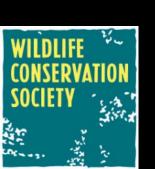


# How Social Media Data Can Be Harnessed To Understand The Effects Of National Parks On Mental Health



Christopher Golden PhD, MPH
Director of HEAL, Wildlife Conservation Society
Harvard School of Public Health
WPC 11-14-2014

http://wpc.wcs.org www.wcs-heal.org



**NATIONAL** 













HARVARD School of Public Health

Health summit ECU Institute of Development EDITH COWAN

Cornell University Charles H. Dyson School of Applied Economics and Management



# **HEALTH & ECOSYSTEMS: ANALYSIS OF LINKAGES**

















THINKING OF THE WORLD

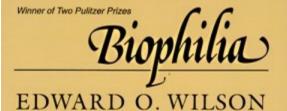






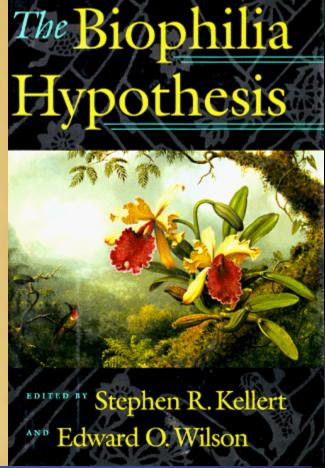


UNIVERSITY





The human bond with other species



# Biophilia

"...the innately emotional affiliation of human beings to other living organisms. Innate means hereditary and hence part of ultimate human nature."

--E.O. Wilson

"This book is an absolute must-read for parents." -The Boston Globe Last Child in the Woods Saving Our Children from Nature-Deficit Disorder **Richard Louv** 



## World Happiness Report 2013

10% of the world's population suffers from clinical depression or crippling anxiety disorders. They are the biggest single cause of disability and absenteeism, with huge costs in terms of misery and economic waste

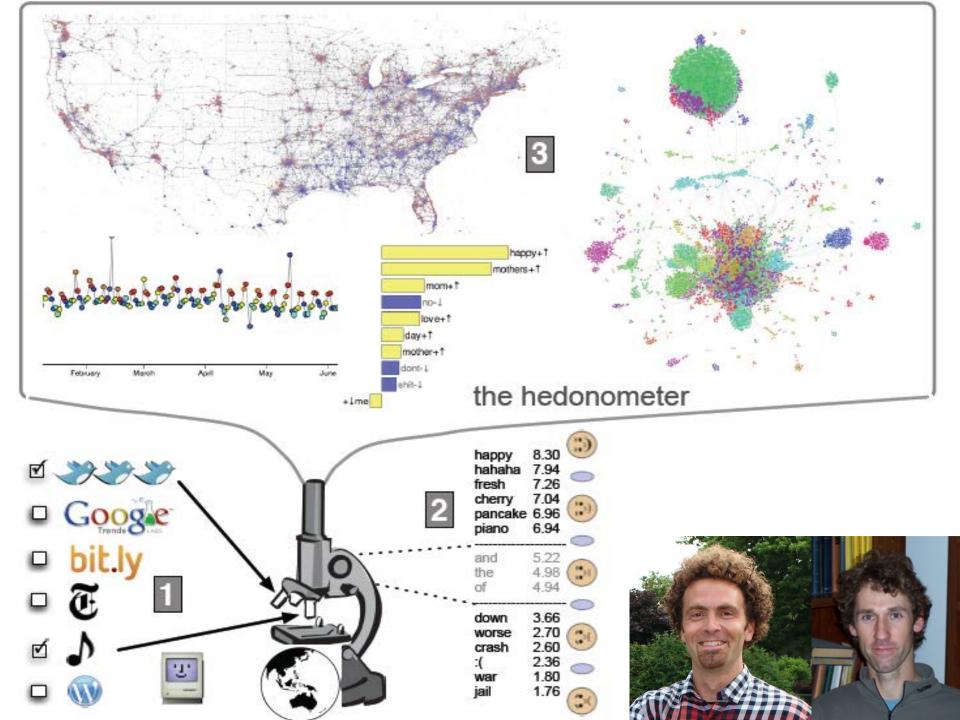
	Percent of the world's population	Total number of cases in the world
Depression (incl dysthymia)	6.8	404 million
Anxiety disorders	4.0	272 million
Childhood behavioral disorders (ADHD, conduct disorder)	1.2	85 million

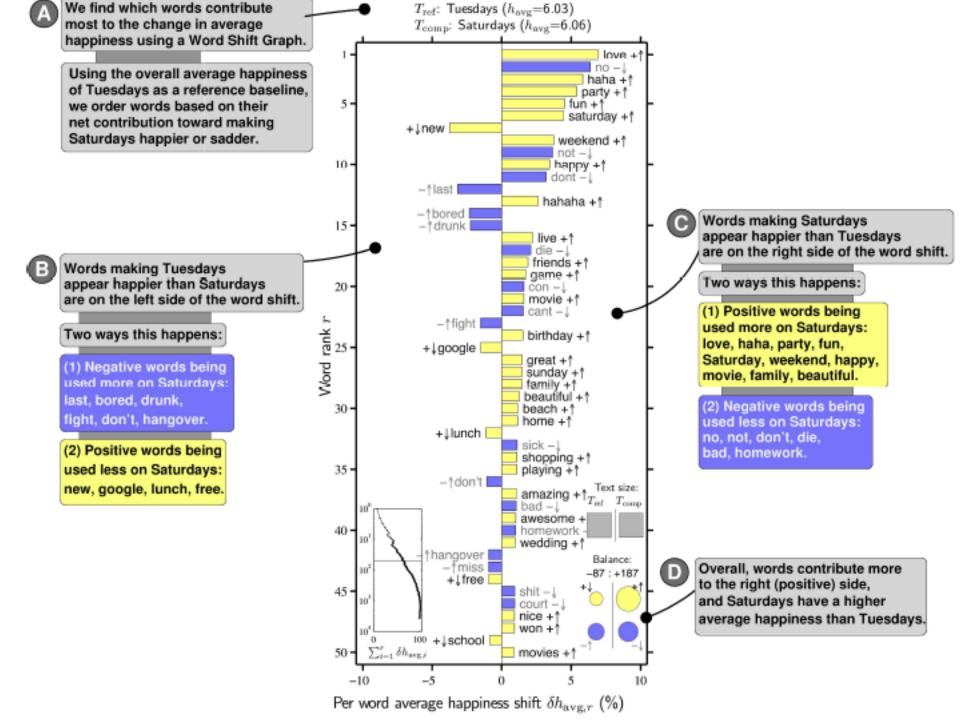
# What predicts happiness?

# The environment is missing from the conversation on environmental factors

Level of determinant	Risk factors	Protective factors
	Low self-esteem ←→	Self-esteem, confidence
Individual attributes	Emotional immaturity	Ability to manage stress and adversity
	Difficulties in communicating -	Communication skills
	Medical illness, substance abuse ↔	Physical health, fitness
Social circumstances	Loneliness, bereavement	Social support of family and friends
	Neglect, family conflict ←→	Good parenting/family interaction
	Exposure to violence/abuse	Physical security and safety
	Low income and poverty	Economic security
	Difficulties or failure at school 🔸	Scholastic achievement
	Work stress, unemployment ←→	Satisfaction and success at work
Environmental factors	Poor access to basic services -	Equality of access to basic services
	Injustice and discrimination -	Social justice, tolerance, integration
	Exposure to war or disaster	Physical security and safety







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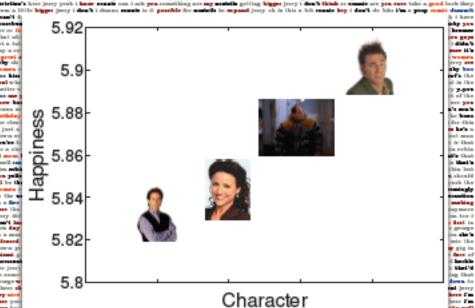
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KRAMER: what did you go up there to heckle her for JERRY: because she came down to the club and heckled me give her a taste of her own medicine KRAMER: oh yeah you gave her a taste of medicine alright JERRY: well i didn't want her to have an accident GEORGE: what accident KRAMER: well after he heckled toby she got so upset she ran out of the building and a street sweeper ran over her foot and severed her pinky toe GEORGE: that's unbelievable KRAMER: yeah then after the ambulance left i found the toe so i put it in a cracker jack box filled it with ice and took off for the hospital GEORGE: what you ran KRAMER: no i jumped on the bus i told the driver i got a toe here buddy step on it GEORGE: holy cow KRAMER: yeah yeah then all of a sudden this guy pulls out a gun well i knew any delay is gonna cost her her pinky toe so i got out of the seat and i started walking towards him he says where do you think you're going cracker jack i said well i got a little prize for ya buddy knocked him out cold GEORGE: how could you do that KRAMER: then everybody is screamin because the driver he's passed out from all the commotion the bus is out of control so i grab him by the collar i take him out of the seat i get behind the wheel and now i'm drivin the bus GEORGE: you're batman KRAMER: yeah yeah i am batman then the mugger he comes to and he starts chokin me so i'm fightin him off with one hand and i kept drivin the bus with the other y'know then i managed to open up the door and i kicked him out the door you know with my foot you know at the next stop JERRY: you kept makin all the stops KRAMER: well people kept ringin the bell GEORGE: well wha-what about the toe what happened to the toe KRAMER: well i am happy to say that the little guy is back in place at the end of the line GEORGE: you did all this for a pinky toe KRAMER: well it's a valuable appendage

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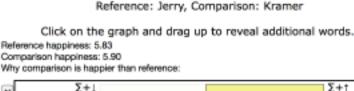
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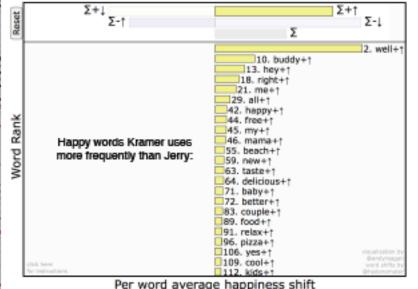
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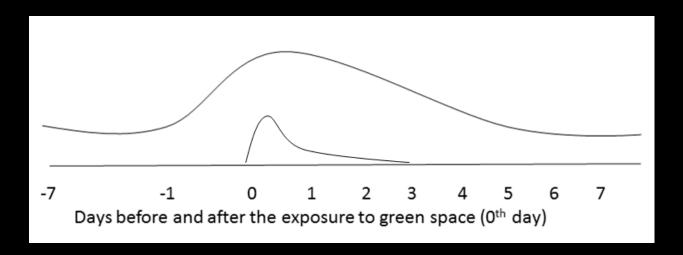
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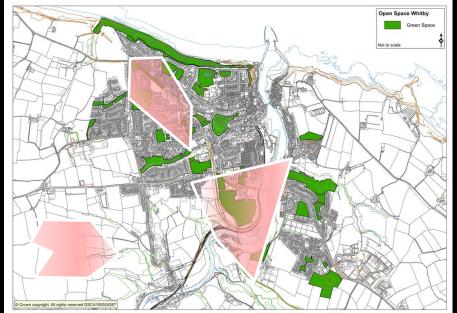


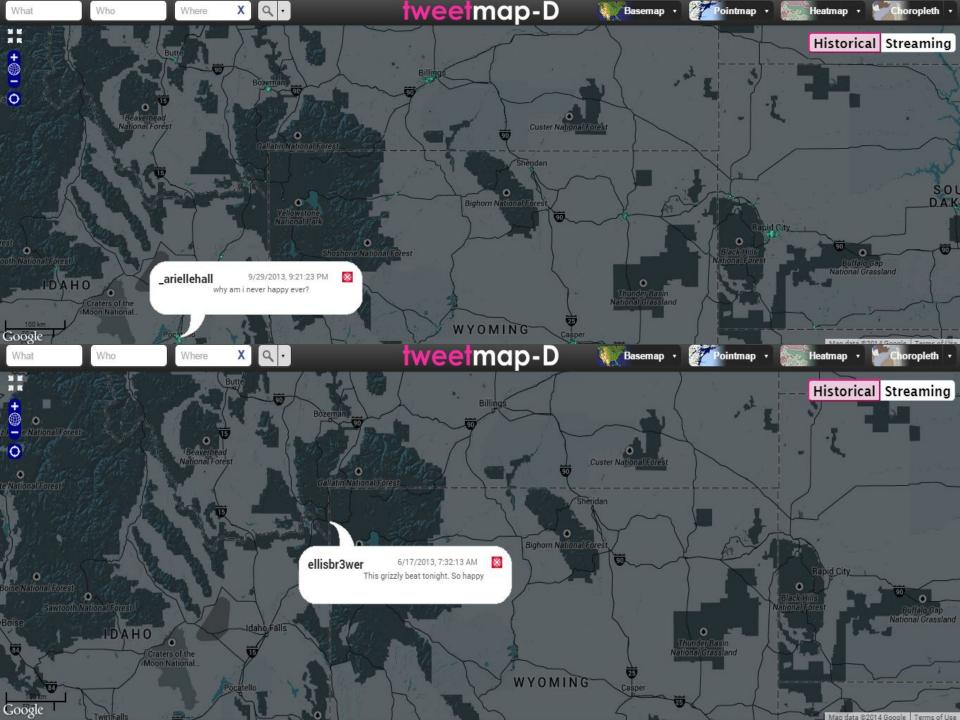
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### Retrospective cohort study design



# Cross-sectional "dose-response" study design





# Importance for Policy



# Prescription Kids who play outdoors are healthier, happier and do better in school

Spend at least one hour outside daily. Run, jump, skip, hop, holler, roar-explore the great outdoors!

Refills: unlimited By order of Dr.

### I SUPPORT NATIONAL PARKS





Nature Play Prescription

Dr		
Name:	Date:	
Your Healthca	re Provider encourages you to:	
<ul> <li>Limit your "</li> <li>no more that</li> <li>Read stories</li> </ul>	and play in nature. Screen Time" to In 60 mins each day. s about nature. meone read them to you.)	

Signed:

Provider:

Parent/Child:

### **Thank You!**

- Sean Taylor, Carlos Diuk and Lufi Paris (Facebook)
- Chris Danforth, Peter Dodds and Taylor Ricketts (UVM)
- Sam Myers, Arthur Kleinman (Harvard)

