

## CURRICULUM VITAE

### **PERSONAL DATA**

Tal Shafir, PhD, DMT (Dance-Movement Therapist), CMA (Certified (Laban) Movement Analyst)  
 Research Fellow  
 The Emily Sagol Creative Arts Therapies Research Center, University of Haifa  
 Email: [tshafir1@univ.haifa.ac.il](mailto:tshafir1@univ.haifa.ac.il)  
 Adjunct Research Investigator  
 Department of Psychiatry, University of Michigan, USA.  
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 Anat Baniel Method Neuromovement (ABMN) practitioner  
 Private practice  
<https://www.talshafir.com/>

### **ACADEMIC EDUCATION**

1983 Bachelor of Law (LLB); Hebrew University - Law School, Jerusalem, Israel.  
 1986 Diploma; Dance-Movement Therapy; University of Haifa, Haifa, Israel  
 1994 M.S. in Kinesiology (Movement science); University of Michigan, Ann Arbor, Michigan  
 2003 Ph.D. in Kinesiology (Neurophysiology of Motor Control); University of Michigan, Ann Arbor, Michigan  
 2001-2006 Post-Doctoral Fellowship; Center for Human Growth and Development, University of Michigan, Ann Arbor, Michigan  
 2006-2010 Post-Doctoral Fellowship; Molecular and Behavioral Neuroscience Institute, University of Michigan, Ann Arbor, Michigan

### **MOVEMENT EDUCATION**

1974 Instructor training course in gymnastics; Wingate Institute, Israel  
 1976-1979 Dance Teacher certification; Haifa Dance Center, Haifa, Israel  
 1997 Personal Trainer certification; ACE (American Council on Exercise)  
 2017-2019 [Anat Baniel Method: Neuromovement](#) practitioner training certification  
 2017-2019 Certification Program in Laban Movement Analysis, [LIMS® \(Laban/Bartenieff Institute of Movement Studies\)](#), New York, USA.  
 2019-2020 Anat Baniel Method: Neuromovement Continuing Education Mastery Program: [Children with Special Needs](#) certification.

- 2020 Anat Baniel Method: Neuromovement Continuing Education Program: [ABMNM-OAHC \(Online At Home Coaching\)](#) Course.
- 2020 Anat Baniel Method: Neuromovement Continuing Education Mastery Program: [Vitality and Anti-Aging](#).
- 2021 Anat Baniel Method: Neuromovement Continuing Education Mastery Program: [Working with High Performers](#).
- 2021 Anat Baniel Method: Neuromovement Continuing education program: Children with Special Needs Prelude.
- 2021 Anat Baniel Method: Neuromovement Continuing education program: From fixing to connecting.
- 2021-present Training with Lior Pessach to become a Feldenkrais practitioner.
- 2022 Two advanced continuing education workshops with Suzi Marks (Anat Baniel method trainer and Feldenkrais practitioner): Foundation workshop; Transitions and the Sensory System Workshop

### **BUSINESS EDUCATION & EXPERIENCE**

- 1982-1984 Law internship in Tel Aviv District Court with Judge Maltz who served later at the Supreme Court (1982-3), and in a law office (Mirkin, 1983-4)
- 2008 - Strategic Planning and Implementation  
- Finance for the Nonfinancial Manager  
- Management  
Executive education programs in Ross School of Business, University of Michigan, Ann Arbor, Michigan
- 2009-2010 Director, Teva North America
- 2013 Directors course  
Hamil (המרכז הישראלי לניהול- המי"ל), Tel Aviv, Israel

### **SCIENTIFIC WORK**

- 1993-1994 Research assistant (with Dr. Charls Worringham)  
Motor Behavior laboratory, The Division of Kinesiology, University of Michigan, Ann Arbor, Michigan.  
*Motor control of sequential movements in Parkinson's Disease*
- 1994-1998 Research assistant (with Dr. Susan Brown)  
Motor Control laboratory, The Division of Kinesiology, University of Michigan, Ann Arbor, Michigan  
*Effects of auditory cueing on motor control in Parkinson's Disease.*

- 1998-1999 Research assistant (with Dr. Rosa Angulo-Barosso)  
Motor Development laboratory, The Division of Kinesiology, University of Michigan, Ann Arbor, Michigan  
*Infants' learning of leg movement patterns*
- 2000 Research assistant (with Dr. Dale Ulrich)  
Center for Motor Behavior in Down Syndrome, Division of Kinesiology, University of Michigan, Ann Arbor, Michigan  
*Effects of treadmill training on onset of gait in infants with Down Syndrome.*
- 2001-2006 Research (Post-Doctoral) Fellow (with Prof. Betsy Lozoff and Dr. Rosa Angulo-Barosso)  
Center for Human Growth and Development, University of Michigan, Ann Arbor, Michigan  
*Effects of iron deficiency in infancy on brain and behavior.*
- 2006-2010 Research (Post-Doctoral) Fellow (with Prof. Jon-Kar Zubieta)  
Molecular and Behavioral Neuroscience Institute (MBNI), University of Michigan, Ann Arbor, Michigan  
*Brain imaging of emotional processing; Movement intervention for depression.*  
In parallel, I took part in an interdisciplinary study directed by Prof. Twila Tardif at the Center for Human Growth and Development, which looked at  
*Neurophysiological Correlates of Emotion Regulation in US and Chinese Preschoolers.*
- 2010-2012 Research Investigator  
Department of Psychiatry, University of Michigan  
*Brain mechanisms underlying movement-emotion interaction; Motor-based interventions for depression.*
- 2012-2017 Assistant Professor  
School for Creative Arts Therapies, Faculty of Social Welfare & Health Sciences  
University of Haifa, Haifa, Israel.  
*Movement-emotion interaction; Perception/expression of emotions from/through body movements and postures (body language);  
Automated recognition of whole-body movement characteristics (Laban motor components) using machine learning*
- 2017-present Research Fellow  
The Emili Sagol Creative Arts Therapies Research Center, University of Haifa, Haifa, Israel.  
*Movement-emotion interaction;  
Associations between personality traits and movement patterns;  
Automated recognition (using machine learning) of Laban motor components*

### **MOVEMENT THERAPY AND MOVEMENT TEACHING**

- 1979-2000 Fitness, gymnastics, dance and creative movement for children and adults  
Various organizations in Israel and in Ann Arbor, Michigan

- 1985-1988 Dance-movement therapy with psychiatric patients, mentally retarded children, hearing impaired children and senior citizens  
Shalvata psychiatric hospital and various organizations in Israel
- 1989-1993 Dance-movement therapy and adapted creative movement  
Special education classes, Ann Arbor public schools, Ann Arbor, Michigan
- 2004-2005 Several dance therapy sessions at University of Michigan Comprehensive Cancer Center and Cardiovascular Center
- 2019-2020 Neuromovement with children with special needs  
Volunteering at Gan Hayeled and Gan Flora, Haifa, Israel
- 2020-present Neuromovement with children with special needs and with adults  
Private practice, Haifa, Israel

### **ACADEMIC TEACHING**

- Spring 2001 UM Teaching Fellow  
A five weeks training program provided on competitive basis to graduate students with strong potential for teaching. Awarded by the school of graduate studies and the Center for Research on Learning and Teaching, University of Michigan
- Winter 2001 Instructor: MVS/KIN 411: Instrumentation and measurements in motor control and biomechanics  
The division of Kinesiology, University of Michigan, Ann Arbor, Michigan
- 2012-2017 4845: Kinesiology  
4946: Kinesiology for experienced therapists  
4407: Motor Development  
4820: Movement and emotion  
4011: Quantitative research methods  
4203: Basic principles in dance-movement therapy  
4840: Dance-movement therapy advanced: Case studies in DMT.  
4837: Dance-movement therapy for older adults  
School for Creative Arts Therapies, University of Haifa, Haifa, Israel
- 2017-2018 Movement and emotion  
The Academic College at Wingate, Netanya, Israel  
The Academic College of Society & Arts (ASA), Netanya, Israel
- 2018-2020 Theories and methods in dance-movement therapy  
Assessment and Diagnosis in dance-movement therapy  
The Academic College of Society & Arts (ASA), Netanya, Israel
- Feb 2020 Environment→Movement→Emotion from a neuroscience perspective  
Jan 2021 Invited full day (8 hours) of teaching at:  
Jan 2022 [NAAD \(Neuroscience Applied to Architecture Design\) Master 2019/2020](#) program, Universita luav di Venezia, Venice, Italy.

**ACADEMIC MENTORING**

2000-2012 Mentoring UROP (Undergraduate Research Opportunity Program), MIRT (Minority International Research Training program) and pre-med students  
The division of Kinesiology, Center for Human Growth and Development,  
Department of Psychiatry, University of Michigan, Ann Arbor, Michigan

**MASTERS STUDENTS:**

- Naama Shaiovitz: The relationship between religiosity level, body image and self-esteem among single women  
(Two papers submitted for publication to international journals)
- Shir Gilor: Bodily expressions of sadness and happiness.  
(Thesis was presented at an international conference; paper in preparation)
- Julieta Bluman: Personal movement patterns and their relation to handwriting  
(Thesis was presented at an international conference)
- Ayelet Meltzer: Perception of emotion from movement: which motor elements are associated with which emotion, and how this perception is related to empathy?  
(Thesis was presented at national and international conferences; paper published in *Frontiers in Psychology*)
- Hila Kopitz: How dancing affects mood in children age 8-12: impact and implications for different motor elements comprising the dance
- Shirly Greenshtein The effect of viewing your negotiation partner's motor behaviour on negotiation.  
(Thesis presented at national and international conferences; paper in preparation)
- Tami Seifert The relationship between kinesthetic ability and emotional empathy.  
(Thesis was presented at an international conference)
- Dorit Guy-Jelinek Associations between personality traits and movement patterns – in progress

**PHD STUDENTS:**

- Naama Spitzer: Examining the Relationship between Care-receivers' Emotion Recognition and Caregivers' Burden among Main Caregivers of Persons with Mild Cognitive Impairment and Early Alzheimer's Disease: Expanding Pearlin's Stress Process Model – in progress  
(preliminary study was presented at a national conference; paper published in *Alzheimer Disease & Associated Disorders*)

**REVIEW AND EDITORIAL ROLES**

- 2006-present Reviewer for the journals:  
 Perceptual & Motor Skills  
 Journal of Nutrition  
 Studies in Education  
 Expert Systems With Applications  
 The Journal of Sports Medicine and Physical Fitness  
 Eating and Weight Disorders – Studies on Anorexia Bulimia and Obesity  
 The Arts in Psychotherapy  
 Neuropsychoanalysis  
 Nessa journal of Neurology and Neurodisorders  
 Frontiers Pediatric, section Child Health and Human Development  
 Frontiers Human Neuroscience  
 Frontiers in Psychology  
 Neuroscience Letters  
 Journal of Alternative and Complementary Medicine  
 Journal of Nonverbal Behavior  
 Psychological research  
 Frontiers in Computer Science  
 Journal of Alzheimer’s Disease
- 2011-2016 Associate Editor for ‘Academic Journal of Creative Arts Therapies’.
- 2016-2019 Main Associate Editor for the journal: The Academic Journal of Creative Art Therapies
- 2017-2019 Frontiers research topic main editor (by personal invitation) for the topic: “The state of the art in creative arts therapies”
- 2017-present Guest associate editor for ‘Frontiers in Psychology: Clinical and Health Psychology’
- 2021 Reviewer for the EADMT (European Association Dance Movement Therapy) 2022 conference presentations.

**CONFERENCE ORGANIZATION**

- 1990 Co-chair Israel Conference Day  
 Rackham School of Graduate Studies, University of Michigan, Ann Arbor, Michigan
- 1995, 1996, Kinesiology annual research day committee member  
 1997 The Division of Kinesiology, University of Michigan, Ann Arbor, Michigan
- 2003-2004 Member in the planning group for University of Michigan Life Science, Values and Society seminar “This is Your Brain on Dance”  
 University of Michigan, Ann Arbor, Michigan
- 2011 Conceived, initiated, raised funding for, planned, and organized the symposium: “Motion-Emotion Interaction in Brain and Behavior”

University of Michigan Depression Center, Ann Arbor, Michigan

- 2015 Participated in the planning of the symposium: "To touch the body of the soul"  
The Graduate School of Creative Arts Therapies, University of Haifa, Israel
- 2016-2017 Member of the scientific committee which organized the international conference:  
"[Movementis 2017: World Conference on Movement and Cognition](#)", that took place in Oxford University, Oxford, UK in July 2017.

### **ROLE IN PROFESSIONAL ORGANIZATIONS**

- 2016-present Member of the Research Committee (by personal invitation)  
American Dance Therapy Association.

### **SERVICE**

- 1989-1990 ISFI (Institute for Students and Faculty on Israel) representative  
University of Michigan, Ann Arbor, Michigan
- 1999-2000 Kinesiology Curriculum Advisory committee member  
The Division of Kinesiology, University of Michigan, Ann Arbor, Michigan
- 2009 Provided content regarding exercise and depression for the University of Michigan Depression Center website.  
University of Michigan Depression Center, Ann Arbor, Michigan
- 2013-2014 Organizer and leader of the monthly research meetings  
Emili Sagol Creative Arts Therapies Research Center, University of Haifa, Israel
- 2015 A faculty member providing educational lectures and mentoring PhD students in the German-Israeli collaborative project "Störung/ הפרעה", that united researchers (from Hebrew University, Weizmann Institute, Ben Gurion University, Haifa University, University of Freiburg), dancers, Choreographers, physicians and Parkinson's patients in Israel and Germany to explore the different facets of human movement and what it means to lose control over it. (See <https://hafraah.wordpress.com/people/> )
- 2015-2017 Member of the Ethics Committee  
Faculty of Social Welfare & Health Sciences, University of Haifa, Israel
- 2016-present Member of the Research Committee (by personal invitation)  
American Dance Therapy Association
- 2019-2020 Volunteer as an ABM: Neuromovement practitioner in "Gan Hayered" and "Gan Flora", treating children with special needs.
- 2023 Support staff at Anat Baniel Method Neuromovement Continuing Education  
Mastery Program: [Children with Special Needs](#)

**RESEARCH GRANTS**

1995	Parkinson's Disease Foundation Summer Fellowship <i>Role of Auditory Cueing in Assisting Movement in Parkinson's Disease</i>	\$2,200
1996	Parkinson's Disease Foundation Summer Fellowship <i>Role of Auditory Cueing in Facilitating Limb-Posture Coordination in Parkinson's Disease</i>	\$2,200
2007	Integrative Medicine Pilot Grant Program, University of Michigan (Co-P.I. with Richard Dopp, M.D.) <i>Neuromuscular Stimulation in Depression: Exercise and Whole Body Vibration Stimulation</i>	\$8,300
2008	Post-doctoral Translational Scholars Program, University of Michigan <i>Performance, Imagery and Observation of Happy Movements as an Intervention for Depression</i>	\$100,000
2009	MICHR Pilot and Collaborative Grant, University of Michigan (Co-P.I. with Richard Dopp, M.D.) <i>Neuromuscular Stimulation in Depression: Exercise and Whole Body Vibration Stimulation</i>	\$24,978
2010	Power Plate International B.V. Vibration plate: <i>Neuromuscular Stimulation in Depression: Exercise and Whole Body Vibration Stimulation</i>	\$9,500
2017	Marian Chase Foundation (Co-PI with Prof. Robyn Flaum Cruz and Rachelle Tsachor) <i>Associations between personality traits and movement patterns</i>	\$8000
2018	Erasmus With Prof. Klaus Gramann from Berlin Institute of Technology <i>Mobility grant for exchange of 1 PhD student and 1 faculty from each country, for collaboration on a research project involving mobile EEG during emotional movements</i>	\$11,886
2023	NSF CCRI (With Prof. James Wang, Prof. Jia Li, Prof. Adams Reginald, Prof. Michelle Newman, Associate Prof. Rachelle Tsachor, Amy La Viers, PhD, Catherine Maguire, CMA, Si-Hyun Yoo, CMA) <i>Emotion in Motion: An Open Data Infrastructure for Computational Modeling and Recognition of Bodily Expression of Emotion</i>	\$1,500.000



**AWARDS AND HONORS**

- 1993            The Ruth W. Harris Merit Award  
For academic achievement in graduate studies.  
Awarded by Kinesiology, University of Michigan
- 1994, 1996    Rackham Block Grant  
For academic merit.  
Awarded by the school of graduate studies, University of Michigan
- 1999, 2000,    Rackham Travel Grant  
2002,            To assist students who are delivering papers or posters at international  
conferences.  
Awarded by the school of graduate studies, University of Michigan
- 2010            1st place Trainee Poster Award  
21<sup>st</sup> Annual Albert J. Silverman Research Conference  
Department of Psychiatry, University of Michigan
- 2010            1st prize Postdoctoral Poster Award  
A. Alfred Taubman Medical Research Institute and Michigan Institute for Clinical  
& Health Research (MICHHR) Annual Symposium. University of Michigan
- 2020            Innovation award  
In recognition and gratitude for my contributions to the ADTA and the field of  
dance/movement therapy  
Awarded by the American Dance Therapy Association (ADTA)

**INVITED PRESENTATIONS**

- Imagery and execution of motor performance: a comparison  
The Zinman college of Physical Education and Sport Sciences in Wingate Institute, Israel.  
June, 1998.
- Creative movement with an object.  
PE 336: K-12 Rhythms and Dance, the Division of Kinesiology, University of Michigan, Ann  
Arbor, Michigan. Winter, 2000 and Fall, 2000.
- Creative movement with objects  
Using objects in adapted physical education  
Two sessions during the 8<sup>th</sup> annual Physical Education Workshop, organized as continuing  
education for physical education teachers by the PE department at the Division of  
Kinesiology, University of Michigan, Ann Arbor, Michigan. December, 2001.
- New ways for using traditional equipment  
11<sup>th</sup> annual Physical Education Workshop, organized as continuing education for physical  
education teachers by the PE department at the Division of Kinesiology, University of  
Michigan, Ann Arbor, Michigan. December, 2004.
- Dance therapy for cancer patients

University of Michigan Comprehensive Cancer Center, Ann Arbor, Michigan. February, 2005.

Iron deficiency affects Motor development in 9-Month-old infants  
Presidential Plenary Session, Pediatric Academic Societies meeting, Washington DC. May, 2005.

Use of emotional body expressions in medicine  
American Medical Student Association annual complimentary and alternative medicine retreat, Wayne State University School of Medicine, Detroit Michigan. March, 2007.

Research methods in the study of motion-emotion interaction  
Dance-movement therapy program, Seminar Hakibbutzim College, Tel Aviv, Israel. December, 2007.

Effects of Movement-Emotion Interaction on Brain and Behavior  
Graduate School of Creative Art Therapies, University of Haifa, Haifa, Israel. April 2011.

Move Happy and Be Happy: Effects of Dynamic Body Expressions of Emotions on Brain Activation and Affective State.  
'Motion-Emotion Interaction in Brain and Behavior' symposium. University of Michigan Depression Center, Ann Arbor, MI, July 2011.

Embodiment of emotions and body language.  
Fall 2011 Seminar Series: 'Embodiment and Metaphors in Social Life: Their Influence on Cognition, Affect, and Behavior'. Institute for Social Research, University of Michigan, Ann Arbor, MI

How Your Body affects Your Happiness  
**TEDx** Jaffa, October 2013. (<http://www.youtube.com/watch?v=lijm0ldxgkcE>). (over 307,000 views)

Movement-emotion Interaction and the brain  
Neuropsychiatry Lab, The Hebrew University of Jerusalem, January 2014.

Mechanisms underlying movement-emotion interaction and their implications for dance intervention for Parkinson's Disease  
BrainLinks-BrainTools: Project Störung, University of Freiburg, February 2015

Everybody can do it: The use of our body to affect our emotions  
"Night of the scientists", University of Haifa, September 2015  
(<https://www.youtube.com/watch?v=-HBi1ebdhq0>)

In the dance studio with Parkinson's Disease  
BrainLinks-BrainTools: Project Störung, University of Freiburg, December 2015

Let's dance: effects of dancing on physical and emotional health  
Department of Theater, University of Haifa, March 2016

Movement-emotion interaction  
Department of Human Services, University of Haifa, April 2016

When the body meets the soul: movement-emotion interactions and their application in psychotherapy

Shalvata Mental Health Center, Hod Hasharon, Israel, June 2017

Movement-Emotion interaction in Brain and Behavior

Israel Society for Neuroscience annual meeting, December 2017

Measuring brain mechanisms underlying dance-therapy: past & future directions

3ed International Mobile Brain/Body Imaging Conference, Berlin, Germany, July 2018.

Laban and emotional resiliency

Invited webinar presentation as part of the educational international [Laban webinar series](#) organized by [The Inspirees Institute](#) and [Laban/Bartenieff Institute of Movement Studies \(LIMS\)](#), November 2018.

Emotion perception and expression through movement in human-robot interaction

ABC Robotics Initiative Monthly colloquium, Ben-Gurion University, December 2018

Dance-movement therapy research in Israel

Invited oral presentation as Israel's representative in the international panel in the 2019 annual meeting of the American Dance Movement Therapy Association, Miami, Florida, USA, October 2019.

Environment → Movement → Emotion from a neuroscience perspective

Invited full day of teaching at the [NAAD \(Neuroscience Applied to Architecture Design\) Master 2019/2020](#) program, Universita luav di Venezia, Venice, Italy, February 2020.

Neurophysiological mechanisms underlying movement-emotion interaction

Invited presentation followed by a panel discussion in the "[Embodiment of Emotions](#)" webinar, organized and hosted by Universidad Autónoma de Chile, October 2020.

Emotion recognition from movement using Laban Movement Analysis.

Invited presentation at the "Analysis of Body Motion Behavior Workshop" organized by Prof. Bernhard Seeber for the Collaborative Research Centre SFB 1330 "Hearing Acoustics: Perceptive Principles, Algorithms and Applications" (HAPPAA) group, at Technische Universität München, Munich, Germany, January 2021

Environment → Movement → Emotion from a neuroscience perspective

Invited two days of teaching at the [NAAD \(Neuroscience Applied to Architecture Design\) Master program](#), Universita luav di Venezia, Venice, Italy, January 2021.

Neurophysiological mechanism underlying emotion regulation through movement and its application in dance-movement therapy using Laban movement analysis.

Invited presentation at the Creative Movement Therapy Association of India 18<sup>th</sup> Annual International Conference, On line (virtual) December 2021.

Environment → Movement → Emotion from a neuroscience perspective

Invited two days of teaching at the [NAAD \(Neuroscience Applied to Architecture Design\) Master program](#), Universita luav di Venezia, Venice, Italy, January 2022.

Research of movement-emotion interaction and its application in emotion regulation.  
Invited presentation followed by a discussion at the POLYLOGE forum of the German Society for Integrative Body and Exercise Therapy. On line (via Zoom), June 2022.

Using movement to affect emotion during cognitive behavioral therapy.  
Invited 6 days workshop to cognitive behavioral therapists from Ulm University, Germany, in which I taught them the Laban motor components associated with the four basic emotions: happiness, sadness, fear and anger, and we explored together motor components associated with several additional emotions. Haifa, Israel, August-September 2022

### **PUBLICATIONS (1505 citations)**

#### **ARTICLES** (Peer-reviewed)

**Shafir, T.**, Angulo-Barroso, R., Calatroni, A., Jimenez, E., Lozoff, B. (2006). Effects of iron deficiency in infancy on patterns of motor development over time. *Human Movement Science*, 25(6), 821-838. (PMC1993818)

**Shafir, T.**, Angulo-Barroso, R., Jing, Y., Angelilli, M. L., Jacobson S. W., Lozoff, B. (2008). Iron Deficiency and Infant Motor Development. *Early Human Development*, 84, 479-485.

Plunkett, M.J., Szemraj, J., Tilbury, D.M., Tardif, T., Felt, B., Kaciroti, N., Angulo-Barroso, R., **Shafir, T.**, Wang, L. (2008). Dynamic systems modeling of cortisol response in pre-schoolers using emotion and activity inputs. *Development and Learning*, 2008. ICDL 2008. 7th IEEE International Conference, 192-197.

**Shafir, T.**, Angulo-Barroso, R., Jing, Y., Angelilli, M. L., Jacobson S. W., Lozoff, B. (2009). Iron deficiency anemia in infancy and reach and grasp development. *Infant Behavior and Development*, 32(4), 366-375. (PMC2783819)

**Shafir, T.**, Brown, S. H. (2010). Timing and the control of rhythmic upper-limb movements. *Journal of Motor Behavior*, 42(1), 71-84.

Angulo-Barroso, R. M., Schapiro, L., Liang, W., Rodrigues, O., **Shafir, T.**, Kaciroti, N., Jacobson, S. W., and Lozoff, B. (2011). Motor development in 9-month-old infants in relation to cultural differences and iron status. *Developmental Psychobiology*, 53(2),196-210.

Mickey, B. J., Zhou, Z., Heitzeg, M. M., Heinz, E., Hodgkinson, C. A., Hsu, D. T., Langenecker, S. A., Love, T. M., Peciña, M., **Shafir, T.**, Stohler, C. S., Goldman, D., Zubieta, J-K. (2011) Functional genetic variation of neuropeptide Y predicts emotion processing and vulnerability to major depression. *Archives of General Psychiatry*, 68(2), 158-166.

**Shafir, T.**, Love, T. M., Berent-Spillon, A., Persad, C. C., Wang, H., Reame, N. K., Frey, K. A., Zubieta, J-K., Smith, Y. R. (2012) Postmenopausal Hormone Use Impact on Emotion Processing Circuitry. *Behavioural Brain Research*, 226(1), 147-153.

Hsu, D., Mickey, B., Langenecker, S., Heitzeg, M., Love, T., Wang, H., Kennedy, S., Pecina, M., **Shafir, T.**, Hodgkinson, C.A., Enoch, M., Goldman, D., Zubieta, J-K. (2012) Variation in the Corticotropin-Releasing Hormone Receptor 1 (CRHR1) Gene influences fMRI Signal Responses during Emotional Stimulus Processing. *J. Neurosci.* 32(9), 3253-3260.

**Shafir, T.**, Taylor, S.F, Atkinson, A.P, Langenecker, S.A., Zubieta. J-K. (2013) Emotion regulation through execution, observation, and imagery of emotional movements. *Brain and Cognition*, 82, 219-227.

Bernstein, R., **Shafir, T.**, Tsachor, R., Studd, K., Schuster, A. (2015). Laban Movement Analysis Using Kinect. *World Academy of Science, Engineering and Technology, International Science Index 102, International Journal of Computer, Electrical, Automation, Control and Information Engineering*, 9(6), 1394 - 1398.

Bernstein, R., **Shafir, T.**, Tsachor, R., Studd, K., & **Schuster, A.** (2015). Multitask learning for Laban movement analysis. *Proceedings of the 2nd International Workshop on Movement and Computing (MOCO)*, Vancouver, British Columbia, Canada, 37-44.

**Shafir, T.** (2016). Using Movement to Regulate Emotion: Neurophysiological Findings and Their Application in Psychotherapy. [Perspective]. *Frontiers in Psychology*, 7(1451). doi: 10.3389/fpsyg.2016.01451

**Shafir, T.**, Tsachor, R. P. and Welch, K. (2016). Emotion regulation through movement: Unique sets of movement characteristics are associated with and enhance basic emotions. *Frontiers in Psychology* 6, 2030, 1-15.

*This study was selected by the Israeli newspaper "The Marker" as one of the 26 most inspiring studies of the year.*

Leisman, G., Moustafa, A. A., and **Shafir, T.** (2016). Thinking, Walking, Talking: The development of integratory brain function. *Frontiers in Public Health* 4, 94

Tsachor, RP and **Shafir, T** (2017) A Somatic Movement Approach to Fostering Emotional Resiliency through Laban Movement Analysis. *Frontiers in Human Neuroscience* 11:410. doi: 10.3389/fnhum.2017.00410

Tsachor, R. P., & **Shafir, T.** (2019). How Shall I Count the Ways? A Method for Quantifying the Qualitative Aspects of Unscripted Movement with Laban Movement Analysis. *Frontiers in Psychology*, 10(572). doi: 10.3389/fpsyg.2019.00572

Spitzer, N., Shafir, T., Lerman, Y., & Werner, P. (2019). The Relationship Between Caregiver Burden and Emotion Recognition Deficits in Persons with MCI and Early AD: The Mediating Role of Caregivers' Subjective Evaluations. *Alzheimer disease and associated disorders*. doi: 10.1097/wad.0000000000000323

Melzer, A., **Shafir, T.**, & Tsachor, R. P. (2019). How do we recognize emotion from movement? Specific motor components contribute to the recognition of each emotion. *Frontiers in Psychology* 10, 1389. doi: 10.3389/fpsyg.2019.01389

**Shafir, T.**, Orkibi, H., Baker, F. A., Gussak, D. and Kamial, G. (2020). The State of the art in creative arts therapies. *Frontiers in Psychology* 11, 68. doi.org/10.3389/fpsyg.2020.00068

**Shafir, T.** (2021) Neurophysiologische Mechanismen der Bewegung-Emotion-Interaktion und ihre Verwendung in der Tanz- und Bewegungstherapie. (Neurophysiological mechanisms underlying movement-emotion interaction and their application in dance-movement therapy). *körper-tanz-bewegung*, 9 (1), 17-30. DOI 10.2378 / ktb2021.art03d.

Wang, J. Z., Zhao, S., Wu, C., Adams, R. B., Newman, M. G., **Shafir, T.** and Tsachor, R. (2023). Unlocking the emotional world of visual media: An overview of the science, research and impact of understanding emotion. Invited paper in Proceedings of the IEEE. Early access at: <https://ieeexplore.ieee.org/document/10132377>

Wu, C., Davaasuren, D., **Shafir, T.**, Tsachor, R. and Wang, J. Z. (2023). Bodily expressed emotion understanding through integrating Laban movement analysis, *Patterns*. Early access at: <https://doi.org/10.1016/j.patter.2023.100816>.

### **BOOK CHAPTERS**

**Shafir, T.** (2015). Movement-based strategies for emotion regulation. Invited chapter for M.L. Bryant (Ed.), *Handbook on Emotion Regulation: Processes, Cognitive Effects and Social Consequences* (pp 231-249). Nova Science Publishers, Inc. ISBN:978-1-63482-361-6

**Shafir, T.** (2021) Neurophysiological Aspects of Dance Movement Therapy for Psychiatric Rehabilitation. In: Volpe U. (eds) *Arts Therapies in Psychiatric Rehabilitation*. Springer, Cham. [https://doi.org/10.1007/978-3-030-76208-7\\_14](https://doi.org/10.1007/978-3-030-76208-7_14)

### **ARTICLES IN CONFERENCE PROCEEDINGS**

**Shafir, T.** and Tsachor, R. (2014) Collaborative Research: Practical Steps for Transforming your Clinical and Educational Insights into Research through Teamwork. *Proceedings of the American Dance Therapy association Annual Conference*. B5, 1-6

Tsachor, R. and **Shafir, T.** (2015) Body/Mind Connection: Clinical Implications of New Research into Emotion Recognition from Movements, Using Laban Analysis. *Proceedings of the American Dance Therapy Association Annual Meeting*. A3, 1-8

Tsachor, R. and **Shafir, T.** (2016). The Italian Dance Manual as a Source of Action for Theatre. *Proceedings of the Historical Dance Symposium* 247-253.

**ABSTRACTS AND CONFERENCE PRESENTATIONS**

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- Shafir-Liberzon, T.**, Angulo-Barroso, R., Calatroni, A., Jimenez E., Lozoff, B. (2004). Long-term effects of iron deficiency on motor development. *J. Sport Exer. Psych.* 26:S166.
- Lozoff, B., Smith, J., **Liberzon, T.**, Angulo-Barroso, A., Calatroni, A., Jimenez, E. (2004). Longitudinal analysis of cognitive and motor effects of iron deficiency in infancy. APA Plenary Presentation. *Pediatr Res*, 2004:55:23A
- Liberzon, T.** Angulo-Barroso, R.M., Jacobson S.W., Lozoff B. (2005). Effects of iron deficiency on reach and grasp movements in 9-month-old infants. *J. Sport Exer. Psych.* 27:S96.
- Shafir-Liberzon, T.**, Angulo-Barroso, R., Calatroni, A., Angelilli, M. L., Jacobson, S.W., Lozoff, B. (2005). Iron Deficiency Affects Motor Development in 9-Month-Old Infants. *PAS* 2005:57:1731
- Shafir, T.**, Zubieta, J.-K., Wang, H., Persad, C., Smith, Y. Effects of estrogen therapy on fMRI of emotional processing in postmenopausal women. Poster presented at the annual meeting of Society for Neuroscience, San Diego, CA, November, 2007.
- Tilbury, D. M., Plunkett, M. J., Felt, B. T., Wang, L., Kaciroti, N., Angulo-Barroso, R., **Shafir, T.**, Tardif, T. Dynamic systems modeling of cortisol response in pre-schoolers using emotion and activity inputs. Talk presented at the IEEE International Conference on Development and Learning, Monterey, CA, August, 2008.
- Shafir, T.**, He, Y., Yi, Y., Angulo-Barroso, R., Miller, A., Olson, S. L., Kaciroti, N., Tardif, T. Children's facial and motor emotional expressions in emotion regulation. Poster presented at the IEEE International Conference on Development and Learning, Monterey, CA, August, 2008.
- Grabell, A. S., Olson, S. L., Kessler, D. A., Felt, B. T., Miller, A., **Shafir, T.**, Kaciroti, N., Tardif,

T. Neurobiological roots of emotion dysregulation and behavior problems. Poster presented at the annual convention of the Association for Psychological Science, San Francisco, CA, May, 2009.

Kessler, D. A., Nguyen, T. L., Felt, B., Wang, L., Olson, S. L., **Shafir, T.**, Kaciroti, N., and Tardif, T. Inhibitory control is related to cortisol response to a disappointing task in Chinese and American preschoolers. Poster presented at the annual convention of the Association for Psychological Science, San Francisco, CA, May, 2009.

Mickey, B. J., Zhou, Z, Hsu, D. T., Langenecker, S. A., Love, T. M, Peciña M., **Shafir T.**, Hodgkinson C. A., Goldman D., Zubieta J-K. Neural Responses to Affective Stimuli are Modulated by NPY Genotype. Poster Presented at the annual meeting of Society of Biological Psychiatry, New Orleans, LA, May 2010.

Peciña, M., Mickey, B. J., Hsu, D. T., **Shafir T.**, Shen, P. H., Hodgkinson, C. A., Wright, S., Langenecker, S. A., Goldman D., Zubieta J-K. D2/D3 Receptor Polymorphisms Predict Amygdala and Subgenual Cingulate Reactivity to Positive and Negative Emotional Stimuli. Poster Presented at the annual meeting of Society of Biological Psychiatry, New Orleans, LA, May 2010.

**Shafir, T.**, Taylor, S., Langenecker, S., Zubieta. J-K. Move happy and be happy: effects of dynamic body expressions of emotions on brain activation and affective state. Poster presented at the annual meeting of Society for Neuroscience, San Diego, CA, November 2010.

Hsu, D., Mickey, B., Langenecker, S., Heitzeg, M., Love, T., Wang, H., Kennedy, S., Pecina, M., **Shafir, T.**, Hodgkinson, C., Enoch, M. A., Goldman, D., Zubieta, J-K. Blood-Oxygenation-Level Dependent Signal Responses to Emotional Stimuli Depend on Variations in rs110402 within the Corticotropin-Releasing Hormone Receptor Gene. Poster presentation at the annual meeting of the American College of Neuropsychopharmacology (ACNP) Miami Beach, FL December 2010.

Pecina, M., Mickey, B., Wang, H., Love, T., Hong, SP., Langenecker, S., Hsu, D., **Shafir, T.**, Villafuerte, S., Wright, S., Goldman, D., Zubieta, J-K. Dopamine D2 Receptor Polymorphism Modulates Prefrontal Function and Connectivity During Reward and Emotion Processing. Poster presentation at the annual meeting of the American College of Neuropsychopharmacology (ACNP), Miami Beach, FL, December 2010.

**Shafir, T.**, Langenecker, S., Taylor, S., Zubieta. J-K. Effects of Emotional Movements: Executed, Imagined, and Observed, on Brain Activation and Affective State. Poster presented at the annual meeting of the American Dance Therapy association, Minneapolis MN, October 2011.

Hsu, D. T, Mickey B. J, Langenecker S. A, Heitzeg M. M, Love T. M, Wang H, Kennedy S. E, Peciña M, **Shafir T**, Hodgkinson C. A, Enoch M-A, Goldman D, Zubieta J-K. 2011. Variations in the corticotropin-releasing hormone receptor gene (rs110402) influence BOLD signal responses during emotional stimulus processing. Oral presentation at the annual meeting of Society for Neuroscience, Washington, D.C, November 2011.

**Shafir, T.**, and Tsachor R. Collaborative Research: Practical steps for transforming your clinical and educational insights into research through teamwork. Oral presentation at the annual meeting of the American Dance Therapy association, Chicago IL, November 2014.



**Shafir, T.**, and Tsachor R. Something in the Way She Moves... Unique Sets of Movement Characteristics are Associated with and Enhance Specific Emotions. Poster presented at the annual meeting of the International Convention of Psychological Science (ICPS), Amsterdam, The Netherlands. March 2015.

Shaiovitz, N., Lev Wisel, R., **Shafir, T.** Body Image Has No Association with Self-Esteem in Moderately Religious, but Positive Correlation with Self-Esteem in Non-Religious and Very Religious Single Women. Poster presented at the annual meeting of the International Convention of Psychological Science (ICPS), Amsterdam, The Netherlands. March 2015.

Hsu, D., Mickey, B., Langenecker, S., Heitzeg, M., Love, T., Wang, H., Kennedy, S., Pecina, M., **Shafir, T.**, Hodgkinson, C., Enoch, M. A., Goldman, D., Zubieta, J-K. (2015). Allelic variation in the corticotropin-releasing hormone receptor 1 (CRHR1) gene influences fMRI signal responses to emotional stimuli. Society of Biological Psychiatry, Toronto, Canada, May 2015.

Bernstein, R., **Shafir, T.**, Tsachor, R., Studd, K., & Schuster, A. Laban movement analysis using Kinect. Paper accepted to the ICACII 2015: International Conference on Affective Computing and Intelligent Interaction, Paris, France, May 18-19, 2015.

Bernstein R, **Shafir T**, Tsachor R, Studd K, Schuster A. Multitask Learning for LMA. Oral presentation at MOCO'15 – 2nd International Workshop on Movement and Computing Intersecting Art, Meaning, Cognition, Technology. Vancouver, Canada. August 14-15, 2015.

**Shafir, T.** and Tsachor, R. Developing Movement Biofeedback Technology to supplement DMT. Poster presented at the annual meeting of the American Dance Therapy association, San Diego CA, November 2015.

Tsachor, R. and **Shafir, T.** Body/Mind Connection: Clinical Implications of New Research into Emotion Recognition from Movements, Using Laban Analysis. Workshop presented at the annual meeting of the American Dance Therapy association, San Diego CA, November 2015

Tsachor, R. and **Shafir, T.** Motion/Emotion from Text: Applying Current Emotion Theory & Research to Acting with the Alexander Technique. Oral presentation at the Freedom to Act conference, New York, NY, January 2016

Spitzer, N., **Shafir, T.**, & Werner, P. Emotion recognition from facial and bodily expressions by healthy elderly. Poster presented at the bi-annual conference of Israel Gerontological Society, Tel Aviv, Israel, January 2016

Tsachor, R. and **Shafir, T.** The Italian Dance Manual as a source of Action for Theatre. Poster presented at the Historical Dance Symposium, Burg Rothenfels, Germany, May 2016

**Shafir, T** and Angulo Barroso, R. Long-term developmental outcomes of former iron deficiency in the motor domain. Oral presentation at the Nutrition and Child Development: Through the Lens of Iron symposium. Ann Arbor, MI, USA, June, 2016

**Shafir, T** and Tsachor, R. Movement Choices Influence Emotions: Research and Application in DMT. Oral presentation at the European Association Dance Movement Therapy Conference, Milano, Italy, October 2016.

Naor, C., Federman, D., **Shafir, T.**, Gilor, A., Bliman-Bauman, J. and Tsachor, R. Personality traits and their associated movement patterns as depicted by Laban Motor Elements. Poster presented at the annual meeting of the American Dance Therapy association, Washington D.C., November 2016.

Gilor, S., **Shafir, T.**, Federman, D., Bliman-Bauman, J., Naor, C. and Tsachor, R. Motor characteristics of authentic, unrestricted bodily emotional expressions of happiness and sadness. Poster presented at the annual meeting of the International Convention of Psychological Science (ICPS), Vienna, Austria, March 2017.

Tsachor, R and **Shafir, T.** From Movement Analysis to Moving Emotions: Applying the Frontiers of Movement Research to Therapy and Education. Workshop presented at the Moving from Within conference, Ammersee, Germany, June 2017.

Bliman-Bauman, J., **Shafir, T.**, Rosenblum, S., Naor, C., Gilor, S., Federman, D. and Tsachor, R. Relationships between handwriting process and product characteristics and whole-body movement patterns during emotional expressions. Poster presented at the Movementis 2017: World Conference on Movement and Cognition, Oxford, UK, July 2017.

Tsachor, R and **Shafir, T.** Motion/emotion: Integration Science and Awareness in Practice. Oral presentation at the Alexander Technique International Annual Conference, Seattle, WA, USA, October 2017.

Meltzer, A., **Shafir, T.**, and Tsachor, R. Emotion recognition from movement: which Laban components are associated with each emotion? Poster presented at the annual meeting of the American Dance Therapy association, San Antonio, Texas November 2017

**Shafir, T.** Brain and Behavior in Movement-Emotion Interaction. Oral presentation at the 26<sup>th</sup> Israel Society for Neuroscience Annual Meeting, Eilat, December 2017.

Cheshin, A. and **Shafir, T.** Is it the Face or the Body: The Effects of Body and Face Emotional Displays on Emotion Recognition and Negotiation. Poster presented at the fourth Israel Organizational Behavior Conference (IOBC), Tel Aviv, Israel, January 2018.

Meltzer, A., **Shafir, T.**, and Tsachor, R. Emotion recognition from movement: Associating specific motor components with basic emotions. Poster presented at the 14<sup>th</sup> Karniel Computational Motor Control Workshop (KCMCW), Beer-Sheva, Israel, March 2018.

Tsachor, R and **Shafir, T.** An LMA Methodology for statistical analysis of complex movement. Oral presentation at the LABAN 2018 International Conference, New York, NY, USA, May-June 2018.

**Shafir, T.** and Tsachor, R. Measuring brain mechanisms underlying dance-therapy: past & future directions. Invited oral presentation at the 3ed International Mobile Brain/Body Imaging Conference, Berlin, Germany, July 2018.

Tsachor, R. and **Shafir, T.** Connecting Motion and Emotion: Implications for Alexander Technique of Current Emotion Science. Workshop presented at the 11<sup>th</sup> International Alexander Technique World Congress, Chicago, IL, USA, July 2018.

Tsachor, R. P. and **Shafir, T.** How the Laban/Bartenieff movement taxonomy supports research and intervention. Oral presentation at Movementis 2019: World Conference on Movement and Cognition, Tel Aviv, Israel, July 2019

Tsachor, R. P. and **Shafir, T.** Grounding Acting in Current Emotion Science. In R. P. Tsachor (Panel Chair), *Intersectional Frontiers in Theatre Movement and the Sciences*. At ATHE 2019. [*ibid.*] Orlando, USA. Aug 2019.  
[https://cdn.ymaws.com/www.athe.org/resource/resmgr/2019\\_conference/2019\\_docs/athe-conferenceprogram2019-s.pdf](https://cdn.ymaws.com/www.athe.org/resource/resmgr/2019_conference/2019_docs/athe-conferenceprogram2019-s.pdf)

Seifert, T. and **Shafir, T.** The relationship between proprioception acuity, emotion regulation and emotional empathy. Poster presented at the annual meeting of the American Dance Therapy association, Miami, Florida, October 2019.

Cheshin, A. and **Shafir, T.** The way you walk or that smile on your face? The interpersonal effects of emotional displays via face and body. Oral presentation at the ISRE (International Society for Research on Emotion) annual conference, Los Angeles, CA, USA, July 2022

#### **MEMBERSHIP IN PROFESSIONAL SOCIETIES**

1996 – 2013	Society for Neuroscience
1996 – 2006	North American Society for the Psychology of Sport and Physical Activity
1997 – 2012	American Council on Exercise
2007 – present	American Dance Therapy Association
2008 – present	University of Michigan Depression Center
2009 – 2012	Organization for Human Brain Mapping
2011 – 2020	Association for Psychological Science
2017 – 2018	Israel Society for Neuroscience
2017 – 2018	Israel Society of Biological Psychiatry
2019-present	Anat Baniel Methode: Neuromovement
2021-present	YAHAT: Israel society for arts therapies