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Biodanza and Empirical Science

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Abstract Volume

International Biodanza Federation (IBFed)

Sub-Commission

“Biodanza, Science and Research —

International Biocentric Research Academy

(IBRA - BIONET Research Network)

BIONET

2nd BIONET SYMPOSIUM

Biodanza and Empirical Science

Date: Friday, 24 July 2026

Time: Latvia: 3.00–5.00 pm, Germany: 2.00–4.00 pm | Argentina: 9.00 am–11.00 pm

Venue: Lizari, Latvia (hybrid event – online participation available to all)

Access link: <http://www.bionet-research.com> (in-person attendance in Latvia)

Organised by: the IBFed Methodological Commission, ‘Biodanza Science and Research’ Sub-Commission, in collaboration with the International Biocentric Research Academy (IBRA) – (Myriam Sofia Lopez, Emilse Pola, Marcus Stueck)

Programme

15:00–15:10	OPENING Rolando Toro and the empirical sciences <i>Myriam Sofia Lopez</i> Coordinator, IBFed Methodological Commission
15:10–15:30	PRESENTATION Biodanza and the Importance of Resilience in Times of War – Report on a Study in Israel <i>Gila Cohen Zilka</i> Bar-Ilan University, Israel
15:30–15:50	PRESENTATION Pilot study in Prague on the psychoneuroimmunological effects of Biodanza. Based on the theory of relative biocentric health <i>Marcus Stueck, Katerina Strnadová, Denis Mainz, Sebastian Mueller-Haugk</i> International Academy for Biocentric Research (IBRA)
15:50–16:00	PRESENTATION Biodanza and Language – Presentation of a new publication <i>Katerina Strnadová</i> University of West Bohemia in Pilsen
16:00–16:10	BREAK 10-minute break
16:10–16:30	LECTURE Physiological effects of Biodanza: An overview of the current state of research <i>Dr Hans-Ulrich Balzer</i> International Academy for Biocentric Research (IBRA) / Chroniomar
16:30–16:50	PRESENTATION Effectiveness of a Minotaur Biodanza workshop in Latvia for reducing anxiety: Results of an intercultural pilot study with a before-and-after comparison <i>Marcus Stueck, Anetė Raykova, Vineta Greaves, Katerina Strnadová, Denis Mainz, Oscar Imbernoon, Sebastian Mueller-Haugk</i> International Academy for Biocentric Research (IBRA), University of West Bohemia, Plzeň
16:50–17:00	CLOSING The work of the IBFed Sub-Commission on Biodanza and Science <i>Emilse Pola</i> IBFed Sub-Committee on ‘Biodanza and Research’

The work of the IBFed Sub-Committee on Biodanza and Science

2nd BIONET Symposium: Biodanza and Empirical Science

Emilse Inés Pola – Representative of the IBFed Sub-Committee on Science and Research

“Empirical research seeks to understand how life unfolds its affective intelligence when it finds the conditions to express itself.”

It is an honour for me to represent the Sub-Committee on Science and Research of the International Biodanza Federation at this symposium, which is dedicated to empirical science.

For a long time, it was believed that science and lived experience belonged to different worlds: research measured, analysed and explained, whilst experience quietly transformed people's lives. Today we know that this distinction is no longer sufficient to understand the complexity of human beings. Contemporary science invites us to integrate disciplines – biology, psychology, education and the social sciences – and Biodanza emerged with precisely this integrative mission.

Rolando Toro developed a theoretical model based on the biocentric principle, which establishes life as the fundamental point of reference for all human action. From this perspective, lived experience (*vivencia*) is not an isolated subjective event, but a biological process that reorders identity, strengthens emotional well-being and expands our capacity for connection. In this way, we encounter inspiring approaches, such as that of Marcus Stueck, who invites us to practise a ‘complete science’ capable of integrating experience, qualitative and quantitative research, the laboratory and practice.

We invite facilitators, educators, researchers and professionals from the fields of health, education and the humanities who wish to explore the physical, biological, psychological, interpersonal and behavioural phenomena arising from the practice of Biodanza to join us on this journey – for research is not a solitary act, but an act of community and an act of love for life.

Thank you very much.

Biodanza and the Sense of Resilience in Times of War

Zilka, C.G., & Tempel, S. (2024). *Biodanza and the sense of resilience in times of war*. *Journal of Bodywork and Movement Therapies*, 40, 2136–2146. <https://doi.org/10.1016/j.jbmt.2024.10.054>

Abstract

Background

War affects many aspects and processes and presents challenges for everyone, albeit in different ways for different individuals and population groups. Given the importance of developing resilience and deepening the sense of self-efficacy during a war amidst a complex, unstable and changing reality, a large-scale study was conducted in Israel in 2023 during the ‘Iron Swords’ war. The aim of the study was to investigate the mechanisms by which Biodanza leads to increased resilience, affectivity, vitality and morale in times of war.

Method

This was a study employing a mixed-methods approach, utilising a questionnaire comprising both closed-ended and open-ended questions. A total of 112 dancers took part (85 women, 76 per cent), with experience of Biodanza ranging from one to over 15 years ($M = 7$, $SD = 5$). Closed-ended questionnaires were used to assess resilience and coping strategies, vitality, a sense of belonging versus alienation, and motivation, using established instruments. Open-ended questions invited participants to reflect in writing on the movement-music encounter and the ‘vivencia’ experience at both a physical-organic and a social-emotional level.

Results

The participants reported significant positive effects from Biodanza during the war, as summarised below.

Findings	Agreement (%)
The interpersonal interaction in Biodanza had a positive effect on the participants	79%
Biodanza helped them to cope with the war	76 %
Experienced greater emotional intensity and vitality during the sessions	63%

The qualitative analysis identified recurring themes relating to physiological regulation through movement (physical relaxation, vitality, ‘letting go’) as well as to improved morale, emotionality and vitality (human connection, emotionality, sense of belonging, emotional regulation, optimism). Other experiences included comfort, eye contact, hugs, dancing together and a return to normality; participants regarded emotional connection and physical interaction as key sources of vitality and hope.

A difference in the level of resilience was observed between experienced dancers and those who had been practising Biodanza for less than three years. Using random forest, regression tree and linear regression models, the duration of Biodanza practice emerged as a key factor influencing resilience: the longer the practice, the higher the level of resilience.

Maintaining mental wellbeing – biocentric areas of action

When considering the results in the context of the protective factors for mental wellbeing formulated by Stueck (2021), the study found that, in times of war, Biodanza covered six biocentric areas of action:

- Maintaining loving communication – loving interpersonal interaction (hugs, eye contact, caresses, rocking) as a factor in resilience.
- Maintaining an alert physicality – exercises to boost life energy, vitality and grounding, including exercises relating to the earth element and synergetic walking.
- Inner communication and self-efficacy – exercises to strengthen personal and collective identity as well as self-regulation.
- The meaning of life and the expression of life's potential – a sense of autonomy, belonging and strengthened morale.
- Expansion of consciousness – a return to routine and optimism, as well as a tangible connection to an inner driving force.
- A biocentric lifestyle – participation, engagement, and circles of connection and belonging that strengthen self-esteem.

A model for creating 'Vivencias' in times of war and crisis

In times of war and crisis, it is desirable to create as safe a space as possible; to speak simply and clearly, as stress impairs patience, mood and the ability to follow others; to be mindful of others and oneself within the Vivencia space; and to relieve tension and anxiety through grounding exercises, breathing exercises and exercises that open up the arms and chest. In each phase, the Vivencias are adapted to suit the group's well-being:

- Phase 1 – Physical Release
- Phase 2 – Letting go of emotions
- Phase 3 – Sense of security
- Phase 4 – Resilience and rebirth

Overall, the results suggest that, in times of war, Biodanza was perceived as an important coping resource that provided emotional resources supporting psychological recovery, resilience, affectivity, vitality and morale.

Pilot study in Prague on the psychoneuroimmunological effects of Biodanza

Based on the theory of relative biocentric health

Marcus Stueck, Kateřina Strnadová, Denis Mainz, Sebastian Mueller-Haugk

*International Biocentric Research Academy (IBRA), Germany · University of West Bohemia in Plzeň ·
Plauen University of Applied Sciences*

Abstract

This controlled before-and-after pilot study investigated the psychoneuroimmunological and biocentric effects of a multi-day Biodanza workshop (Prague, March 2024) on quality of life, thereby closing the methodological gap caused by the absence of comparison groups in previous Biodanza studies. An intervention group (CZ, $n = 44$) completed the workshop and was compared with a waiting-list control group (CZC, $n = 17$), which was studied during the same period. Biocentric quality of life was measured using the Biocentric Health Questionnaire (BSQ 1.0, 46 items; Stueck & Mueller-Haugk, 2024), which operationalises the Relative Biocentric Health Theory (rbHT; Stueck, 2026). In addition, concentrations of testosterone, cortisol and secretory immunoglobulin A (sIgA) in saliva were measured before and after the intervention as psychoneuroimmunological stress and immune markers.

The difference values (post minus pre) were analysed using Wilcoxon signed-rank tests for changes within the group and Mann–Whitney U tests for comparisons between groups. On the BSQ, the intervention group showed significant improvements from pre- to post-intervention in terms of critical thinking and interpersonal connectedness (both $p = 0.009$), whilst four further variables – inner orientation, acceptance of life transitions, perception of life situation and goal orientation – differed significantly between the groups ($p = 0.003$ – 0.008), although they did not reach statistical significance within the intervention group alone. The control group showed no significant changes on the BSQ.

Salivary biomarkers provided consistent evidence of a psychoneuroimmunological effect: testosterone levels fell significantly in the intervention group (median $\Delta = -174$ pg/ml), whilst they remained virtually unchanged in the control group ($+5.2$ pg/ml); cortisol remained stable in the intervention group ($+0.02$ µg/dl), but fell significantly in the control group (-0.14 µg/dl); and sIgA increased in the intervention group ($+30$ ng/ml), whilst it decreased in the control group (-42 ng/ml). All three group differences were highly significant ($p < 0.001$).

Taken together, these results provide initial controlled evidence that a brief Biodanza intervention induces measurable psychological and psychoneuroimmunological changes – reduced physiological stress, altered cortisol regulation and improved mucosal immune function – as well as selective improvements in biocentric quality of life. Limitations include the absence of randomisation, varying group sizes and the lack of correction for multiple tests; the results should be interpreted as exploratory and hypothesis-generating.

Keywords: *Biodanza, psychoneuroimmunology, biocentric health, salivary cortisol, testosterone, secretory IgA, controlled before-and-after design, Wilcoxon test, Mann-Whitney test*

Language in Biodanza

Kateřina Strnadová, Ph.D. — Institute of Applied Linguistics, University of West Bohemia in Pilsen

Introduction

‘Language in Biodanza’ is a monograph that explores the linguistic dimensions of the Biodanza system developed by Rolando Toro. Although Biodanza is generally understood as a non-verbal practice based on music, movement and vivencia, language permeates the entire process – in theoretical explanations, verbal introductions to dances, discussions following vivencias, written study materials and the international dissemination of the system across cultures and languages. The aim of the book is to examine the role and potential of language in Biodanza and to demonstrate that verbal and non-verbal communication are intertwined forms of meaning-making.

The motivation for this research arose from the author’s dual professional experience as a Biodanza facilitator and as a university lecturer, who, within the framework of the ‘Scaffolded Language Emergence’ (SLE) approach developed by Donald Kiraly, focuses on embodied language learning. The book addresses three research perspectives: What role does language play in Biodanza? How is participants’ communication influenced by the practice of Biodanza? What potential does Biodanza hold for language teaching?

Theoretical framework

This monograph analyses the linguistic portfolio of Biodanza, including the origins of the term, its international spread across more than forty countries, and the multilingual dissemination of Rolando Toro’s work. A key contribution is the distinction between silence, spoken language and written language in Biodanza: silence is examined through concepts such as the limbic-hypothalamic system, mirror neurons and proto-language; spoken language through oral introductions, poetic expression and the facilitator’s voice; and written language through study materials, monographs and academic publications.

Research findings

The second part presents qualitative research findings gathered in the Czech Republic (2022–2023) amongst students at the first Czech Biodanza school. The findings show that, whilst the participants regard language as important, they consider it subordinate to ‘vivencia’: verbal explanations are valued when they offer reassurance, guidance and emotional resonance, but excessive verbalisation can hinder entry into the experiential state. The study further suggests that Biodanza can influence participants’ everyday communication – through greater emotional expressiveness, increased authenticity and a stronger ability to articulate feelings – and that it can support foreign language learning by boosting motivation and fostering receptive and communicative skills when vivencias are conducted in a foreign language.

Contribution and Conclusion

The originality of ‘Language in Biodanza’ lies in bringing Biodanza into dialogue with linguistics and language teaching – areas that have received little attention in Biodanza research to date. This monograph demonstrates that Biodanza is neither exclusively non-verbal nor primarily verbal, but rather a dynamic system in which language and embodiment continuously influence one another – an understanding of communication that encompasses silence, gestures, rhythm, poetic imagery, spoken interaction and written reflection.

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Biodanza Studies and Physiology

H.-U. Balzer

Abstract

In both partner dancing and, in particular, the practice of Biodanza, emotional bonds between dance partners are not only desirable but also form the basis for the success of Biodanza. Synchronisation processes at the psychophysiological level between the dance partners play an important role in this. The human autonomic nervous system, particularly the skin, reflects a range of important information: the autonomic-emotional response (skin resistance), the autonomic-nervous response (skin potential) and the muscular response (EMG). Using the smard-watch system, these responses can be continuously recorded at a sampling rate of 10 Hz.

Using chronobiological regulatory diagnostics (CRD, Balzer 2000), an analysis is carried out of the regulatory processes of the parameters under investigation, as well as the intra- and inter-individual synchronisation between the dance partners. It is evident that a high level of intra-individual synchronisation can occur both during high arousal and during deep relaxation (inner harmony).

During an Islamic meditation session, a synchronisation process was observed in four participants during the meditation phases. Intra-individual synchronisation behaviour was also observed whilst falling asleep during a mini-nap, during an increase in pendulum amplitude during a live musical performance at the bedside of a patient in the oncology department of Vienna General Hospital (AKH), and during the occurrence of high correlation and regulation values in both partners during the Biodanza 'vivencia' session. To some extent, good synchronisation processes were also observed in a 'Water Trance' study.

In summary, the smard-watch system, in conjunction with the analysis of regulatory processes, enables the detection of both intra- and interpersonal synchronisation among participants, as well as the detection of states of relaxation and/or trance.

Effectiveness of a Biodanza Minotaurus workshop for anxiety reduction

Types of anxiety coping, state-trait anxiety and social desirability in an intercultural before-and-after pilot study

Abstract

This intercultural pilot study investigated the effectiveness of a Biodanza Minotaurus workshop – a specialised, anxiety-focused adaptation of the Biodanza method developed by Toro (2010) – in reducing anxiety, compared with a standard Biodanza workshop. The Minotaurus approach targets four thresholds of anxiety: fear of love, fear of life, fear of the primitive, and fear of self-expression. Using an intercultural before-and-after design without a traditional control group, N = 83 participants were assessed before and after their respective workshops: an experimental group in Latvia (LV, n = 39), who completed the Minotaurus workshop, and a comparison group in the Czech Republic (CZ, n = 44), who completed a standard Biodanza workshop.

The main assessment tool was the State-Trait Anxiety Inventory (STAI; Spielberger et al., 1970) for measuring dispositional anxiety, supplemented by the Social Desirability Scale (SDS-CM; Lück & Timaeus, 1997) for measuring the tendency towards socially desirable response behaviour or anxiety denial. By cross-tabulating both dimensions (high/low), four anxiety coping styles were derived according to Byrne (1961) / Krohne (1989): Non-defensive (low anxiety · low denial), Repressor (low anxiety · high denial), Sensitiser (high anxiety · low denial) and Highly Anxious (high anxiety · high denial). In addition, the Minotaurus Anxiety Questionnaire (Toro, 2010), biocentric health indicators (BSQ 1.0) and – in the LV group only – physiological measurements (blood pressure, pulse) were recorded.

Both groups showed significant reductions in anxiety, with more pronounced and broader effects in the CZ group: seven out of twelve variables (58 per cent) changed significantly in the overall sample, compared with only three variables (25 per cent) in the LV group alone. In the LV group, trait anxiety (STAI) fell to a highly significant extent ($p = .001$), as did fear of love ($p = .009$); social desirability (SDS-CM) did not change significantly – an indication that the decline in STAI cannot be explained by increased denial, but rather points to a genuine reduction in anxiety. In a direct group comparison of the magnitude of change, only social desirability differed significantly ($p = .048$); no specific Minotaurus add-on effect could be demonstrated for any other variable.

With regard to anxiety coping styles, there was a significantly different distribution between the LV and CZ groups prior to the intervention ($\chi^2(4) = 10.80$, $p = .029$), which no longer existed after the intervention ($\chi^2(4) = 2.03$, $p = .730$) – the groups thus converged in their distribution of coping styles. In the LV group, the marginal distribution shifted initially in a counterintuitive direction: the proportion of ‘sensitisers’ fell (14 → 9), whilst the proportion of ‘high-anxiety’ individuals rose slightly (2 → 4); ‘non-defensive’ (19) and ‘repressors’ (4) remained stable. In the CZ group, by contrast, the shift proceeded in the opposite, generally more favourable direction: the number of ‘repressors’ decreased significantly (9 → 3), the number of ‘sensitisers’ increased (4 → 7), and the number of ‘highly anxious’ individuals remained stable (6 → 5) – reflecting less repression and greater emotional openness.

An activation hypothesis is proposed to explain the apparent contradiction in the LV group – a decrease in trait anxiety alongside a shift towards more ‘highly anxious’ individuals: The

confrontational Minotaur exercises may bring latent, previously unconscious or repressed anxiety to the surface in the short term (leading to a temporary increase in defensiveness), as a first step towards genuine processing rather than as a negative outcome. This interpretation is supported by the significant decline in STAI scores whilst social desirability remained stable (no increase in denial). However, as only marginal distributions are available, and no individual longitudinal data, it cannot be confirmed whether the same individuals changed type; an equally plausible alternative explanation is simply sensory overload or overstimulation caused by the confrontational exercises.

Overall, the results support the general effectiveness of Biodanza as a body-oriented intervention for reducing anxiety; however, they do not indicate any independent added benefit of the Minotaurus method compared with a standard workshop – on the contrary, the standard group even showed a more consistent shift towards less repression in terms of coping style. As the first scientific study on the Minotaurus format, these findings should be regarded as exploratory and hypothesis-generating; future randomised controlled trials with individual longitudinal data are needed to distinguish between activation and overstimulation effects.

Keywords: *Biodanza, Minotaurus, anxiety reduction, STAI, social desirability, anxiety coping styles, activation hypothesis, before-and-after design, cross-cultural comparison*