photo courtesy of University of Wisconsin

The Development and Validation of the RichMind Mindfulness Scale

Daniel Goldman and Jane Berry[1]
University of Richmond

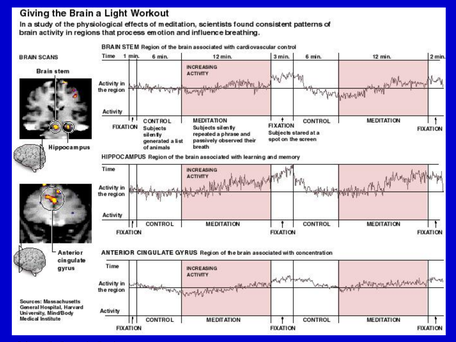
[1]The authors would like to acknowledge Anna Solomon for her assistance with the study, as well as the University of Richmond for providing funding assistance.

photo courtesy of University of Wisconsin

"We don't see things as they are, we see things as we are." - Anais Nin

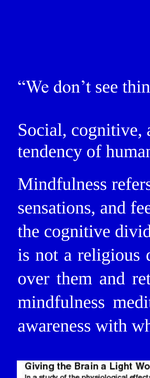
Social, cognitive, and clinical psychology all address the aforementioned phenomenon. At the core of this inaccuracy is the seemingly inherent tendency of humans to let schemas, biases, or other cognitive frameworks obstruct their ability to observe experience objectively.

Mindfulness refers to one's level of ability to be receptively aware of and give undivided attention, without judgment or purpose, to thoughts, sensations, and feelings as they arise in the present moment, without ignoring, dismissing, discouraging, or clinging to them. Mindful ability is the cognitive dividend of a discipline of Buddhist meditation called *vipassana*, often translated as *mindfulness* or *insight meditation*. Vipassana is not a religious dogma or rite, but simply a measured process of observing the actions of the mind so that one may gradually gain control over them and retrain the mind to interpret cognitive and affective experiences in ways that promote higher functioning. The practice of mindfulness meditation trains individuals to focus objectively on one's bare experiences, not on thoughts about them, and engender an awareness with which one can protect oneself against being hamstrung by distorted or destructive cognitions and emotions.



Coleman, D. *Destructive Emotions*

Recent research using fMRI, EEG, and EOG suggests that mindfulness meditation generates a prominent increase in activity in the brain's left prefrontal cortex, an area that is associated with positive emotion, calmness, and recovery from negative events. Dr. Richard Davidson has tested individuals highly trained in mindfulness using this technology, and has recorded heightened activity in the left region at levels previously unseen in his brain imaging research. Davidson's results suggest that the mind, in response to adequate training, can experience positive neuroplasticity. Mindfulness practice, in particular, may conduce an enduring change in cognitive and attentional capacities by strengthening in left prefrontal cortex neurons, thus impeding neural missives from the amygdala that lead to distressing emotions.



Time Magazine

Next, Davidson teamed up with Jon Kabat-Zinn, who trained a group of office workers in mindfulness practice 3 hrs/wk for 8 weeks. The treatment group exhibited significant increases in activity in the left-sided anterior temporal region compared to brain scans performed before training began. In addition, 4 months after training ended the treatment group reported decreases in negative trait affect, stress, and anxiety, while also reporting increased energy and engagement in their work. In both cases, the control group showed no significant changes. Davidson tested the same subjects for immune function in response to a flu vaccine. Not only did meditation group have a larger immune response than non-meditators, but those who showed the highest levels of left-frontal brain activity also showed the largest boost in immune response.

Results of other mindfulness research have been equally remarkable:

- Kabat-Zinn found that mindfulness training significantly reduced distress and suffering due to chronic pain (1982), moderated anxiety in sufferers of anxiety disorders (Kabat-Zinn, et al., 1992), and increased the rate of skin clearing in sufferers of moderate to severe psoriasis fourfold (Kabat-Zinn, et al., 1998).
- Paul Ekman found that trained monks were capable of unprecedented rates of cognitive processing when presented with a series of facial expressions flashed on a screen for just 1/30th of a second. As a group, they outperformed the previous top performing groups, which include Secret Service agents and psychiatrists. Ekman even found that one monk was able to suppress the "startle reflex," and involuntary behavior that was thought by most to be irrepressible.

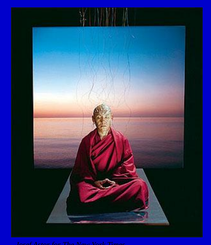
The significance of these findings could be substantial. Still, mindfulness research is in its infancy, and in fact has neglected a few important area. To date, Brown & Ryan (2003) has been the only published study that has tested for mindfulness in non-meditators. I contend that lay persons in fact can be mindful to varying degrees, and that improvements can be made upon both Brown & Ryan's study, particularly in regard to their measure. Their scale, the Mindfulness Attention/Awareness Scale (MAAS) purports that the construct of mindfulness can be accurately measured using a single-factor model (*at right*). I propose, however, that the operational definition resulting from this single-factor focus is not comprehensive enough to define the construct, and as such have proposed my own 3-factor model (*at right*), the RichMind Mindfulness Scale.

Brown & Ryan tested the MAAS against 56 other non-mindfulness scales, and it was shown to be significantly correlated with 52 of the 56 scales, leading me to believe that it does not necessarily measure the unique construct of mindfulness. My goal, then, was to develop a scale that more accurately measures mindfulness in non-meditators and has appropriate levels of convergent and discriminant validity.

photo courtesy of Harvard University Gazette

photo courtesy of University of Wisconsin

photo courtesy of University of Wisconsin



Josef Astor for The New York Times

Materials:

Four item inventories were used in this study in order to determine validity and reliability for the RichMind Mindfulness Scale (RMS) developed by the lead experimenter. Inclusion of the Mindfulness Attention/Awareness Scale (MAAS) served to determine whether or not convergent validity with the RMS could be established. Inclusion of the Proactive Coping Inventory (PCI) served to determine whether or not discriminant validity with the RMS could be established. The Self-Consciousness Scale (SCS) had been included in Brown & Ryan's (2003) validation study of the MAAS, and the authors found no significant correlation between the two. Due to the nature of the items included on the SCS, however, we were somewhat suspect of this fining and predicted a small but significant negative correlation between the RMS and SCS. If the expected correlations were found, they would strengthen the experimenter's hypothesis by indicating that the RMS (a) measures the mindfulness construct; (b) can be discriminated from other constructs; and (c) has essential measurement distinctions from the MAAS.

Participants:

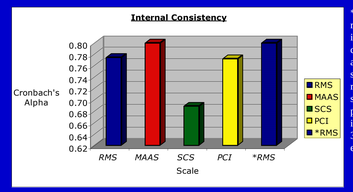
- 79 undergraduate students from the University of Richmond completed four item inventories {RMS, MAAS, SCS, PCI} in exchange for either course credit or $5. Of the 79 cases, 75 were retained for analysis; 3 were removed due to missing data, and one due to data entry error.

Female: N = 47 — *No* meditation/yoga experience: N = 71
Male: N = 32 — *Some* meditation/yoga experience: N = 8
Mean Age = 19.15 yrs

		RMS	MAAS	SCS	PCI
RMS	Pearson Correlation	1.00	.486**	-.210	.247*
	Sig. (2-tailed)	.	.000	.064	.028
MAAS	Pearson Correlation	.486**	1.00	.039	-.031
	Sig. (2-tailed)	.000	.	.734	.788
SCS	Pearson Correlation	-.210	.039	1.00	.137
	Sig. (2-tailed)	.064	.734	.	.230
PCI	Pearson Correlation	.247*	-.031	.137	1.00
	Sig. (2-tailed)	.028	.788	.230	.

* Correlation is significant at 0.05 level (2-tailed) ** Correlation is significant at 0.01 level (2-tailed)

- Items were ranked using Likert scales between 4 and 6 points in range.
- Order and sequence effects were controlled for by varying the order of presentation as determined by a balanced Latin square.
- Values were entered in an SPSS data file. Corrections were made for items that required reverse scoring.



* (Using results from the reliability analysis and an inordinate principle components factor analysis, descriptive statistics, as well as reconsideration of the strength of association to proposed factors, the inventory was reduced to 35 items for use in future experimentation.)

Mindfulness Attention / Awareness Scale (MAAS) (Brown & Ryan, 2003)

- (1) Open or receptive attention to and awareness of ongoing events and experience.
- (1) Self-regulated attention.
- (2) Orientation toward experience characterized by curiosity, openness, and acceptance in the present moment.

Toronto Mindfulness Scale (TMS) (Bishop, et al., unpublished)

- (1) Undivided and sustained present-centered attention and awareness.
- (2) Non-judgmental / non-attached / non-aversive openness to all thoughts, feelings, sensations, and experiences.

RichMind Mindfulness Scale (RMS) (Goldman, unpublished)

- (3) Deliberate, reflective (as opposed to reflexive) cognitive processing.
- (1)Disidentifying attentional process.
- (2) Accepting, open attitude toward experience.

Freiburg Mindfulness Inventory (FMI) (Buchheld, et al., 2001)

- (3) Process-oriented understanding.
- (4) Paying attention to the present moment without distraction.

Bishop S. R., Segal, Z. V., Lau, M., Anderson, N. D., Carlson, L., Shapiro, S., Carmody, J., Abbey, S., & Devins, G. The Toronto mindfulness scale: Development and validation. (Manuscript in review).
Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. Journal of Personality and Social Psychology, 84(4), 822-848.
Buchheld, N., Exigel, K., Ott, U., & Press, H. (2002). Measuring mindfulness in insight meditation (vipassana) and meditation-based psychotherapy: The development of the Freiburg mindfulness inventory (FMI). Journal for Meditation and Meditation Research, 1, 11-27.
Davidson, R. J., Kabat-Zinn, J., Schumacher, J., Rosenkranz, M., Muller, D., Santorelli, S. F., Urbanowski, F., Harrington, A., Bonus, K., & Sheridan, J. F. (2003). Alterations in brain and immune function produced by mindfulness meditation. Psychosomatic Medicine, 65(4), 564-570.
Ekman, P. (2003). Emotions revealed: Recognizing faces and feelings to improve communication and emotional life. New York: Times.
Fenigstein, A., Scheier, M. F., & Buss, A. H. (1975). Public and private self-consciousness: Assessment and theory. *Journal of Consulting and clinical psychology, 43*(4), 522-527.
Greenglass, E., Schwarzer, R., & Taubert, S. (1999). The Proactive Coping Inventory: A multidimensional research instrument. Retrieved from http://userpage.fu-berlin.de/~health/greenpcir.htm.
Kabat-Zinn, J. (1982). An outpatient program in behavioral medicine for chronic pain patients based on the practice on mindfulness meditation: Theoretical considerations and preliminary results. General Hospital Psychiatry, 4, 33-47.
Kabat-Zinn, J., Lipworth, L., & Burney, R. (1985). The clinical use of mindfulness meditation for the self-regulation of chronic pain. Journal of Behavioral Medicine, 8(2), 163-190.
Kabat-Zinn, J., Massion, A. O., Kristeller, J., Peterson, L. G., et al. (1992). Effectiveness of a meditation-based stress reduction program in the treatment of anxiety disorders. American Journal of Psychiatry, 149(7), 936-943.
Kabat-Zinn, J. Wheeler, E., Light, T. Skillings, A., Scharf, M., Cropley, T. G., Hosmer, D., & Bernhard, J. D. (1998). Influence of a mindfulness meditation-based stress reduction intervention on rates of skin clearing in patients with moderate to severe psoriasis undergoing phototherapy (UVB) and photochemotherapy (PUVA). *Psychosomatic Medicine, 60*(5), 625-632.