

LIFE Questionnaire Development
Development and factor analysis of the Levang Inventory of
Family Experiences: A new way to operationalize and validate
Pesso Boyden System Psychomotor
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Abstract

It is widely accepted that interactions in childhood have profound effects on the individual well into adulthood. This premise is the bedrock of Pesso Boyden System Psychomotor (PBSP) theory and frames this study. The Levang Inventory of Family Experiences (LIFE) has seven content scales that measure perceived fulfillment of five basic needs plus two socialization constructs that Pesso identified as critical for childhood development. The five basic needs are Place, Nurturance, Support, Protection and Loving Limits. The two socialization scales are the Holes in Roles and the Pilot. To measure these seven PBSP constructs, PBSP subject matter experts first operationalized these terms by developing a 182-item question bank. These items were administered to 75 individuals; responses were provided on a 1-4 Likert scale. Data analysis for inter-item reliability was calculated using Cronbach's alpha (α) coefficient for each of the seven PBSP scales. To revise the LIFE, items were removed following a revision protocol until each scale had either 20 or 10 total questions. This revised assessment of 140-items was then given to a separate pool of 100 individuals. The revision protocol is provided in this paper. An Exploratory Factor Analysis (EFA) was conducted and revealed an underlying factor structure consistent with PBSP theory. Additionally, inter-scale correlations were consistent with PBSP theory: the five Basic Needs scales had inverse correlations with the Holes in Roles ranging between $-.61$ to $-.44$. The Pilot scale also positively correlated with the Basic Needs scales, which is consistent with PBSP theory. This study provides an initial picture of the psychometric properties of the LIFE and shows preliminary construct validity evidence suggesting that the LIFE is a reliable measure of PBSP concepts. Future research should focus on establishing criterion validity, enhancing construct validity, and using the LIFE in longitudinal developmental psychology research studies.

Keywords: assessment, diagnostic tools, childhood development, basic needs, PBSP Theory

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Introduction

PBSPⁱ is based on the widely-accepted notion that interactions in childhood have a major impact on adult perspectives of the world; this is apparent in research of caregiver attachment

styles (Fraley, Roisman, Booth-LaForce, Owen, & Holland, 2013; Hudson & Rapee, 2001), as well as the increased risk for depression in victims of childhood trauma (Heim, Newport, Mletzko, Miller, & Nemeroff, 2008). Furthermore, for a child's ego to properly develop and for the child to be and become his or her true self, there are essential needs that must be provided by parental figures during childhood.

Pesso referred to these as the Basic Needs, of which he posited five: Place, Nurturance, Support, Protection, and Loving Limits. PBSP theory postulated that the degree to which these needs are met or unmet in childhood had an impact on one's functioning later in life. PBSP suggested that significant unmet needs can lead to depression, anxiety, generalized distress, as well as increased levels of shame – largely due to challenges in realizing one's true self and ill-developed coping skills for navigating the world (Pesso & Crandall, 1991). The Basic Needs are described as:

Place – The provision to a child of a literal Place and then symbolically in the lives, hearts and minds of the parents. That first literal Place being the mother's womb. The provision of Place recognizes the value of the child in having a right to exist and belong in the world. Having a Place means a right to “be” in the universe. It implies the child is being “seen” and valued for whom he/she is. Without Place the individual has difficulty putting down roots and lacks security in attachments.

Nurturance – The act of caring for infants' needs that literally sustain life and keep them alive – such as nursing, feeding, grooming, washing and caressing. When nurturance needs are met, an individual can feel full and satiated inside his or her body, rather than feeling a sense of hollowness and emptiness inside. In later childhood, this translates or transposes into symbolic feeding and grooming in a way that psychologically sustains life such as valuing, appreciating, affirming and admiring.

Support – The act of supporting and carrying an infant that is too young to hold itself upright and move about. The arms and laps of the parents provide this literal Support. In later years, this translates into psychological support, as in “having your back”, or standing behind and being there for the child. When support is given, children and adults learn to trust others can be there for them and they can ask for help.

Protection – The act of literally defending the soft vulnerability of an infant against physical injury is the basic need of Protection. Parents shield their infant from possible contact or impact with hard or dangerous surfaces. In later years, this translates into the parent psychologically defending or protecting their child, as in blocking others' attempts at verbal or psychological injury.

Loving Limits – Through Loving Limits children learn that there are boundaries and limits in life. The parent physically restrains or constrains the infant or older child from doing damage to him/herself or others. The adolescent requires help to contain and navigate their nuclear energies, which are the capacity to create (sexuality) and the capacity to destroy (anger).

It is important to note that Basic Needs are met in a developmental sequence, similarly to Maslow's hierarchy of needs. That is, first there must be satisfaction on a Literal basis and secondarily on a Symbolic level. As these needs become fulfilled by parents or significant caregivers, they become internalized so that the individual can meet his or her own needs in adulthood. Symbolic interactions are imperative as they have an impact on ego development and the child's increasing necessity of knowing how to navigate in the broader world.

In addition to the Basic Needs, there are two additional concepts that frame PBSP's understanding of how childhood and adolescent experiences influence individuals into adulthood. Pesso referred to these as the Holes in Roles and the Pilot.

Holes in Roles - Develops when a child's compassion and imperative for justice is awakened too early without redirection. For example, when a child learns that his or her parent was physically abused as a child, a natural response is to feel compassion and attempt to comfort and heal. However, this is an impossible task for the child; indeed, a young child cannot right the wrong that the parent experienced as a child, and yet the child, without redirection, will continue to psychically attempt to take on this responsibility for their parent's needs. The child's energy is focused away from his/her own appropriate self-development to now taking on the burden of parenting the parent and a longing for justice for the injustice that has occurred. This focus results in an inability to receive caretaking. As an adult, the outcome is over-caretaking where one places themselves in an omnipotent position of feeling that only they can rescue or save others. This leads to feelings of inadequacy and, ultimately, exhaustion.

Pilot - One's ability to think and reason in a mature, reliable and consistent manner. The Pilot detects what one is feeling, thinking, experiencing, and what actions are in their best interest. The Pilot is like a unique, separate aspect of our self that looks upon us and assesses the what and why of our actions. To have a strong Pilot, one needs to have had their inner world of interests, talents, feelings, values, and dreams seen, validated, and acknowledged by parents, caregivers, and loved ones. If this did not occur, then we may not know who we truly and authentically are. This leads to a cloudy or murky picture of our self and prevents us from seeing the world accurately, making good decisions, or being intimate with others.

Current empirical research on PBSP is limited, but promising. In a 2005 study in Prague, researchers used fMRI before and after a two-day PBSP treatment program (Horacek et al., 2005; Perquin, 2004). This pilot study, with only seven participants, lacked a control group. Still, after two sessions of PBSP subjects had an "increase of activation in anterior cingulate and thalamus and decrease in activation of temporal and insular cortex" (Horacek et al., 2005). This finding is important as Hamner, Lorberbaum, and George (1999) suggested that the anterior cingulate is a brain region involved in fear conditioning and serves as an important function to modulate fear responses. Therefore, treatment that can modify exaggerated hyperarousal states connected to negative condition states may be therapeutically beneficial. More specifically, PBSP could prove helpful in the treatment of patients diagnosed with Post Traumatic Stress Disorder (PTSD) as such individuals show a decrease in cerebral blood flow to the anterior cingulate (Hamner et. al, 1999; Lanius et al., 2002; Shin et al., 1999). It should be noted that Eye Movement Desensitization and Reprocessing (EMDR) therapy for PTSD has also shown an increased activation of the anterior cingulate (Bocchia, Piccardi, Cordellieri, Guariglia, & Giannini, 2015; Levin, 1999;) and that it is possible to accurately diagnose PTSD using pre-whitened, resting state fMRI data (Christova, Engdahl, & Georgopoulos, 2015). Clinical testing has also been performed to see the effectiveness of PBSP therapies. In a Norwegian study, 28 outpatients participated in PBSP group therapy (Vogel & Rokenes, 2004). Prior to treatment, the most common diagnosis of the group was depression, followed by personality disorders, and anxiety disorders. The group therapy sessions took place over the course of six months, and were either weekly or biweekly. Researchers found "Significant decreases in psychiatric symptoms and interpersonal problems" by using the following measures: Symptom Checklist-90-revised (SCL-90-R), Inventory of Interpersonal Problems-Circumplex (IIP-C) and the Structural Analysis of Social Behavior-Introject-Version (SASB-Introject)

(Vogel & Rokenes, 2004). Other studies have shown that PBSP produced improved self-concept (Slaninová & Pidimová, 2014a, 2014b) and decreased need for social desirability (Foulds & Hannigan, 1974, 1976).

As a therapeutic tool, then, PBSP would benefit from a reliable methodology that allows therapists to assess Basic Needs, the Pilot, and the Holes in Roles the child assumed responsibility for. Understanding these developmental dynamics serves a diagnostic purpose, operationalizes PBSP concepts, and helps direct specific interventions. At the same time, it provides clients unique insight and understanding of their own history as well as their current quality of life functioning. Thus, a measure of these constructs is necessary.

The Levang Inventory of Family Experiences (LIFE) was created to respond to the need for such a measure and to honor the work of Pessó and Boyden Pessó. It was Boyden Pessó's life goal to bring the theory of PBSP to parents so they might learn to satisfy the basic needs of their children. Such an application is at the heart of the LIFE. Pessó saw great value in the LIFE as a research tool, and he envisioned the LIFE and PBSP as a partnership that could go beyond the clinical setting to impact schools, families, businesses, and even society (A. Pessó, personal communication, April 28, 2016).

Thus, the authors sought to investigate whether the LIFE could reliably measure the foundational components of PBSP, provide therapists with diagnostic data to inform appropriate PBSP interventions, and spur further research.

Method

Participants. The LIFE Questionnaire was developed in three phases: Phase I: Item Development, Phase II: Scale Revisions, Phase III: Test Dimensionality. Phase I, Item Development, included pilot testing of the initial 182-item LIFE. The LIFE was administered to 75 individuals from two data pools: General Population and Clinical Population. During Phase II, Scale Revisions, 100 additional individuals representing both population pools took part in testing to revise the LIFE to 140-items. As Phase III involved only statistical processing, data pools were not required. In combination, 45 individuals were from the Clinical Population and 130 from the General Population. There were 97 female participants and 78 males. Age ranges were 18 to 71 years old. (See Table 1 Participant Demographics).

Test-Development Subject Matter Experts (SME). SME's were selected based on experience with PBSP theory, training, and use of techniques in clinical practice. Potential SME's were invited to participate in the item development at the 2014 annual PBSP trainer's meeting and were known to have expertise in PBSP, along with educational and career backgrounds in the fields of clinical psychology, counseling psychology, human development, marriage and family systems therapy, and psychometric theory and assessment development.

The SME group was led by Curtis Levang, Ph.D. who has 35-plus years of experience in clinical psychology as well as over 30-years training and experience using PBSP techniques in his therapeutic work. Additionally, Dr. Levang received advanced PBSP training directly from Al Pessó, co-founder of PBSP, and Lowjiss Perquin, M.D., former lead European PBSP trainer, to become a certified PBSP Supervisor and PBSP Trainer. Dr. Levang consulted directly with Al Pessó and Lowjiss Perquin, M.D. who gave feedback and support to the development of the LIFE. Additionally, Jim Amundson, Ph.D., Debbie Wilbur, LCSW, P.A., and Sandy Canfield, LMHC, P.A., all certified PBSP trainers, provided comments and review of the LIFE items.

This expert-level knowledge of PBSP has allowed Dr. Levang and the SME group to ensure that the initial 182 items maintained strong rational fidelity to their intended scale.

Test-Taker General Population. Individuals 18 years and older who volunteered to take the LIFE. Test takers were recruited by researchers and were offered a free interpretation session as an incentive. Test takers were not compensated financially and were informed their results would be kept confidential.

Test-Taker Clinical Population. Clients currently seeking outpatient therapy for a variety of Mood and Adjustment Disorders. Clients were required to have a Global Assessment of Functioning (GAF) score of >60, which placed them in the mild symptomology categories of the DSM-V (American Psychiatric Association, 2013). Clients were recruited by researchers and offered a free interpretation session. Clients were not compensated financially, nor were they charged for a therapy session. Clients were informed their results would be kept confidential.

Materials and Design. The LIFE is hosted by a third-party vendor, CP Consulting & Research, LLC (CPCR), a St. Paul, Minnesota consulting firm specializing in online test administration.

Administration. The LIFE was administered via a HTTPS secured website. Test-takers were emailed a weblink to enter the secure testing session. The LIFE can be administered in an un-proctored setting. An updated internet browser – such as Google Chrome, Internet Explorer, or Mozilla Firefox – and internet connection are required for test completion. Test-takers may save their progress and return to complete the inventory later. There is no time limit to complete the LIFE. The average response time for the 182-item version was 34 minutes; the average response time for the 140-item version was approximately 28 minutes.

Data Collection. Invitation emails were sent from CPCR to test-takers. Response data was collected by CPCR. The data set was prepared by CPCR and provided to the researchers in this study. All test-taker contact information was removed from the data set, thereby ensuring this information was kept confidential from researchers.

Procedures.

Phase I: Item Development. The LIFE was developed by first constructing 26 childhood belief statements for each PBSP domain, totaling 182 items. These items were written by the SMEs.

Item Development. After the initial item creation led by Dr. Levang, the SME group then revised the 182 items for grammar and psychometrically sound item construction, such as eliminating jargon and colloquial wording (Furr & Bacharach, 2008).

Scales were designed to be balanced in scoring, meaning half of the items for each scale were written so an affirmative response (Agree or Strongly Agree) would be indicative of the presence of the construct within the individual. The other half of the items for each scale were written so an affirmative response (Agree or Strongly Agree) would be indicative of the absence of the construct within the individual.

Addition of Response Validity Scale. In addition to the 182 content items, 16 items designed to assess response validity were taken from the International Personality Item Pool (IPIP) research project, an online, open-source, scientific collaborator (IPIP, 2014). The response validity scale measured fake-good response patterns by assessing for over-reporting

of unlikely virtues (Meyer et al., 2001). As reported by the IPIP (2014), average Cronbach's alpha for the unlikely virtues scale was .76 (N=3,325).

Phase II: Scale Revisions. The purpose of Phase II was to revise the LIFE to 140 items. The five Basic Needs scales and the Holes in Roles would have 20 items each, the Pilot scale and the Response Validity scale would have 10 items each. It was determined that given the nature of the Pilot and Response Validity constructs, no additional utility would be gained with 20-items over 10-items. Because the Basic Needs and the Holes in Roles are more complex multi-faceted constructs, they warranted 20-items. The revision was conducted via an initial reliability analysis of the seven LIFE scales and determining the most functional items for each scale.

Item-Reliability Analysis. As a baseline, an initial reliability analysis was conducted using Cronbach's alpha to determine the total-test reliability of the LIFE. The hypothesis was that after following the item-revision protocol, there would be an improvement in the total-test and scale reliability coefficients between the 182-item initial version and the final 140-item version.

Item Revision Protocol. Item revisions were guided by using item-total correlations as indicators of item functioning. Item-total correlations are provided in a Cronbach's reliability analysis for internal consistency using the Statistical Package for the Social Sciences (SPSS) software and following the protocols outlined in Green & Salkind (2009). The following revision protocol was followed:

1. Items with item-total correlations below .200 were eliminated. A total of 13 items were removed in this process, with no scale having more than six items removed.
2. Scales with exactly 20 remaining items after Step 1 (above) were finalized. No scale had remaining items with item-partials below .200 after Step 1.
3. Scales with more than 20 remaining items after Step 1 (above) were further revised by removing items with the lowest item-total correlations until the scale had 20 items remaining. For the Pilot and Response Validity the item count was 10. *Phase III:*

Revised Form Reliability & Dimensionality. The purpose of Phase III was to determine the dimensionality of the LIFE. This was done in two ways:

1. Compare the scale and total test reliabilities from Phase I (N=75) against the reliabilities from Phase II (N=100).
2. Analyze the factor structure of the LIFE using data from Phase I and Phase II (N=175). Note that the factor analysis only included responses from the 140-items of the LIFE.

Reliability Analysis. A second reliability analysis was performed on data collected from Phase II (N=100) to estimate the internal consistency reliability of the instrument. Reliability coefficients increased for each scale and total-test from Phase I to Phase II. The scale and inter-item reliabilities are presented in Table 2 and Table 3.

PBSP Theory and Inter-scale correlations. PBSP theory suggests that the Basic Needs are typically perceived as met in combination, not independently. That is, if a child perceives high Support, he or she likely perceives moderate or high Nurturance, Protection, Place, and Loving Limits. Therefore, inter-scale correlations should be moderate-to-strong among the Basic Needs.

Additionally, PBSP theory allows that the phenomenological etiology of the Pilot and the Holes in Roles are distinct from the Basic Needs. That is, a child could perceive the Basic Needs as met, but may experience less of the Pilot support or be placed in a role of taking

care of a parent when he or she was incapable, i.e., the Holes in Roles. Most developmental theories capitulate to perceptive overlap, however, indicating that the Pilot, the Holes in Roles, and the Basic Needs would all have some statistical overlap. Given this, inter-item correlations between the Basic Needs with the Pilot are expected to be moderate and the Basic Needs with the Holes in Roles to be inverse and moderate.

PBSP Theory and Factor Structure. PBSP theory also purports two underlying mechanisms of the human experience that shape one's perceptions of the past: physical and relational. PBSP suggests that children first develop a sense of their basic needs being met through physical interactions, this is Literal. Secondly, children later gain a sense of basic needs fulfillment through more interpersonal, or Symbolic mechanisms.

The LIFE was designed to measure both a Literal and Symbolic sense of one's basic needs having been met. To examine this psychometrically, an Exploratory Factor Analysis (EFA) was run via SPSS. Best practice guidelines on sample size vary, yet a commonly held minimum threshold is 1:1 ratio of subjects to items (Costello & Osborne, 2005). To obtain a minimally accepted subjects-to-items ratio, data collected from both Phase I and Phase II, for a total of 175 subjects, was utilized in the factor analysis. The EFA included only the 140-items determined after the revision protocol used in Phase II.

The EFA was employed to determine the underlying psychometric structure of the LIFE. The LIFE was designed to be a multidimensional test with correlated dimensions; as such, an EFA with oblimin rotation was selected as the most appropriate procedure (Costello & Osborne, 2005). In PBSP theory there are two primary factors that influence the formation of childhood development memories: Literal and Symbolic influences. An EFA would help establish the theoretical fidelity of the LIFE to PBSP theory.

Secondly, a Confirmatory Factor Analysis (CFA) was run via SPSS. Item Factor Loadings based on the CFA are provided in Table 4.

Results

Reliability. Phase I scale reliabilities for the LIFE content scales ranged from .63 to .76, with a total-test Cronbach's alpha of .71 (N=75). Phase II LIFE content scale reliabilities ranged from .76 to .89, with a total-test Cronbach's alpha of .83 (N=100). The already established Defensiveness scale reliability from Phase I was .78 (N=75) and from Phase II was .75 (N=100). Cronbach's alpha coefficients above .70 are considered an indication of sufficient scale reliabilities (Yan, 2007). Refer to Tables 2 and 3 for the reliability results.

Dimensionality: Inter-Scale Correlations. Inter-scale correlations were consistent with PBSP theory: Basic Needs scales were the most highly correlated scales, with an average person-r correlation of $r=.76$ ($p<.05$). Additionally, the Holes in Roles had an average correlation with the Basic Needs of $r= -.52$ ($p<.05$). The Pilot scale had an average correlation with the Basic Needs of $r=.70$ ($p <.05$). The Defensiveness scale had no significant relationship with any of the LIFE content scales, the average correlation being $r=.01$.

Dimensionality: Factor Structure. The scree plot from the EFA showed two components with eigenvalues above 1.0 and one additional component with an eigenvalue above .80. A fourth component had an eigenvalue of .69. The recommended approach for choosing factors is the Scree test (Costello & Osborne, 2005), which involves examining the scree plot for the natural "break". The scree plot is provided in Figure 1. A three-factor solution was chosen based on the EFA scree test, PBSP theory, and inclusion of

the Defensiveness/Unlikely Virtues scale, which is a construct unrelated to the LIFE content scales.

A 3-Factor Confirmatory Factor Analysis was then run to create an Item Factor Loadings table. Items with no loadings above .30 were placed in an un-factored items category. Table 4 provides the complete LIFE inventory factor loadings.

Conclusion and Discussion

Reliability. When developing an assessment, considerations of test-reliability must be addressed initially. The reliability of the final 140-item version of the LIFE was .83 (N=100). This provides early evidence that the LIFE is a reliable measure. Given the nature of scales, it would be expected that as individuals gain a different perspective on their memories, through therapy or other forms of self-discovery, that scores on the LIFE would change. As such, test-retest correlations would be expectedly lower, particularly when intervals between testing exceed nine months to one year.

Future studies on reliability should focus on establishing reliabilities and norms for various populations, including clinical, general population, young adults (18-29), middle aged (30-49), older adults (50-69), and the elderly (70+). In addition, the LIFE may be a useful measure in longitudinal studies aimed at assessing a variety of developmental phenomena.

PBSP Theory and Factor Analysis of the LIFE. Factor Analysis is largely an interpretive process that uses statistical measures to guide a theoretical discussion: there are few absolutes when exploring the underlying factor structure of an instrument (Costello & Osborne, 2005). The LIFE was developed to assess the extent to which a test-taker perceives fulfillment of the Basic Needs during childhood, to which the Holes in Roles occurred, and to which the Pilot was developed.

There are two factors an individual considers when perceiving the extent to which the Basic Needs are met: Literally and Symbolically. In the literal, an individual remembers childhood experiences of being touched, held, physically supported, and protected. Half of the items on the LIFE are written to measure such literal experiences.

Symbolic perceptions are developed when an individual maintains a more global sense of feeling supported, cared about, loved, and an ability to reciprocate emotionally with others. The other half of the items on the LIFE are written to measure such symbolic perceptions.

Results from the EFA support PBSP's two-factor theoretical framework. The three-factor EFA model provides the most cogent solution to the psychometric structure of the LIFE. The two factors with eigenvalues above 1.0 have items that relate mostly to Literal needs on Factor One and Symbolic needs on Factor Two. A third factor included 16 items relating to response validity, defensiveness, and reporting of unlikely virtues.

The five items with the strongest factor loads on Literal Needs (Factor One) are:

NR I grew up in an environment that nurtured and helped me grow

SP For as long as I can remember, I felt that my parent/caregivers were there for me

PR I liked the sense of security and protection I grew up with

NR My parents/caregivers knew how to talk to me in soothing and comforting ways when I was a child

NR I was well taken-care of by family/friends as I grew up

The seven items with strongest factor loads on Symbolic Needs (Factor Two) are:

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- SP I feel actively supported by those who care for me
 - SP Balancing the give and take of a friendship is something that comes naturally to me
 - NR I find it easy to care about my family and friends
 - SP I have a strong and reliable support system
 - SP I have the emotional support I need to live a healthy life
 - PB I have a sense of positive meaning and purpose for my life
 - LL I know the difference between my emotions and other's emotions

The factor analysis presents the first empirical evidence in support of the existence of two measurable factors of the Basic Needs: Literal and Symbolic. From a clinical perspective, distinguishing Literal from Symbolic provides greater precision in determining the focus of therapy and applying interventions. The Holes in Roles and the Pilot are inter-relational phenomena and would be expected to load more strongly onto the Symbolic factor than the Literal factor. This is due to the Holes in Roles and the Pilot both being dependent on the development of language, the acquisition of which allows one to create and understand symbols. As the child reaches higher levels of maturation he or she gains the ability to understand roles, process stories, and have a vocabulary for emotions. The EFA supported this theoretical conclusion.

In addition to the factor structure, inter-scale correlations suggest a strong relationship between the Basic Needs scales. This verifies that meeting of one's Basic Needs does not occur in isolation. For example, the child is not just requiring support for success in friendships or schooling, but rather he or she also has needs for loving limits, protection, and nurturance to foster healthy functioning. The inter-scale correlations also corroborate theoretical suggestions that highly effective parents tend to meet the Basic Needs globally.

Secondly, the Basic Needs and the Holes in Roles scales have strong inverse correlations. This supports the PBSP hypothesis that the Holes in Roles are detrimental to healthy childhood development and that inter-relational phenomena affects how one remembers his or her childhood caretakers. Thus, the Holes in Roles has tremendous power over one's attainment of the Basic Needs as this premature awakening of the child's compassion and desire for justice places the focus on others, rather than self. Consequently, the child negatively impacts his or her own development due to an inability to receive or let in the Basic Needs offered by others.

Lastly, the inter-scale correlations show no relationship between the content scales and validity scales. This suggests that state-based defensiveness is not related to the state-based content scales.

Future research. PBSP theory postulates that the degree to which Basic Needs are met or unmet in childhood have an impact on one's later life functioning. PBSP literature demonstrates that deficits in needs attainment can lead to depression, anxiety, generalized distress, and increased levels of shame as one has difficulty realizing their true self and adopting coping skills to deal with life (Perquin, 1998b; Pessó, 1991).

One focus for future research on the LIFE should concentrate on establishing the convergent and divergent validity of the instrument. Results on the LIFE should be correlated with other known measures of psychopathology, attachment style, adverse childhood experiences, and other known measures of mental health and wellbeing.

A second area of focus should be on establishing intervention protocols based on the LIFE. Prior to the development of the LIFE no quantitative measures existed to assess a client's base line degree of unmet childhood needs, to delineate what those specific needs were, or if the need was of a literal or symbolic nature. With the LIFE, interventions targeting Literal or Symbolic deficits can be measured through pre-and-post testing. This would lead to an ability to measure the efficacy of PBSP treatment as well as giving the therapist and client evidence of when to terminate therapy. In addition, use of the LIFE provides the therapist a starting point to assess what PBSP domain requires therapeutic attention (e.g. Nurturance, Place, etc.). For example, understanding the client has Unmet Literal Support Needs would suggest that the therapist rely on literal interventions. Thus, the therapist might say, "Let's enroll this pillow to be a support figure for your back" thereby enabling the client to feel physically supported. By participating in a "literal" intervention, the client can discover that Support is believable and then may be more willing to utilize an "ideal parent" symbolic figure which has more therapeutic power.

A third area of focus should be on utilizing the LIFE results in non-therapeutic settings. The LIFE has practical implications for improving parenting skills, increasing teacher-student relational effectiveness, and for improving work satisfaction and performance. Administration, interpretation, and intervention protocols need to be researched and established for the LIFE in these contexts.

Overall, the research findings demonstrate that the LIFE has strong internal consistency as established by Cronbach's alpha. The EFA indicated an underlying factor structure that is consistent with PBSP theory. As more individuals complete the LIFE and further norm groups are developed, it is recommended to conduct a second factor analysis. Comparing the item-loadings from this study's factor analysis with future factor analysis item-loads results would illuminate a consistent underlying structure of the LIFE and provide additional evidence for the construct validity of the LIFE.

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REFERENCES

- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Boccia, M., Piccardi, L., Cordellieri, P., Guariglia, C., & Giannini, A. M. (2015). EMDR therapy for PTSD after motor vehicle accidents: Meta-analytic evidence for specific treatment. *Frontiers in Human Neuroscience*, 9.
- Christova, P., James, L., Engdahl, B., Lewis, S., & Georgopoulos, A. (2015). Diagnosis of posttraumatic stress disorder (PTSD) based on correlations of prewhitened fMRI data: Outcomes and areas involved. *Experimental Brain Research*, 2695-2705.
- Costello, A. & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment Research & Evaluation*, 10(7), 46-55.
- Crandell, J., Morrison, R., & Willis, K. (2002). Using psychomotor to treat dissociative identity disorder. *Journal of Trauma & Dissociation*, 3(2), 57-80. doi:10.1300/J229v03n02_04
- Foulds, M., & Hannigan, P. (1974). Effects of psychomotor group therapy on ratings of self and others. *Psychotherapy: Theory, Research & Practice*, 11(4), 351-353.
- Foulds, M., & Hannigan, P. (1976). Effects of psychomotor group psychotherapy on locus of control and social desirability. *Journal of Humanistic Psychology*, 16(2), 81-88.
- Furr, R. M. & Bacharach, V. R. (2008). *Psychometrics: An introduction*. Los Angeles: Sage Publications.
- Fraley, R. C., Roisman, G. I., Booth-LaForce, C., Owen, M. T., & Holland, A. S. (2013). Interpersonal and genetic origins of adult attachment styles: A longitudinal study from infancy to early adulthood. *Journal of Personality and Social Psychology*. Advance online publication. doi:10.1037/a0031435
- Green, S. B. & Salkind, N. J. (2008). *Using SPSS for Windows and Macintosh: Analyzing and Understanding Data* (5th Edition). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hamner, M.B., Lorberbaum, J.P., & George, M.S. (1999) Potential role of the anterior cingulate cortex PTSD Review and hypothesis. *Depression and Anxiety*, 9(1), 1-14.
- Heim, C., Newport, D. J., Mletzko, T., Miller, A. H., & Nemeroff, C. B. (2008). The link between childhood trauma and depression: Insights from HPA axis studies in humans. *Psychoneuroendocrinology*, 33, 693–710. doi:10.1016/j.psyneuen.2008.03.008
- Horáček, J., Pessa, A., Tintčra, J., Vančura, M., Lucká, Y., Koblre, L., . . . Dockery, C. (2005). The effect of two sessions of PBSP psychotherapy on brain activation in response to trauma-related stimuli. *Psychiatrie*, 9, 83-88.
- Howe, L. (1991). Origins and history of Pessa system psychomotor therapy. In A. Pessa & J. Crandell (Eds.): *Moving psychotherapy: Theory and applications of Pessa system psychomotor therapy* (pp. 3-31). MA: Brookline Books.
- Hudson, J. L., & Rapee, R. M. (2001). Parent–child interactions and anxiety disorders: An observational study. *Behaviour Research and Therapy*, 39, 1411–1427. International Personality Item Pool. (2014). [Database record]. Retrieved from the IPIP. <http://ipip.ori.org/>
- Lanius, R. A., Williamson, P. C., Boksman, K., Densmore, M., Gupta, M., Neufeld, R. W., . . . Menon, R.S. (2002). Brain activation during script-driven imagery induced dissociative responses in PTSD: A functional magnetic resonance imaging investigation. *Biol. Psychiatry*, 52, 305–311. doi:10.1016/s0006-3223(02)01367-7
- Levin, P., Lazrove, S., & Kolk, B. (1999). What psychological testing and neuroimaging tell us about the treatment of posttraumatic stress disorder by eye movement desensitization and

- reprocessing. *Journal of Anxiety Disorder*, 13(1-2), 159-172.
- Markovitz, S. (Producer) and Munga, D. (Producer). (2010). *State of Mind-Healing Trauma*. Democratic Republic of Ghana. Suka! Productions.
- Meyer, G. J., Finn, S. E., Eyde, L.D., Kay, G. G., Moreland, K.L., Dies, R. R., . . . Reed, G. M. (2001). Psychological testing and psychological assessment: A review of evidence and issues. *American Psychologist*, 56(2), 128-165.
- Perquin, L. (1998a). Quality of life and quality of care in Pessó Boyden psychomotor therapy. *Fourth International Conference for PBSP Psychotherapy*, 125-140.
- Perquin, L. (1998b). General introduction and training curriculum in Pessó Boyden system psychomotor: A specialization in body-orient psychotherapy. *Fourth International Conference for PBSP Psychotherapy*, 11-29.
- Perquin, L. (2004). Neuroscience and its significance for psychotherapy: An overview from the perspective of Pessó Boyden System psychomotor. *European Psychotherapy*, 5(1), 117-134.
- Pessó, A. (1969). *Movement in psychotherapy*. New York: University Press.
- Pessó, A. (1991). Abuse. In A. Pessó & J. Crandell (Eds.): *Moving psychotherapy: Theory and applications of Pessó system psychomotor therapy* (pp. 169-188). MA: Brookline Books.
- Pessó, A., & Crandell, J. (Eds.). (1991). *Moving psychotherapy: Theory and applications of Pessó system psychomotor therapy*. MA: Brookline Books.
- Pessó, A. (2016, April 28). Personal communication.
- Radandt, A., & Franz, U. (2009). Embody the mind – mind the body. *Sixth International PBSP Psychotherapy Conference*, 80-81.
- Shin, L. M., McNally, R. J., Kosslyn, S. M., Thompson, W. L., Rauch, S. L., Alpert, N. M., . . . Pitman, R. K. (1999). Regional cerebral blood flow during script-driven imagery in childhood sexual abuse-related PTSD: PET investigation. *American Journal of Psychiatry*, 156, 575–584.
- Slaninová, G., & Pidimová, P. (2014a). The formation of self-concept and its changes in the context of Pessó Boyden system psychomotor. *Procedia - Social and Behavioral Sciences*, 132, 461-465. doi:10.1016/j.sbspro.2014.04.337
- Slaninová, G., & Pidimová, P. (2014b). Pessó Boyden system psychomotor as a method of work with battered victims. *Procedia - Social and Behavioral Sciences*, 112, 387-394. doi: 10.1016/j.sbspro.2014.01.1179.
- Vogel, P. A., & Rokenes, O. H. (2004). Changes after PBSP group therapy: Changes in symptoms, interpersonal problems and self-concepts after participation in Pessó Boyden system psychomotor group therapy. *Pessó Tijdschrift*, 35- 44.
- Yan, L. (2007). The impact of outliers on Cronbach's coefficient alpha estimate of reliability. *Education and Psychological Measurement*, 67(4), 620-634.

Table 1
Participant Demographics

Phase	N	Male	Female	Clinical Population	General Population	Age Range	Avg Yrs Clinical Experience
<i>Phase I – SME</i>	9	6	3	--	--	31-85	17.5
<i>Phase II</i>	75	36	39	25	50	18-71	--
<i>Phase III</i>	100	42	58	20	80	21-69	--

Table 2
Phase I Reliability Analysis of Levang Inventory of Family Experiences (N=75).

	Place/ Belonging	Nurturance	Support	Protection	Loving Limits	Pilot	Holes in Roles	Defense
Place/Belonging	.67							
Nurturance	.70	.69						
Support	.71	.64	.72					
Protection	.66	.54	.76	.76				
Loving Limits	.54	.59	.57	.60	.70			
Pilot	.59	.48	.49	.67	.56	.68		
Holes in Roles	-.30	-.42	-.31	-.25	-.21	-.24	.63	
Defensiveness	.01	-.08	-.00	-.10	.07	.02	.08	.78

Note. Inter-scale correlations with scale reliabilities provided on diagonal. Total Items = 182

Table 3*Phase II Reliability Analysis of Levang Inventory of Family Experiences (N=100).*

	Place/ Belonging	Nurturance	Support	Protection	Loving Limits	Pilot	Holes in Roles	Defense
Place/Belonging	.89							
Nurturance	.86	.84						
Support	.85	.89	.86					
Protection	.76	.74	.76	.84				
Loving Limits	.71	.71	.69	.60	.75			
Pilot	.73	.68	.68	.69	.72	.88		
Holes in Roles	-.54	-.57	-.61	-.53	-.44	-.44	.76	
Defensiveness	.18	-.02	-.01	-.07	.03	.05	.07	.75

Note. Inter-scale correlations with scale reliabilities provided on diagonal. Total Items = 140

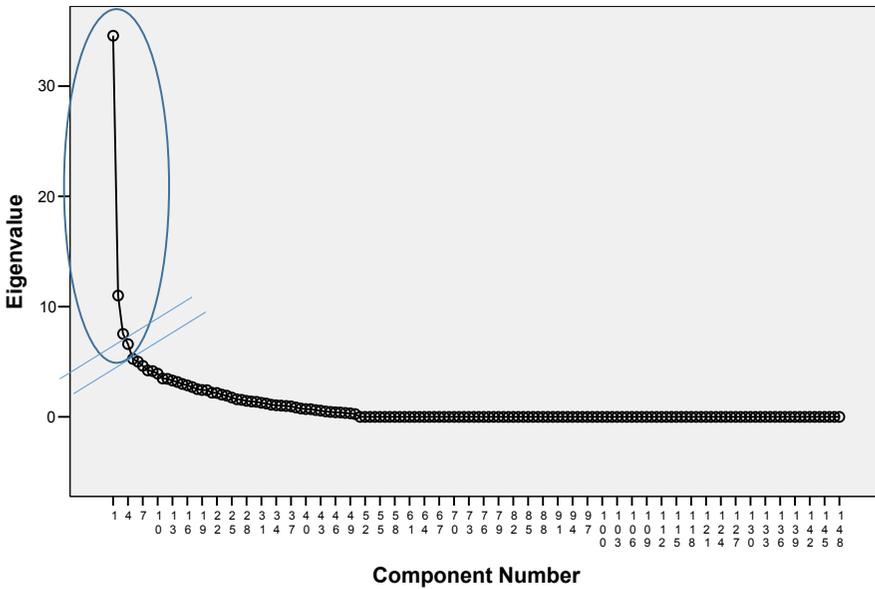
Figure 1. Exploratory Factor Analysis – Scree Plot; 3 Factors (N=175)

Table 4

Phase II LIFE Items Factor Loadings by Three Factor Solution (Literal, Symbol, Response Validity)

Item Key: NR=Nurturance, SP=Support, PR=Protection, PB=Place/Belonging, LL=Loving Limits, HR=Holes-in-Roles, PO=Pilot (N=175)

Factor One – Literal Needs (62 Items)	L
NR I grew up in an environment that nurtured and helped me grow	.819
SP For as long as I can remember, I felt that my parent/caregivers were there for me	.817
PR I liked the sense of security and protection I grew up with	.816
NR My parents/caregivers knew how to talk to me in soothing and comforting ways when I was a child	.806
PO Emotions were not allowed in my family growing up	-.789
NR I was well taken-care of by family/friends as I grew up	.756
PO When I was growing up, I believed my parents knew who I was as an individual	.752
SP As a child, I was not allowed to cry when something upset me	-.747
PB I know I had a place in my parent's life	.733
PO I was given the opportunity to identify my own feelings about things	.725
PR I feel that I have a strong sense of what is safe and what is unsafe because of how my parents/caregivers took care of me as I was growing up.	.719
PO As I was growing up, I learned how to ignore my true feelings	-.709
LL When I was a young child, my parents never made attempts to hold me if I had a temper tantrum	-.709
PO I felt my opinions were respected by my parents, even when they were different from theirs	.699
PO As a child, my family fully recognized and appreciated my uniqueness	.696
PB My parents or caregivers rarely looked lovingly at me when I was a child	-.693
PR As far back as I can remember, my parents/caregivers have worked to keep me safe	.688
PR My parents/caregivers kept me safe and protected as a baby	.688
SP I believe my parents/caregivers held me safely as a baby	.674
P If I felt frightened as a child, I knew my parents/caregivers would protect me	.667
NR There was a lot of comforting and loving touch in my home growing up	.666
SP My parents/caregivers held and carried me as I was growing up	.666
HR I witnessed family members getting physically/emotionally/sexually abused	-.662
NR My mother was warm, comforting and loving when I was a child	.661
PB Growing up, I was told that I was wanted and my birth was planned	.642
PO My parents were not grounded in reality	-.616
LL I was given an opportunity to talk about positive and negative feelings as I was growing up	.614
PR As a teenager, my parents helped me learn how to make decisions by pointing out both the positives and negatives	.608
LL My parents/caregivers helped me identify and name my feelings	.606
PB I feel that my parents had a place in their hearts for me	.605
SP When I was frightened as a child, my parents/caregiver did not comfort me	-.592
PB I feel emotionally safe most everywhere I go in the world	.592
PR I was never forced to show affection or love for people I was not comfortable with or did not know	.590
SP I have had to fight to ensure my needs were met	-.562
PR I don't think my caretakers always knew if I was safe or not	-.550
NR My family never showed affection towards one another	-.547
PO I didn't feel like a real person growing up	-.547
SP As a child, my mother/caregiver took care of me if I was injured (example: scraped knee or elbow)	.534
PB Sometimes I feel like an impostor	-.528
PB My parents were disappointed to discover that I was a boy (or a girl, if you are female)	-.522
NR My father was absent, cold, or uninterested in me when I was a child	-.510
SP When I look back at my life, I feel like I raised myself	-.508
LL In our home, taking your anger out on people or things was okay	-.496
LL In our home, my parents felt uncomfortable with their sexuality and it was a taboo subject	-.484
LL As a child, I was encouraged to learn to be independent	.481
PB Sometimes I feel that I don't have enough roots	-.475
LL My parents/caregivers expressed their anger at me by yelling or screaming	-.475
PB As I was growing up I felt closely attached to 3 or more people in my life	.467
LL I know how to stay calm on the inside when other people are upset	.461
PR I have been physically mistreated by someone or something in my past	-.417

NR I sometimes feel empty inside	-.393
LL As a child, I was encouraged to learn to be independent	.386
HR I was never put in a parent role as a child	.383
NR I was a breast-fed baby	.373
HR As a child, I was far too wise beyond my age	-.357
PR I do not feel any need to be cautious in unfamiliar places	.345
HR I get a lot of pleasure finishing tasks and being organized	-.343
LL My parents/caregivers taught me how to contain my strong emotions	.339
PB My mother's life was stressful and/or chaotic while she was pregnant with me	-.332
SP As an infant, I don't think my mother/caregiver took as much interest in me as most mothers	-.320
HR I feel there needs to be justice for any wrongdoing or mistreatment against me	-.319
LL As I grew up, I felt that I could talk about sex frankly, safely, and appropriately with my parents/caregivers	.315
HR As a young child, my parents/caregivers never expected me to take care of them	.300

Factor Two – Symbolic Needs (45 Items)

S

SP I feel actively supported by those who care for me	.735
SP Balancing the give and take of a friendship is something that comes naturally to me	.699
NR I find it easy to care about my family and friends	.695
SP I have a strong and reliable support system	.682
SP I have the emotional support I need to live a healthy life	.641
PB I have a sense of positive meaning and purpose for my life	.624
LL I know the difference between my emotions and other's emotions	.622
PB I've been a loner most of my life	-.617
NR I am comfortable being hugged/touched by those I love	.599
PB I have a place in the world	.589
PB I usually keep others at a distance	-.588
HR I do not feel free to live my own life	-.586
SP Friends are not trustworthy	-.583
PB I don't feel connected to the people and places in my life	-.576
NR I prefer to be alone	-.547
LL I feel confident enough to have my own feelings without going along with others	.546
SP I believe that there are people in my life now who are there for me	.529
SP I am comfortable relying on others to help meet my needs	.527
HR I feel a great burden or responsibility to take care of others	-.525
NR I have people in my life who fill me up with love and caring	.521
HR I procrastinate a lot and leave things undone	-.516
HR When I was a child, I was never told stories about our family history	-.508
SP When I was young, I did not need anyone to watch over me and pay attention to me	-.499
HR I'm not always sure of how to take care of myself so that I don't get drained	-.499
PO I am good at articulating all of my emotions and feelings to others	.486
PB I believe that things will work out for me in my life	.480
NR At times, I feel grateful for the love that others show me	.472
NR Those who mistreat people deserve everything that is coming to them	-.453
HR I have a hard time receiving praise from others	-.443
PR Growing up, there were times I felt like I had no one but myself to keep me safe from obvious danger	-.437
NR Those who mistreat people deserve everything that is coming to them	-.433
LL Sex is something that shouldn't be talked about as much as it is	-.425
SP I do not like to rely on others to help me	-.407
HR I'm the first to rescue others no matter what the trouble is	-.406
PR I feel safe and protected in my physical environment	.400
PO Often, I don't take time to think about the root cause of my feelings	-.380
PR People who feel that they need protection from harm are weak	-.367
PB As a child I routinely got angry and pushed others away	-.362
SP I feel it is foolish to let others know you	-.361
NR Generally, I don't care to know other people	-.351
NR I don't like people standing close to me or in my bubble	-.329
LL Some people think I am too rigid	-.295
PR I always carry a weapon of some sort to protect myself	-.293
ASP I don't always keep my feelings in check	-.683

 Factor Three – Response Validity (17 Items)

LL Some people think I am too emotional
 ASP I don't think negatively about anyone
 ASP There are times when I have unfairly held negative opinions about others
 ASP I can always overcome difficulty on my own
 PB I feel comfortable in my own skin
 NR It takes great effort for me to calm down if I get really agitated or worked up
 ASP I have had life troubles where I have needed others' help to overcome them
 ASP I never tell lies
 ASP I always perform up to my highest capabilities
 ASP I have told a lie
 PR I do not think I need anyone or anything to protect me
 ASP I always follow the rules
 HR Nothing is more important to me than taking care of me
 HR I don't have any problem taking responsibility for others
 PB I have had suicidal thoughts in the past few months
 PR I sometimes feel scared, like something larger or stronger than me might get me
 PR I feel like I am big enough, strong enough and smart enough to not need anyone to protect me from harm

 Unloaded Items (n=16)

HR I work very hard to earn what comes to me
 LL There were times when my parents talk of sex and/or sexual behavior left me feeling uncomfortable
 PR As a young child, I was always kept safe from obvious dangers (example: hot stove, electricity, running into the street or a dangerous animal)
 PB I was told that my parents had me in order to save their marriage and keep the family together
 HR I saw my parents/caregivers suffer with disease or frailty
 ASP I am not perfect
 HR I never put the needs of others before my own
 PR I was never forced or allowed to be in an unsafe environment
 HR As a child, I had great compassion for people who suffered
 LL I did not need rules and boundaries growing up
 LL I have been too free and open with sex
 PR I never get startled by loud noises or unusual sounds
 NR I would be fine if I had no family, friends, or acquaintances
 HR I'm the first to rescue others no matter what the trouble is
 LL My parents did not create rules and boundaries for me
 SP I think it's best not to coddle children because I wasn't coddled

Note. Negative item loads indicate reverse coded items. Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 5 iterations. All items are under copyright and may not be distributed, copied, or stored in any form without the expressed written consent of Dr. Curtis Levang, LP. ©Levang & Associates, 2016

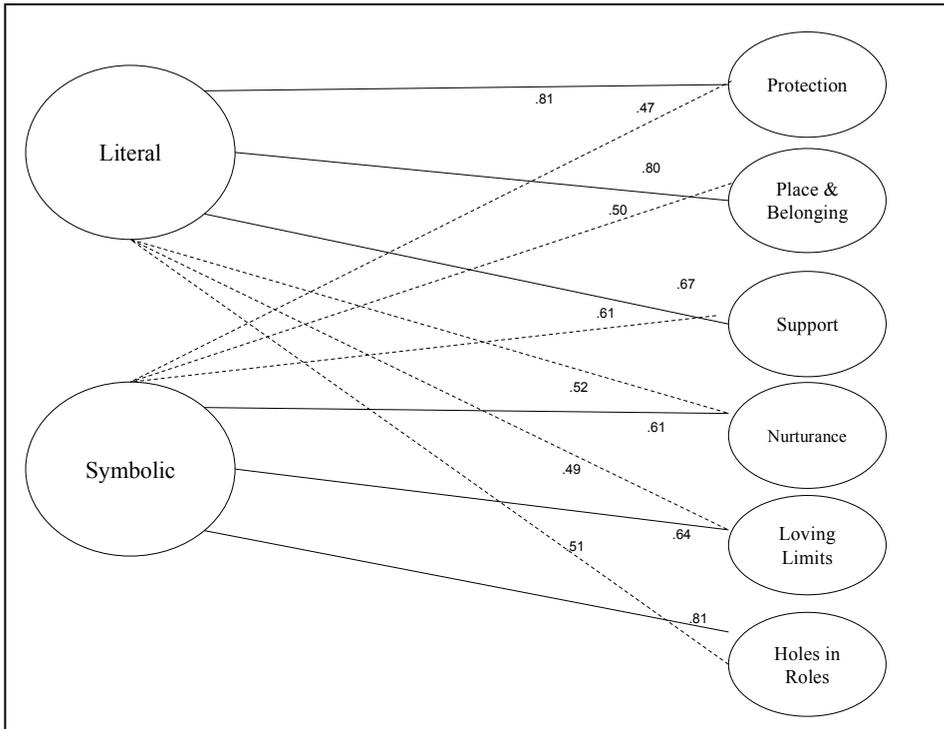


Figure 2. Two-Factor Model for the Levang Inventory of Family Experiences.

ⁱ Imagine the most beautiful dance you have ever seen. As the dancer's body lunges forward into the air you gasp, holding your breath until his toes are safely on the ground. He contorts his body into a shape you barely recognize as human, and it makes you want to cry. Yet another dance, with two dancers intertwined at the hips makes your heart start to race, building a deep lust in your belly. It's this simple fact: that the body and emotion are intertwined, that is the bedrock of Pesso Boyden System Psychomotor (PBSP).

Albert Pesso and Diane Boyden Pesso, trained dancers and choreographers, started working on their mind/body theory in the early 1960s (Howe, 1991). Pesso was the Associate Professor and Director of the Dance Department at Emerson College in Boston, Massachusetts. While there he and Boyden Pesso began to comprehend that the inability of professional dancers to perform certain dance movements were directly related to repressed emotions (Perquin, 1998a). Consequently, they developed therapeutic exercises with the intent of bringing emotions into the conscious mind and forged a new understanding of the interplay between mind and body as an integrated unit (Perquin, 1998a, 2004).

The Boston psychiatric community became interested in Pesso and Boyden Pesso's psychomotor work and subsequent research at McLean Hospital and Boston Veterans Administration Hospital led to further refinements of their theory (Pesso, 1969). As their work grew they began training psychotherapists in the United States and Europe (Perquin, 1998a). With the collaboration of colleagues Louisa Howe, Ph.D., Lowijs Perquin, M.D., Gus Kaufman, Ph.D., and others, Pesso and Boyden Pesso's theory made a lasting mark in the field of psychology. This is demonstrated not only by the elegance of the theory itself, but by the great body of work produced from books and articles, to lectures, videos, and training materials. Of the numerous honors bestowed upon Pesso and Boyden Pesso, perhaps the greatest were his 2012 Lifetime Achievement Award from the United States Association for Body Psychotherapy (USABP) and his work in the Democratic Republic of the Congo as documented in the 2010 film "State of Mind" (Markovitz & Munga, 2010).