

Study 1

Exploratory Factor Analysis

Sample 1 - Prolific
N = 575

53 Connection to Nature Items*
(from existing measures & new items)

Removed 12 items (3 high collinearity, 5 high skew, 4 poor loading)

4 Factor Solution best fit (RMSEA 0.050, 90%CI 0.046-0.054)

Sample 2 - SONA
N = 485

38 Connection to Nature Items
(reduced items from Sample 1)

4 Factor Solution best fit (RMSEA 0.051, 90%CI 0.046-0.056)

Sample 2 - Prolific
N = 578

38 Connection to Nature Items
(replicating items from Sample 1 & 2)

4 Factor Solution best fit (RMSEA 0.53, 90%CI 0.048-0.057)

*Scan QR code for details of item selection & removal criteria

Study 2

Confirmatory Factor Analysis

Sample 1 - SONA
N = 341

30 Connection to Nature Items
(selected from best loading items in Study 1 EFA's)

Removed 2 items with high skew

4 Factor Solutions better fit than 1 Factor Solution

Model	RMSEA (90%CI) ^a	SRMR ^b	TLI ^c	CFI ^d
1 Factor	0.101 (0.09 – 0.19)	0.072	0.786	0.809
4 Factor	0.059 (0.05 – 0.07)	0.051	0.928	0.937

^a (Root mean square error) 0.01 = Excellent; 0.05 = Good; 0.08 = Mediocre
^b (Standardized root mean square residual) Closer to 0 indicates better fit
^c (Tucker Lewis Index) Closer to 1 indicates better fit
^d (Comparative fit index) Closer to 1 indicates better fit

Validity

Convergent Validity - Overall DEEP CTN and all four sub-scales correlated with existing measures of CTN

Zero-order correlations between DEEP CTN Scale & existing CTN measures

	Overall	Deep	Experiential	Emotional	Presence
CNS	0.69**	0.71**	0.62**	0.45**	0.46**
EID-R	0.72**	0.57**	0.79**	0.51**	0.48**

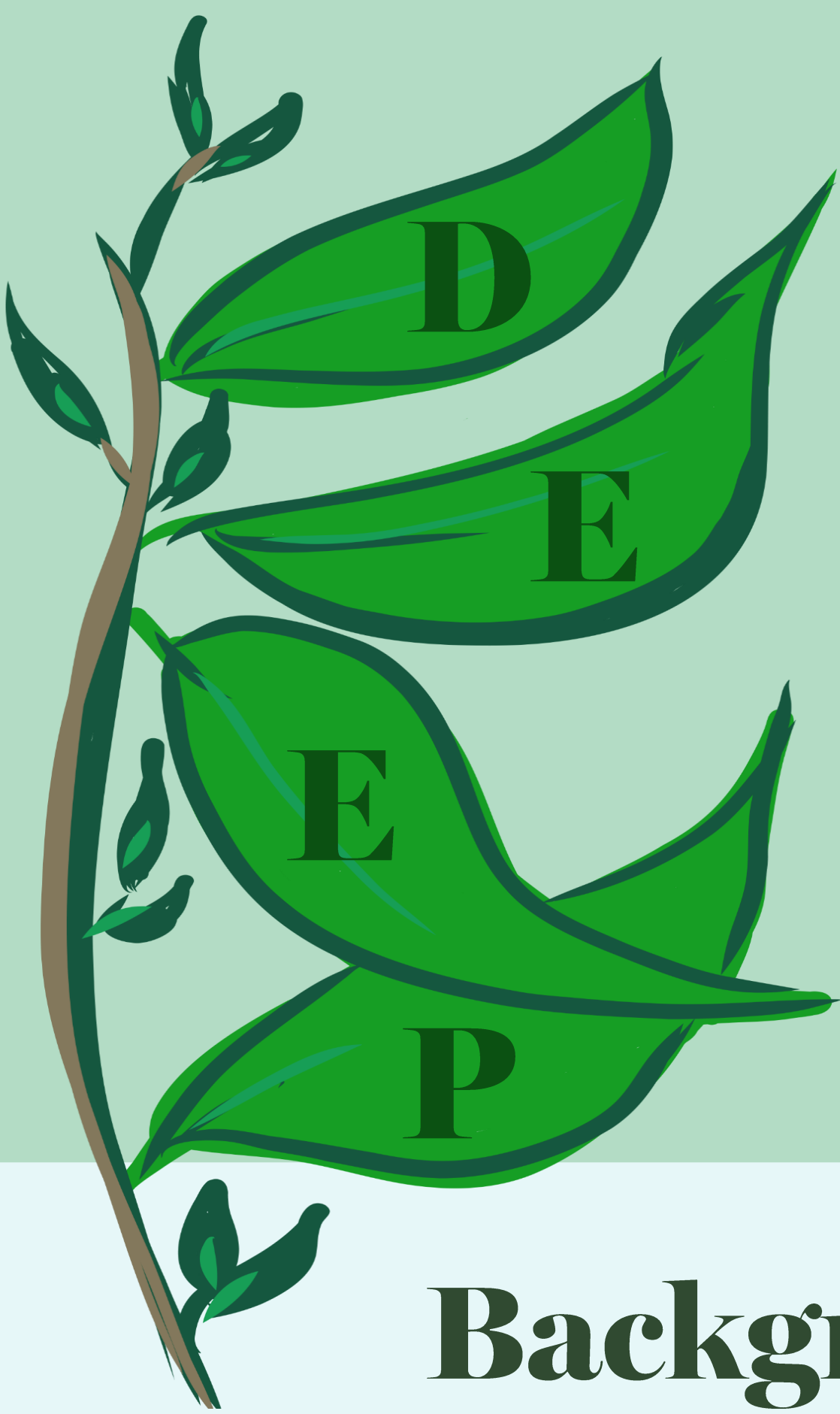
CNS: Connectedness to Nature Scale (Mayer & Frantz, 2004)
EID-R: Environmental Identity Scale revised (Clayton et al., 2021)

Predictive Validity – Deep, Emotional, & Presence predicted Pro-Environmental Behavior

Linear regression predicting PEB from DEEP CTN Scale

Variable	partial R ²	p	β (90%CI)
Deep	0.09***	<0.00	0.24 (0.10 – 0.38)
Experiential	0.04	0.54	0.04 (-0.09 – 0.17)
Emotional	0.07**	0.01	0.17 (0.05 – 0.30)
Presence	0.07**	0.01	0.17 (0.04 – 0.30)

** p < .01, *** p < .001



Going Deeper: Validation of the DEEP Connection to Nature Scale

Background: Connection to Nature (CTN) is a deeply held identity that includes nature in the self. Recent studies suggest a multi-dimensional structure; however, the dimensional structure is still unclear. Over two studies (with four samples) we confirmed and validated a four-factor structure of CTN:


Deep Identity

Experiential Connection

Emotional Connection


Presence within Nature

DEEP Connection to Nature Scale: Example items & details of each factor




Deep Identity
Deeply seeing the self as part of nature

I view nature as a mother who nurtures & cares for me
Humans & nature are connected by the same “energy”
My connection to nature is “spiritual”
I think about the “shared breath” between myself and plants
I often think about all life as grounded on this planet




Experiential
Spending and enjoying time in nature

My favorite place is in nature
Walking through a forest makes me forget my worries
I like to get outdoors whenever I get the chance
I feel uneasy if I am away from nature for too long
I engage and participate with nature to find meaning



Emotional
Desire to connect with nature and protect it

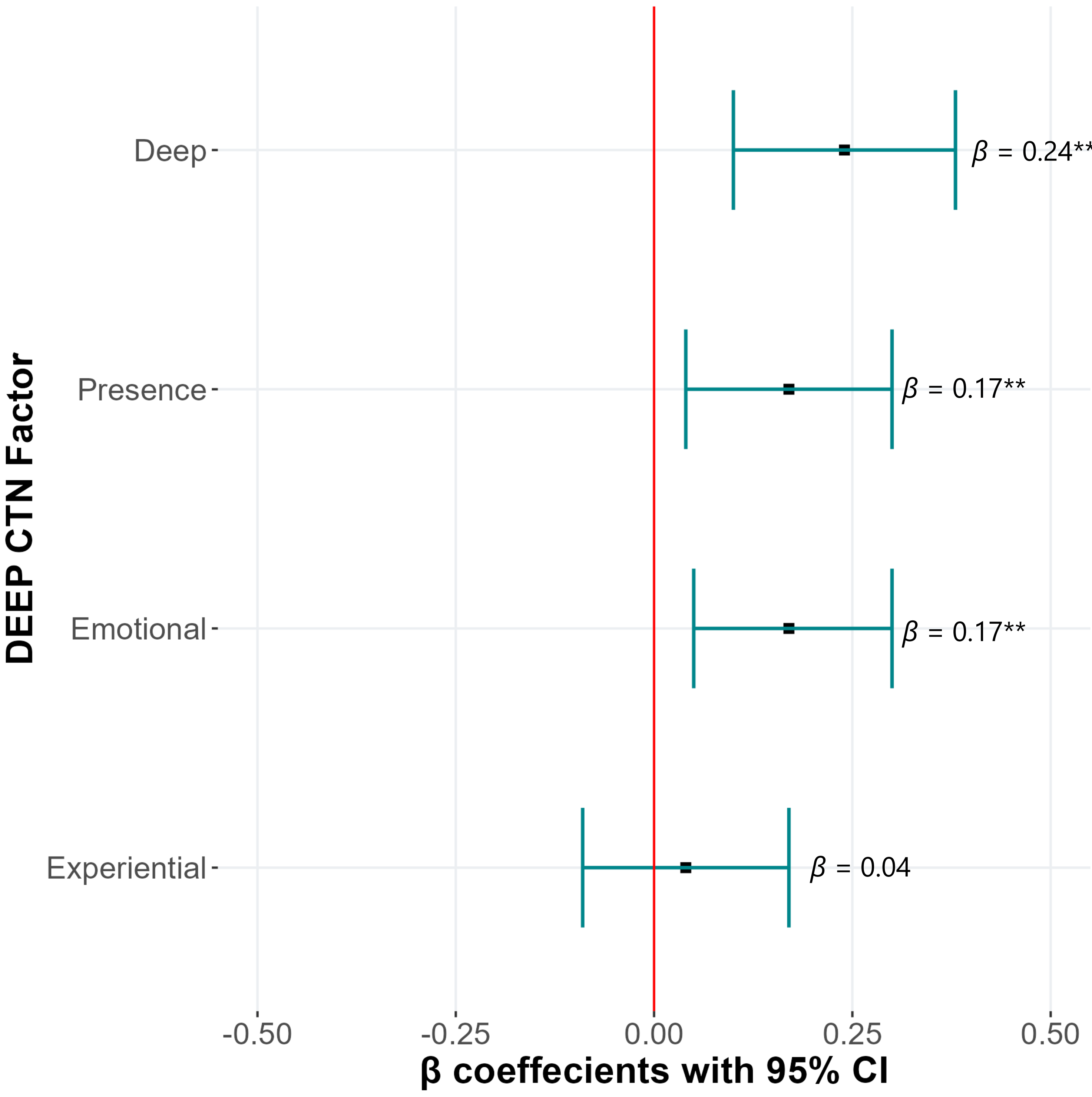
Seeing a cleared forest is upsetting
If one of my plants died, I would blame myself
Someone carving initials into a tree makes me cringe
I try to catch and release insects in my home instead of killing them
I talk to the wild animals I encounter



Presence
Being deliberately present and mindful in nature

I take time to watch the clouds pass by
I deliberately take time to watch stars at night
I consciously watch or listen to birds
I take time to consciously smell flowers
I pay attention to the current phase of the moon

Effect sizes predicting Pro-Environmental Behavior



Scan for...

- Copy of poster
- Full details of DEEP CTN Measure
- Full data analysis of Study 1 – EFA
- Full data analysis of Study 2 – CFA & Validity
- Complete References

UC San Diego



PRESENTER
Debra Lindsay

CO-AUTHOR
Karen Dobkins