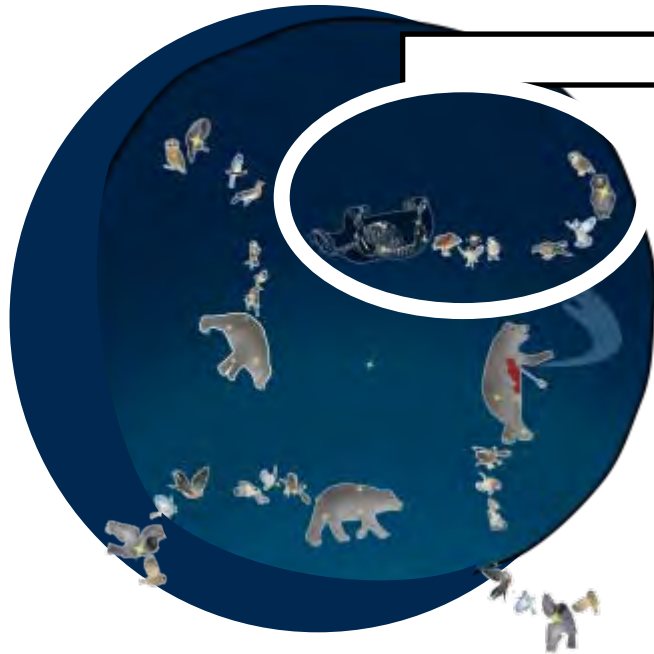
One Full Year in Mi'kma'ki



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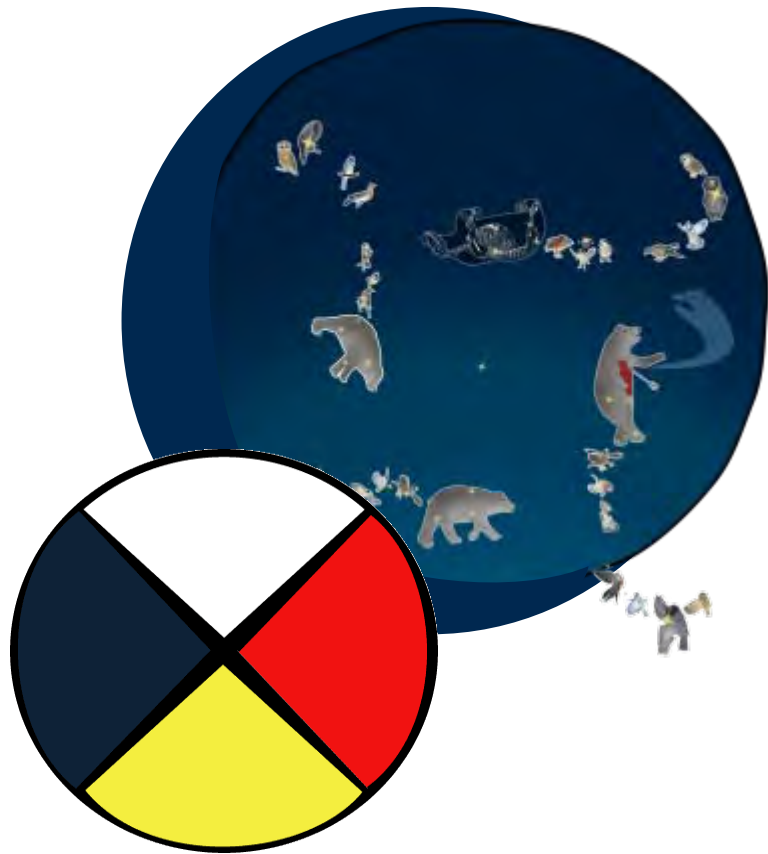
One Full Year in Mi'kma'ki



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One Full Year in Mi'kma'ki

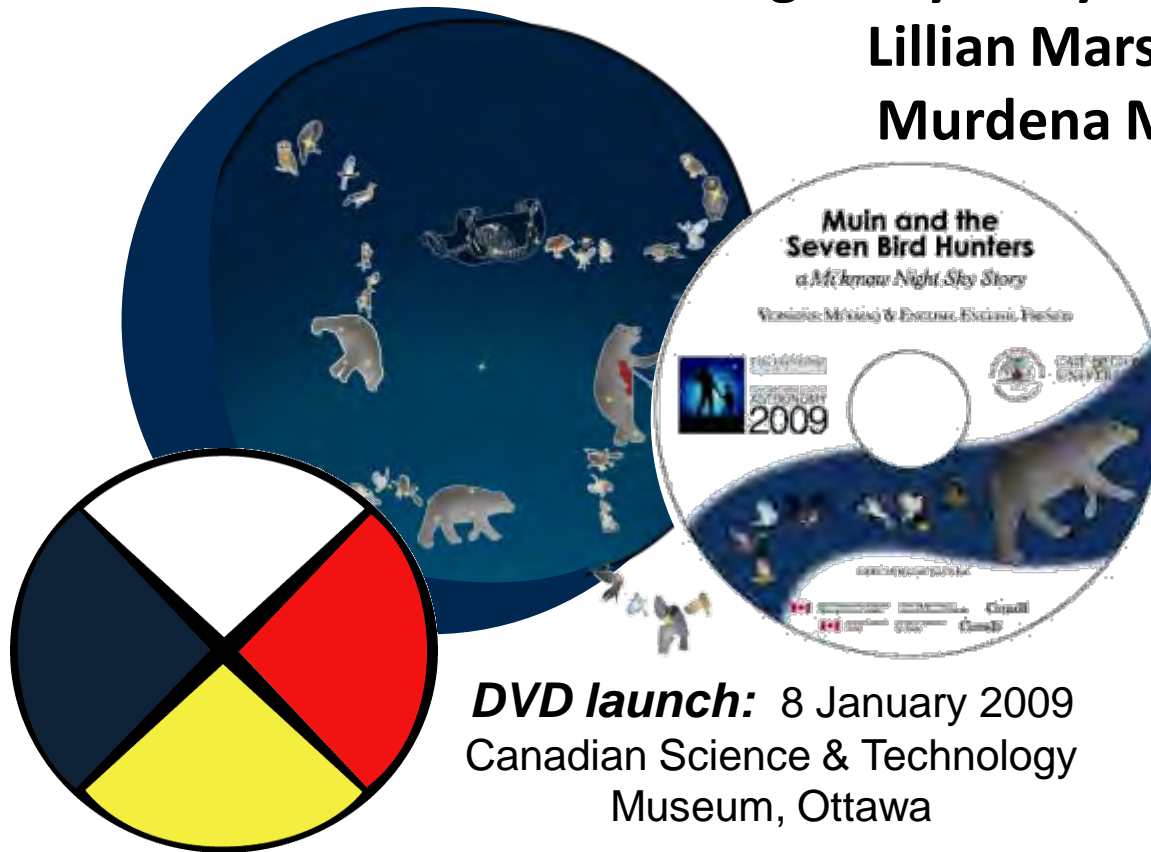


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**Night Sky Storywork with Mi'kmaw Elders
Lillian Marshall (Potlotek) and
Murdena Marshall (Eskasoni)**



book launch: 20 January 2011
Potlotek First Nation School



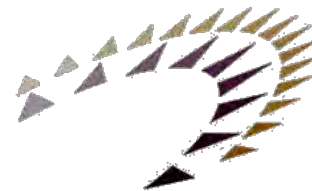
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Integrative Science Research Commons



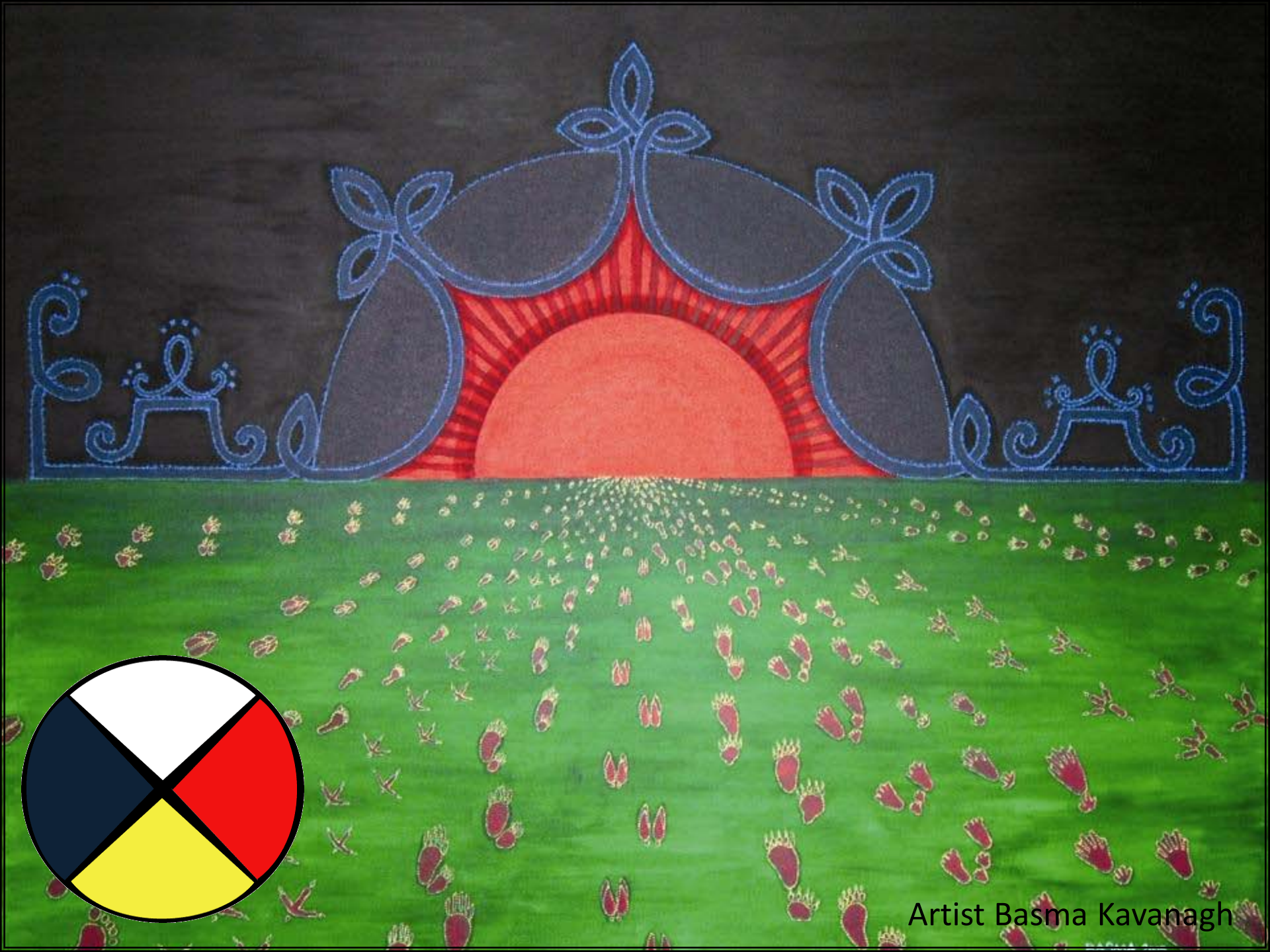
Canada Foundation
for Innovation

Fondation canadienne
pour l'innovation

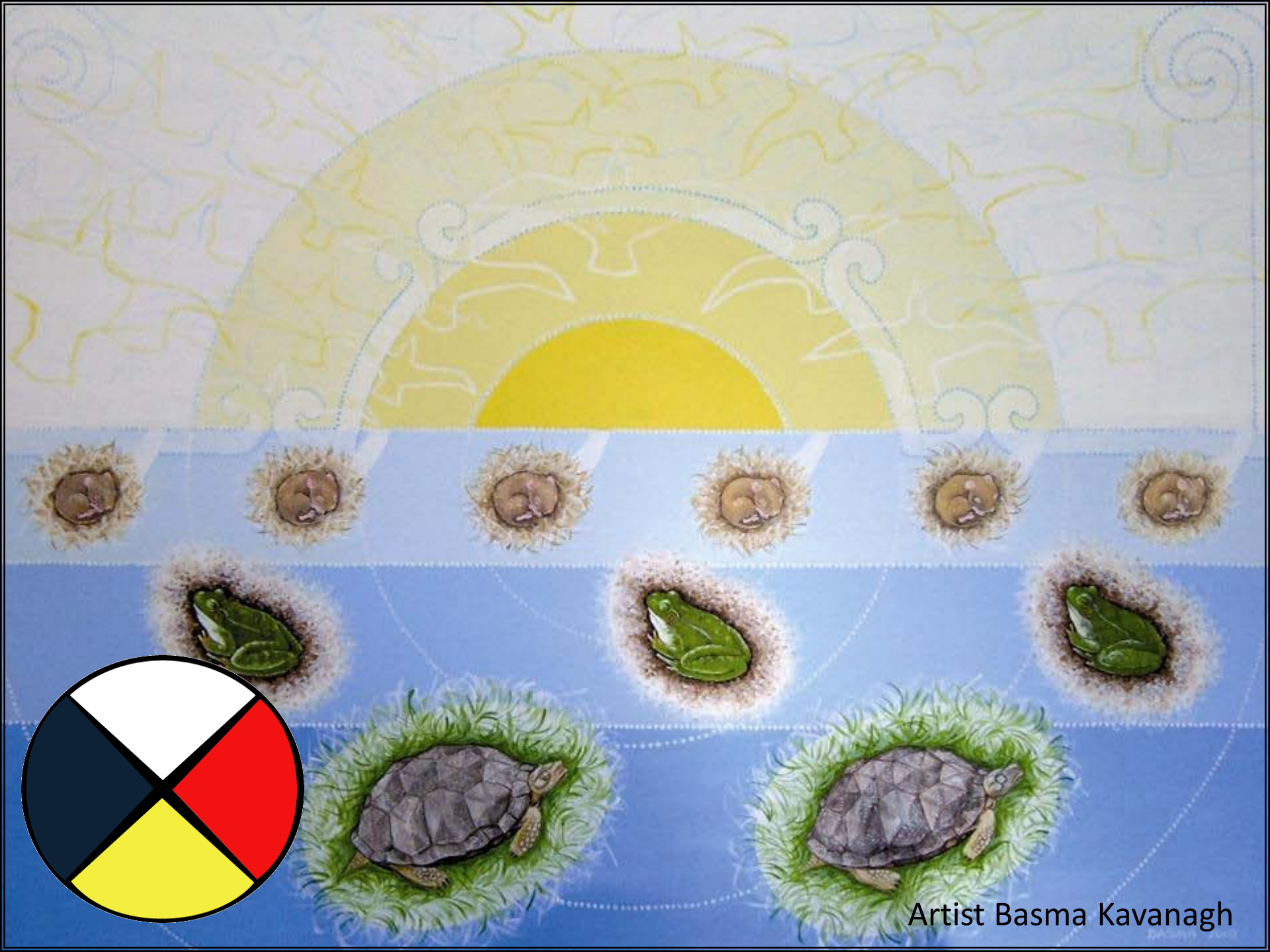
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UNIVERSITY



Artist Basma Kavanagh



Artist Basma Kavanagh



Artist Basma Kavanagh



Artist Basma Kavanagh

BASMA 2005



Love is the main ingredient of wellness.

Elder Murdena Marshall

INTERCONNECTIVENESS



**The voice of wellness
is in the land.**

Elder Albert Marshall



Murdena Marshall MEd, Hon DLitt
Elder and Spiritual Leader, Mi'kmaq Nation



INTERCONNECTIVENESS



... in the Mi'kmaw
language
there's something
called the
healing tense



Membertou
Trade &
Convention
Centre

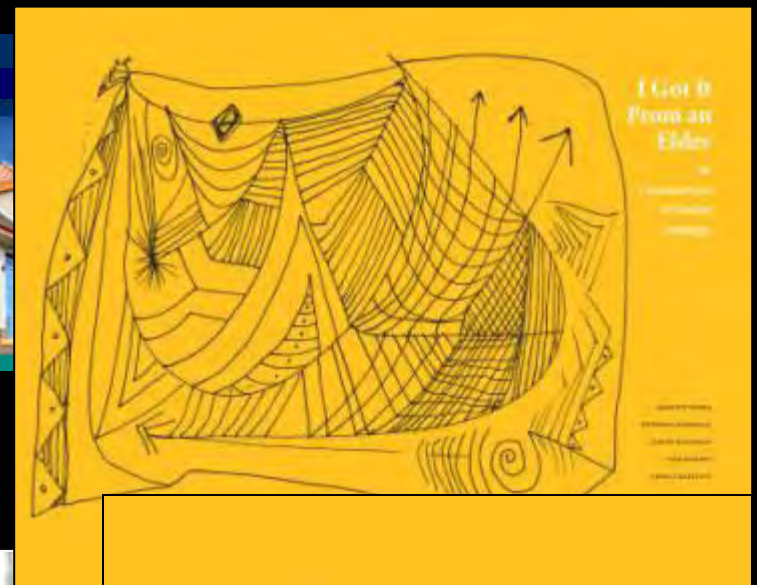


book launch: 28 February 2008
Membertou Trade & Convention Centre



GASPEREAU PRESS

PRINTERS & PUBLISHERS ☪ KENTVILLE, NOVA SCOTIA

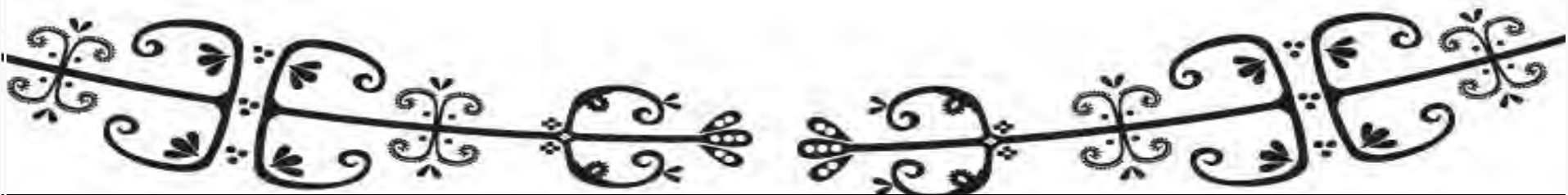


I Got It
From an
Elder

I Got It
From an
Elder



Conversations
in Healing
Language



I Got It
From an
Elder

✧
Conversations
in Healing
Language

“Murdena’s been trying to talk about healing language for a long time. You’d think a fluent Mi’kmaq with graduate training in linguistics from Harvard shouldn’t have much trouble finding an audience.”



I Got It
From an
Elder



Conversations
in Healing
Language

“She remembers the naysayers that would ‘jump down my throat, especially the linguists.’ Like the time she said to her Linguist friend, ‘This is the tense that helps you heal, or the signal that you’re on the mend.’ ”



I Got It
From an
Elder



Conversations
in Healing
Language

“And the Linguist said oh
Murdena that’s not *healing*
that’s the *long past*.”

“... *talking about
healing language
mad as hell ...*”

the **HEALING TENSE** ...

“And so I used the worst word with that Linguist that I could possibly use. And the worst verb in the non-native world, when you talk about Indians, is being drunk. This is how they see us all the time, being drunk. So I took that being drunk and called it *ketkiya*, which means *I am drunk*.

And I used this verb also because I deal a lot with recovering alcoholics and recovering addicts. And you can use this same verb for sniffing, any mind-altering substance that made you do crazy things and say crazy things.”

HEALING TENSE



example:
“to be drunk”

Mi'kmaw verb conjugation

- ketkiya (present)
- ketkiyayop (simple past)
- ketkiyayas nek (healing)



HEALING TENSE

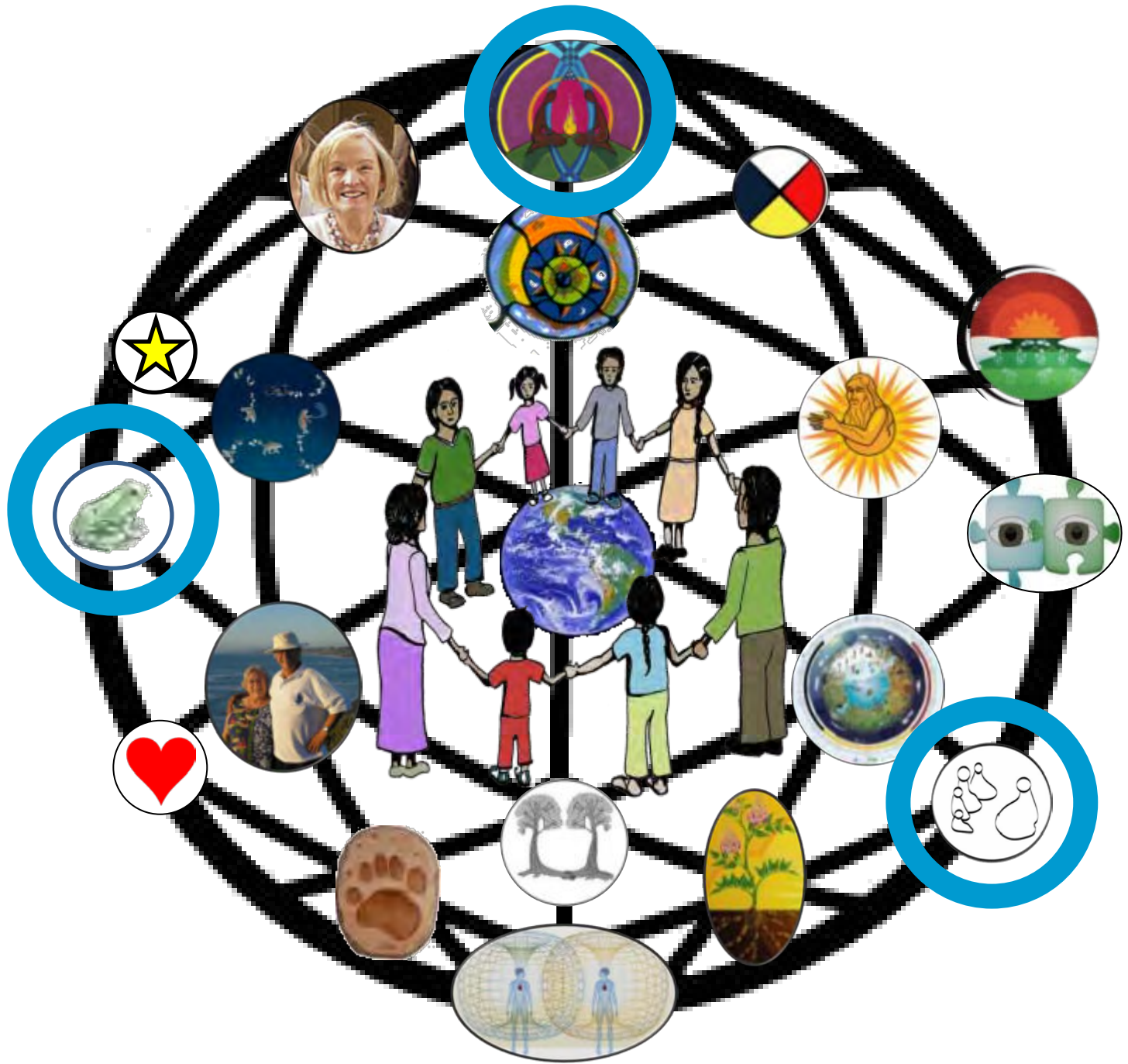
INTERCONNECTIVENESS



WE HEAL TOGETHER

... when he goes into this healing tense, then my attitude has to change ... everybody in the household ... everybody ... has to abide with him.

(Murdena Marshall)





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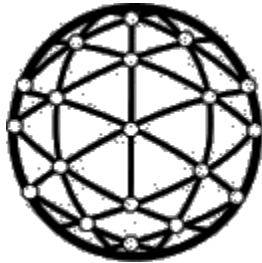


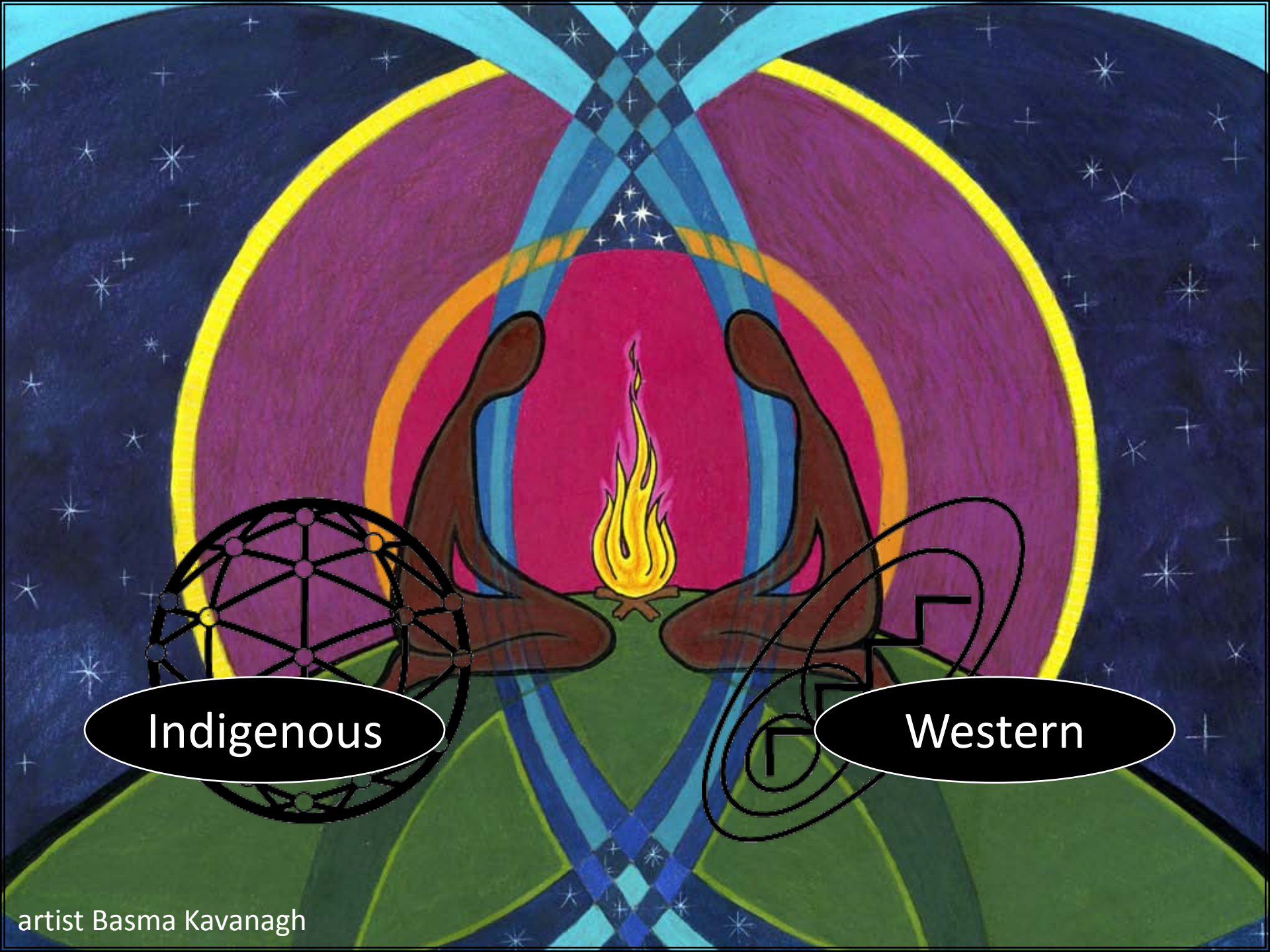


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Indigenous

Western

TWO-EYED SEEING

learning to see with the strengths of each & together



OUR KEY CONCEPTS and ACTIONS

in words

- respect
- relationship
- reverence
- reciprocity
- ritual (ceremony)
- repetition
- responsibility

- hypothesis
(making & testing)
- data collection
- data analysis
- model & theory
construction

TWO-EYED SEEING

learning to see with the strengths of each & together



OUR KEY CONCEPTS and ACTIONS

in visuals



photo credit: NRC



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**a challenge to
Western
(mainstream)
science?**

HYPOTHESES: propose & test



photo credit: NRC

PARADIGM: shift?



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**a challenge to
Western
(mainstream)
science?**

HYPOTHESES: propose & test



PARADIGM: shift?



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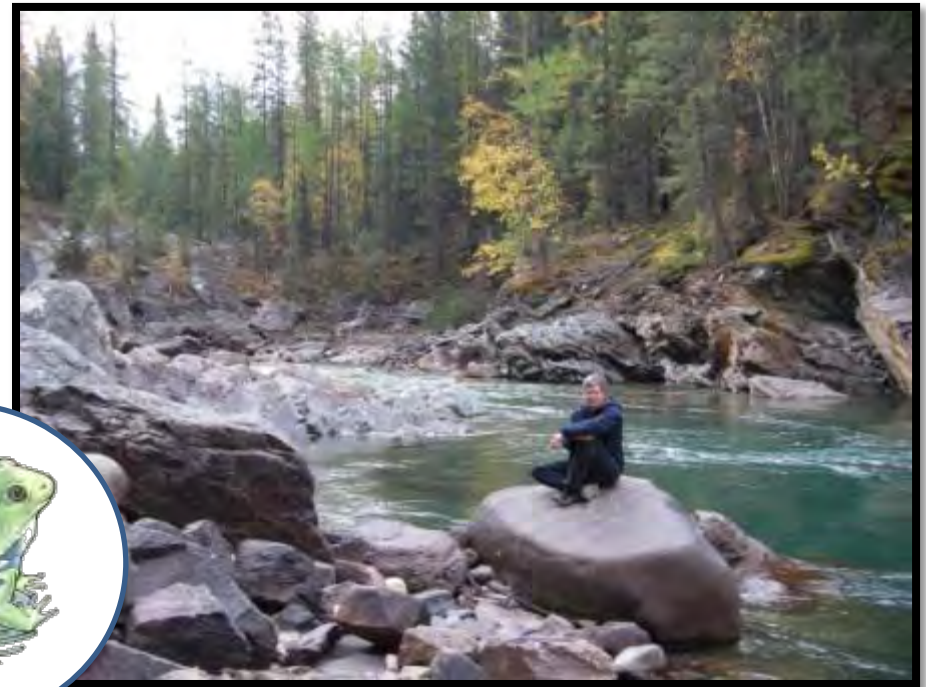
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a challenge to
Western
(mainstream)
~~science?~~
scientists!



HYPOTHESES: propose & test



PARADIGM: shift?



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HYPOTHESES

heart rhythm coherence

- Institute of HeartMath •

tend and befriend

- Shelley Taylor •

neurobiology of we

- Daniel J. Siegel •

living matrix

- James Oschman •

biosemiotics

- Jesper Hoffmeyer •



example reading areas





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INTERCONNECTIVENESS



heart rhythm coherence

- Institute of HeartMath •

tend and befriend

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neurobiology of we

- Daniel J. Siegel •

living matrix

- James Oschman •

biosemiotics

- Jesper Hoffmeyer •

*Every act of conscious learning
requires the willingness to suffer
an injury to one's self-esteem.*

*That is why young children,
before they are aware of their
own self-importance, learn so
easily; and why older persons,
especially if vain or important,
cannot learn at all.*

Thomas Szasz (born 1920) US psychiatrist
"Thought du Jour"
in Globe & Mail; 3 February 2011



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heart rhythm

- Institute

tend a

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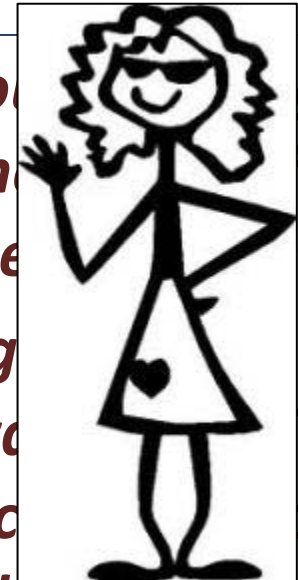
- Dan

living

- Jame

bios

- Jesper Hoffmeyer •



...cio
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inc
older persons,
or important,
n at all.

(1920) US psychiatrist

"Thought du Jour"

in Globe & Mail; 3 February 2011



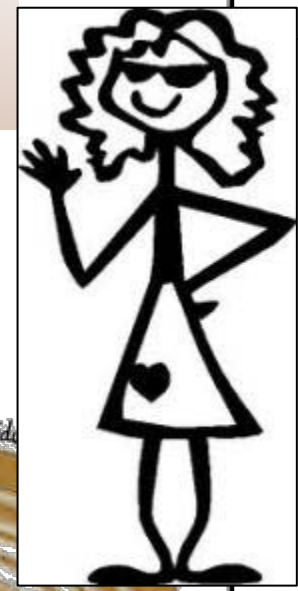
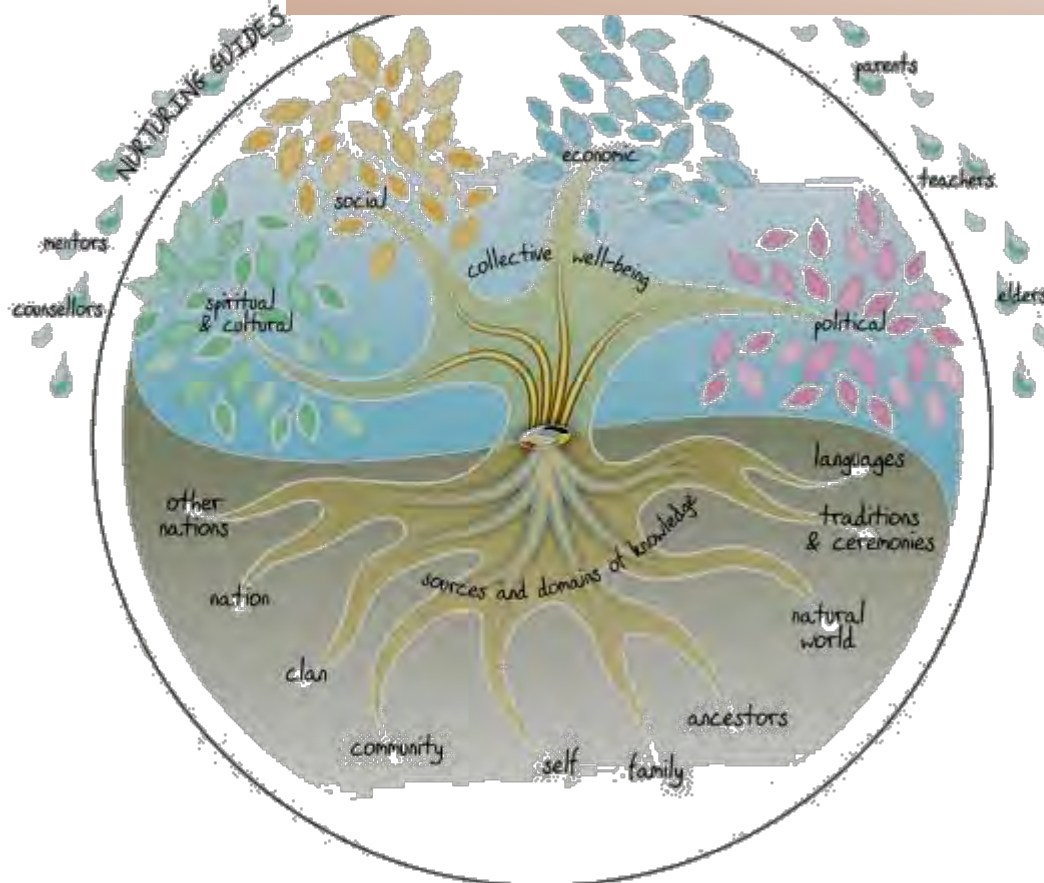
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First Nations Holistic

Lifelong Learning Model



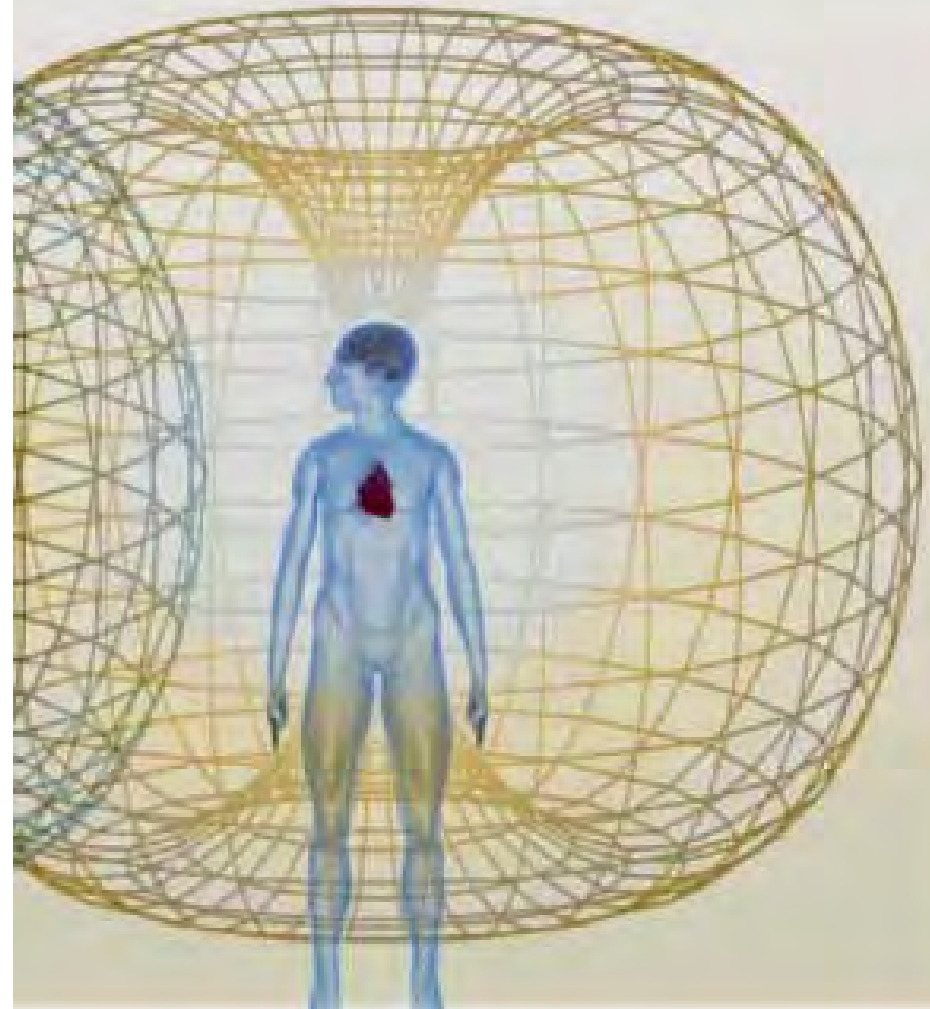




heart rhythm coherence

• Institute of HeartMath •

Hypothesis: the pattern and stability of beat-to-beat changes in heart rate encodes information over macroscopic time scales that can influence cognitive performance and emotional experience



EDGESCIENCE #6 • January-March 2011 / 5

by Dominique Surel

Speaking from the Heart



heart rhythm coherence

• Institute of HeartMath •

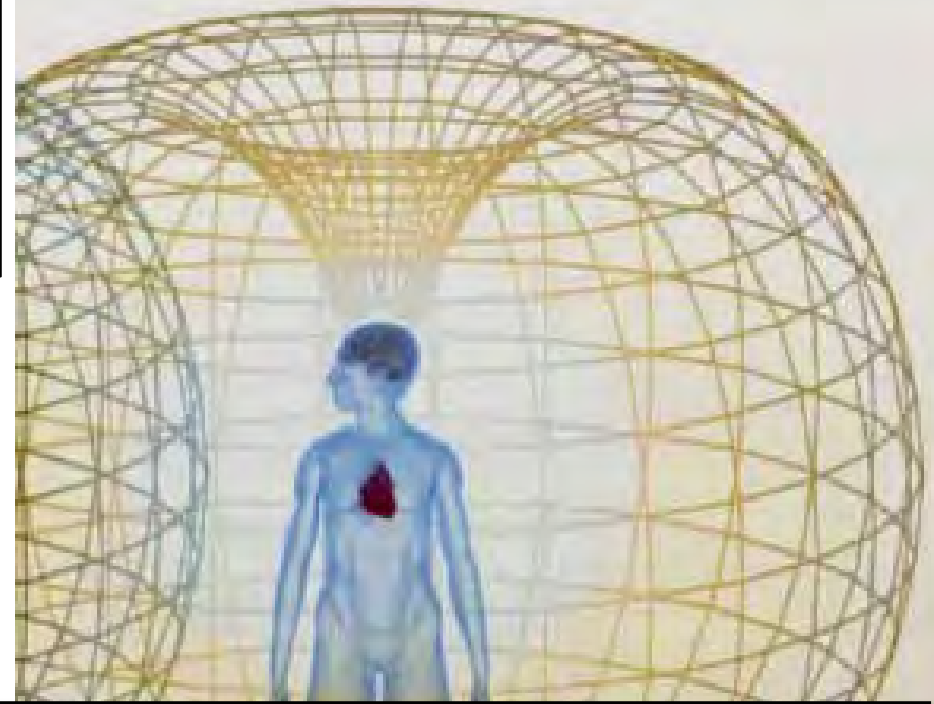
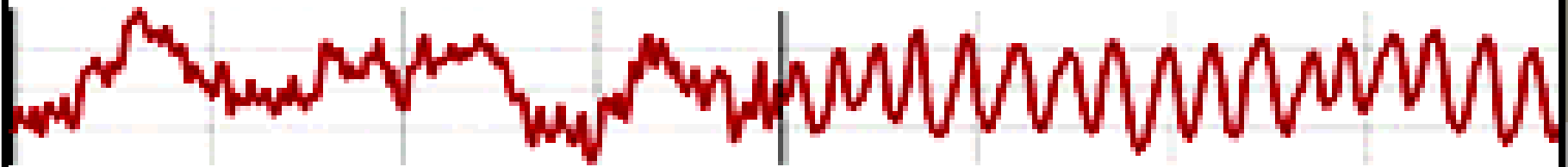


image below from:
<http://www.quantumintech.com/research.html>

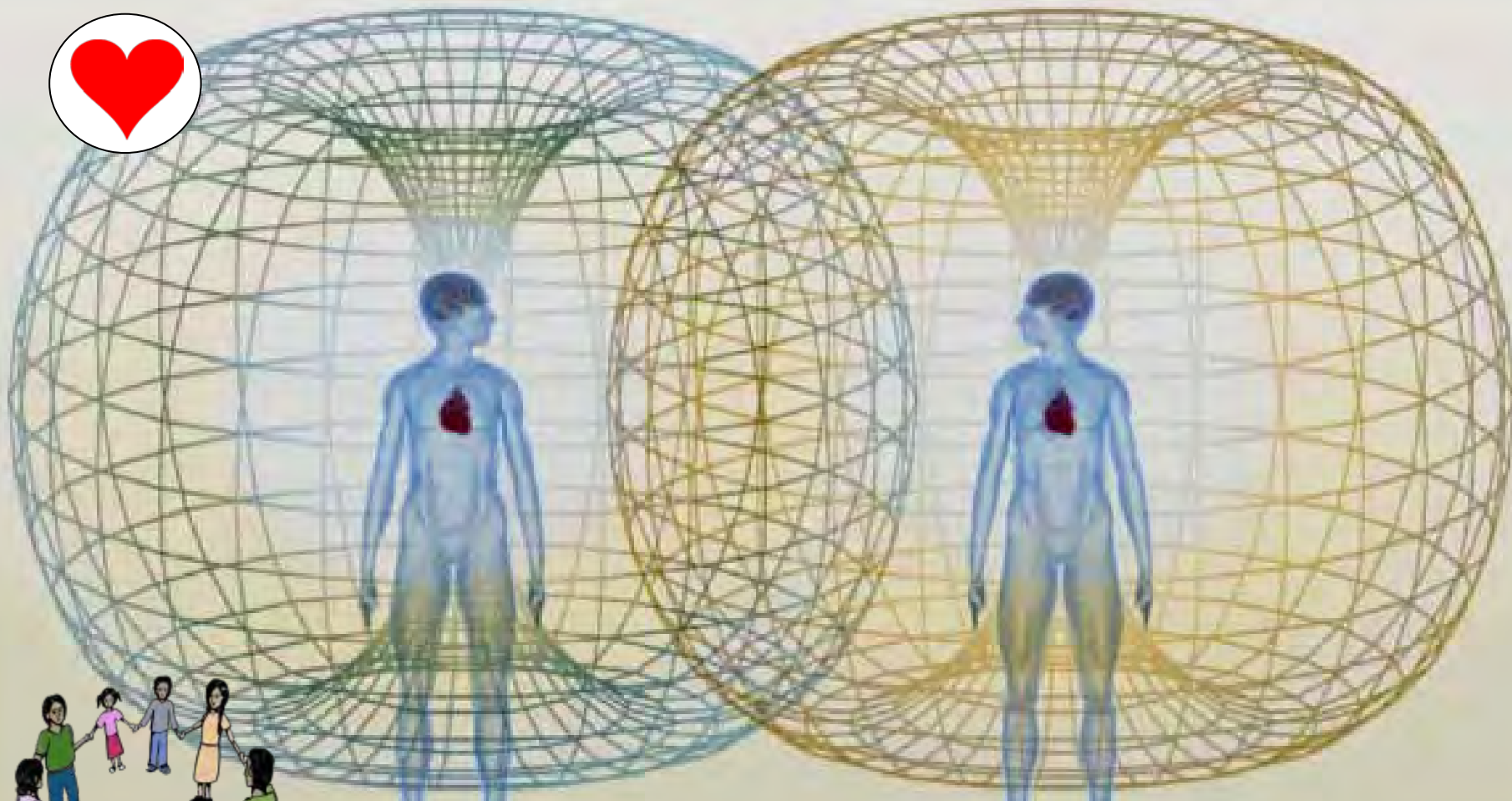
Heart Rate Variability (HRV) Trace



Incoherent
Anxiety or Anger

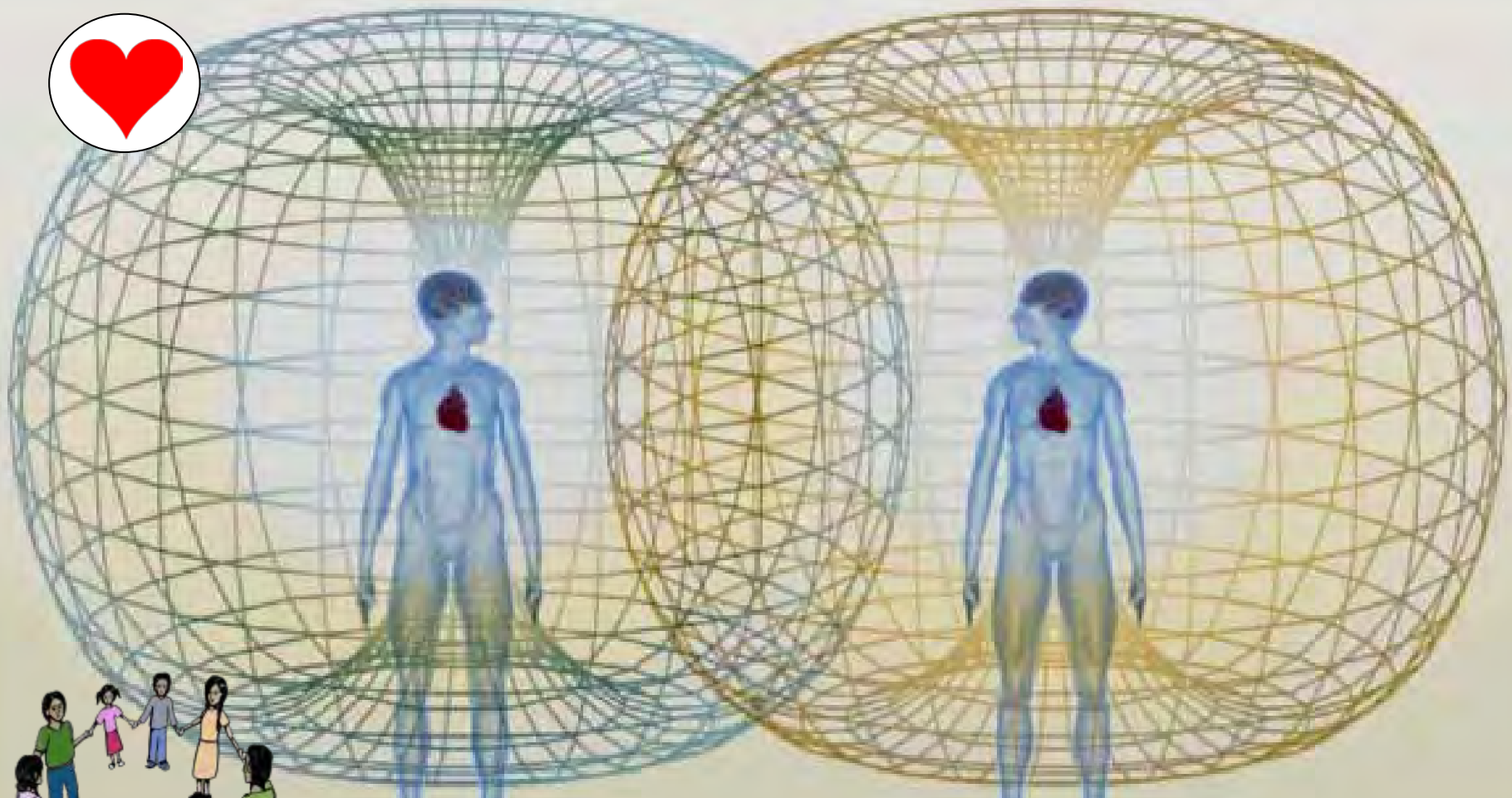
Coherent
Calm: the Zone

Speaking from the Heart



Because of the extent of the heart's influence on physiological, cognitive, and emotional systems, the heart provides a central point of reference from which the dynamic of such processes can be regulated.

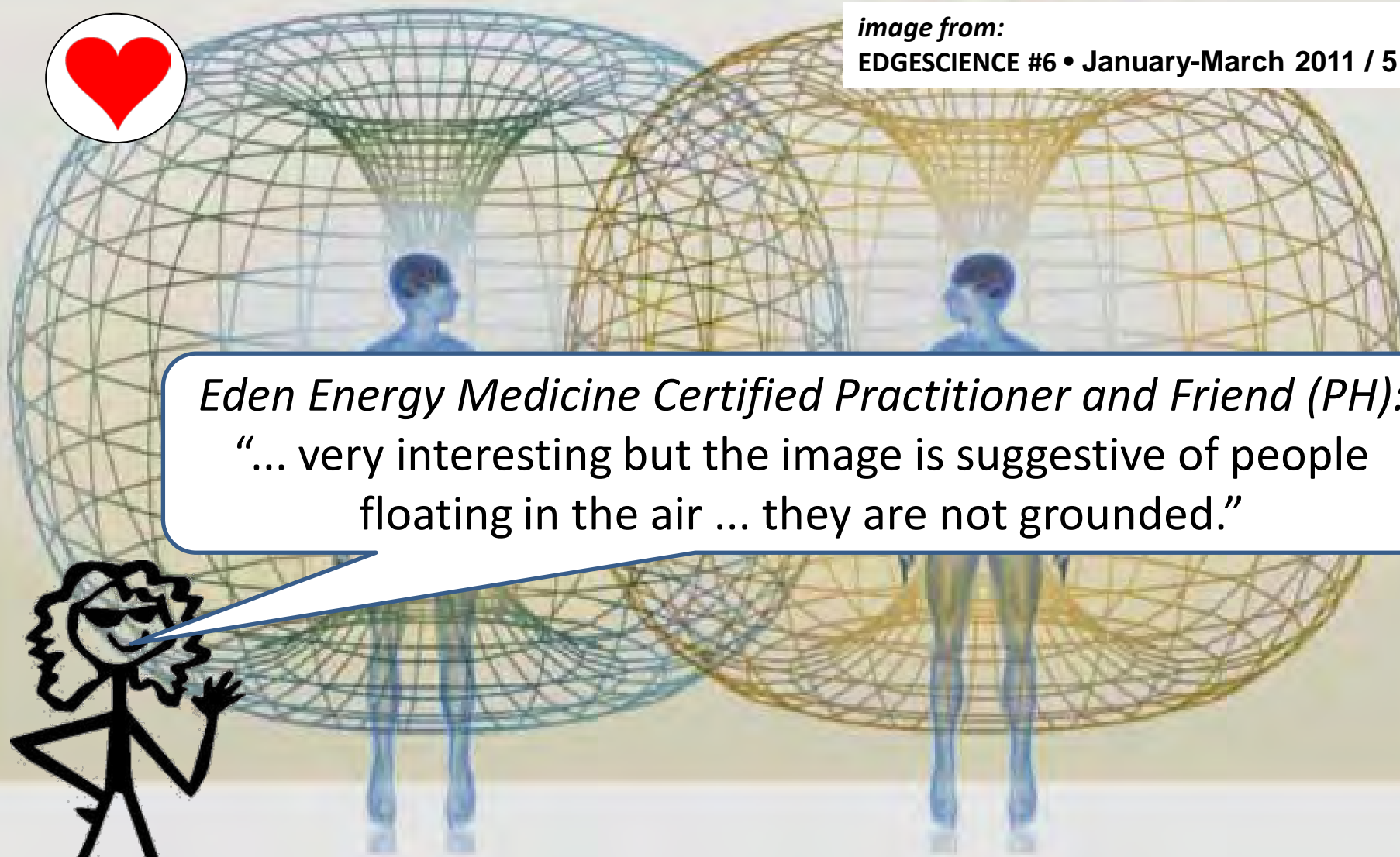
(Surel, D., 2011, EdgeScience 6: 5-8 [p. 6-7])



The heart's energetic field acts as a modulated carrier wave that encodes and communicates information throughout the entire body, from the systemic to the cellular levels, and even conveys information outside the body between individuals. (Surel, D., 2011, EdgeScience 6: 5-8 [p. 6-7])

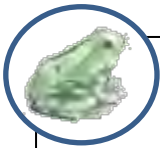


image from:
EDGESCIENCE #6 • January-March 2011 / 5



Eden Energy Medicine Certified Practitioner and Friend (PH):
“... very interesting but the image is suggestive of people floating in the air ... they are not grounded.”





living matrix

- James Oschman •

“the barefoot phenomenon”



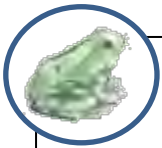
The living matrix is defined as the continuous molecular fabric of the organism, consisting of fascia, the other connective tissues, extracellular matrices, integrins, cytoskeletons, nuclear matrices and DNA.

These ground substances constitute a body-wide reservoir of charge that can maintain electrical homeostasis and “inflammatory preparedness” throughout the organism.

Perspective: Assume a spherical cow:
The role of free or mobile electrons in
bodywork, energetic and movement therapies

James L. Oschman, PhD*

Journal of Bodywork and Movement Therapies (2008) 12, 40–57



living matrix

- James Oschman •

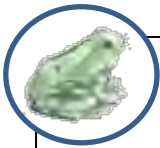
Negative charges (free electrons) neutralize free radicals that contribute to chronic health problems that can arise from “silent inflammation” (old injuries not fully resolved) or from observable signs of inflammation.



Hypotheses:

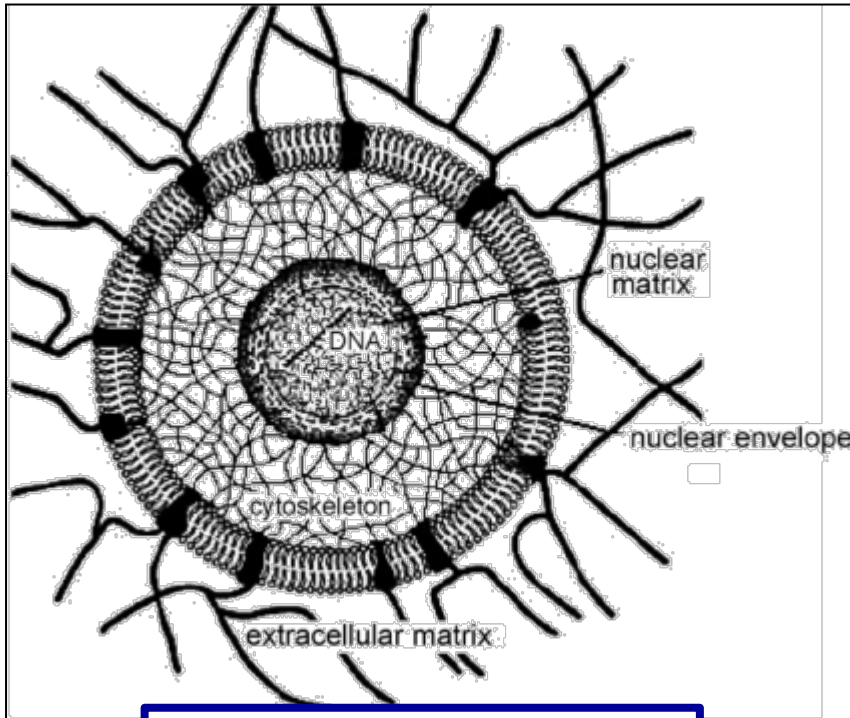
- 1) charge transfer from the body's ground substance reservoir prevents “collateral damage” to healthy tissues in the vicinity of inflammation (tissue injury);
- 2) “earthing” (barefoot contact with the earth) allows electrons to replenish charge in the body's ground substance reservoir

Journal of Bodywork and Movement Therapies (2008) 12, 40–57



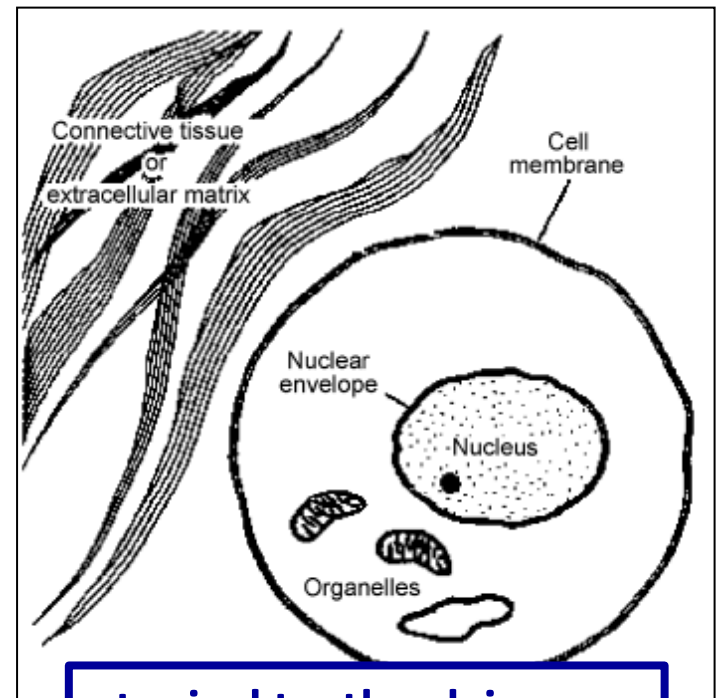
living matrix

• James Oschman •



proposed new image

Figure 7 More accurate and realistic image of the cell and its relationships with the surrounding matrix. The whole system, connective tissue plus cytoskeletons plus nuclear matrix has been termed *the living matrix*



typical textbook image

Figure 5 Image of the cell and its surroundings as described in most texts. It is assumed that the cell is a bag containing a solution of electrolytes and proteins, with a nucleus and some organelles such as mitochondria floating around within. Outside of the cell is a connective tissue matrix that is also immersed in a salt solution.

images and text from article:

Perspective: Assume a spherical cow:
The role of free or mobile electrons in bodywork, energetic and movement therapies

James L. Oschman, PhD*



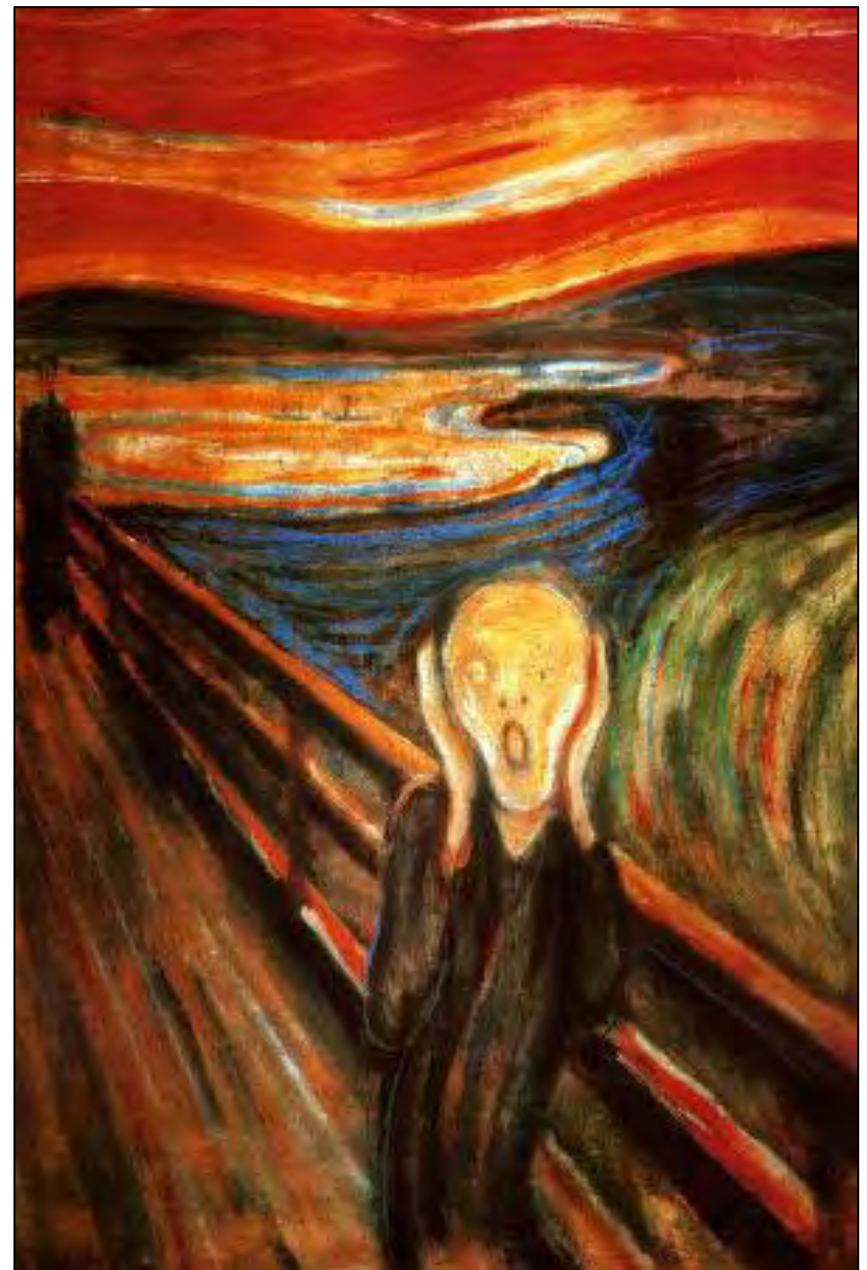
tend or befriend

• Shelley Taylor, UCLA •



STRESS

Hypothesis: females have a different social response to stress, than the fight / flight response observed among males



Artist Edvard Munch



tend or befriend

• Shelley Taylor, UCLA •



STRESS

Hypothesis: females have a different social response to stress ...



... builds on the brain's attachment / caregiving system, which counteracts the metabolic activity associated with the traditional fight-or-flight stress response (increased heart rate, blood pressure

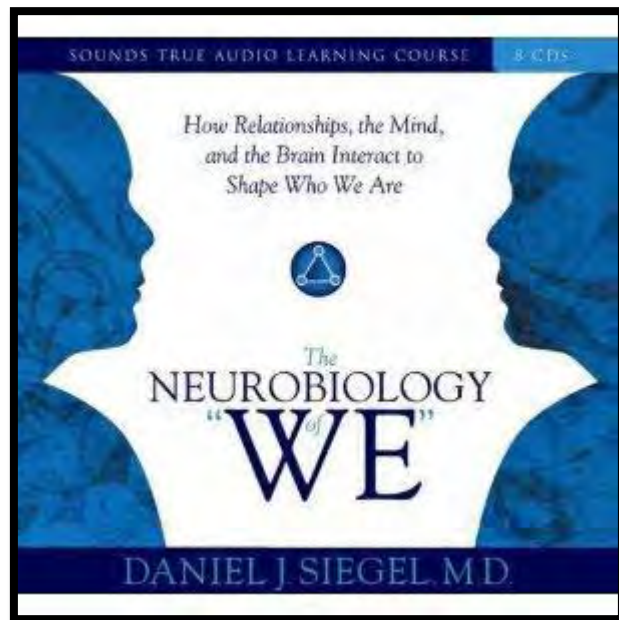


and cortisol levels) and leads to nurturing and affiliative behaviour.

neurobiology of we

• Daniel J. Siegel •

Hypothesis: the mind emerges out of the interaction between your brain and your relationships



... and thus we can realize the deeper consequences of our social interactions and "open to the very heart of well-being".

biosemiotics

- Jesper Hoffmeyer •

Paradigm shift: life-processes are both part of, and are organized in obedience to, semiotic dynamics (sign-interpretation-meaning) and this fact cannot be omitted from a true science of life

*... life is based on semiotic dynamics,
not just molecular interaction*

Artist: Rod Restoule
from: Into the Daylight;
C. Morrissette, 1998





International Day for the Elimination of Racial Discrimination

21 March

INTERCONNECTIVENESS

HYPOTHESES – PARADIGM SHIFTS

heart rhythm coherence

• Institute of HeartMath •

with heart intelligence

tend and befriend

• Shelley Taylor •

with the social group

neurobiology of we

• Daniel J. Siegel •

with diverse relations

living matrix

• James Oschman •

with the earth

biosemiotics

• Jesper Hoffmeyer •

with meaning



International Day for the Elimination of Racial Discrimination

21 March

INTERCONNECTIVENESS



*the dynamic of
mindfully living within
an expanding sense of
holistic relationships
with everything
and everyone
... “all my relations”
... “all of Creation”*



International Day for the Elimination of Racial Discrimination

21 March

INTERCONNECTIVENESS



**Thank you
Wela'liog**

*... "all my relations"
... "all of Creation"*

our THANKS to many Elders & many others



**Mi'kmaw Elders & Educators
&
Students**

our THANKS to CBU's Integrative Science Team



Research Team & Artists

**Thank you
Wela'liog**

**The assistance of many
individuals is gratefully
acknowledged.**





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of Nova Scotia



Membertou
Elementary



IWK Health Centre
Foundation



**Thank you
Wela'liog**



Eskasoni First Nation Detachment
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du Canada

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Mi'kmaq Espi Kina'matno'kuom

for additional information see:

www.integrativescience.ca



Artist Basma Kavanagh contact: <http://www.basmakavanagh.ca>
<http://www.basmakavanagh.blogspot.com>

Graphic Designer Kristy Read contact: <http://www.graphicintent.ca>