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Transformative, Noetic, and Transpersonal Experiences During Personal Development Workshops

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The global personal development market was valued at \$38.28 billion in 2019 and is expected to grow an additional 5% from 2020 to 2027. Many of these workshops promise to be transformational. This secondary analysis study examined transformative, transpersonal, and noetic aspects of personal development workshops. We found that 74% of post-survey records endorsed that participants experienced a moment of clarity or profound insight during their workshop. In addition, 66% endorsed that participants had experienced at least one noetic experience, and 84% endorsed at least one transpersonal experience. These analyses provide preliminary evidence for the transformational potential of personal development workshops and the common occurrence of transpersonal and noetic experiences across various workshop types.

Keywords: *personal development workshop, transformation, transpersonal, noetic, interconnectedness, well-being*

Today, many seek authentic and meaningful experiences in which a deep sense of connection and transformation is achieved (Thurston & Kuile, 2015). The search for these experiences is reflected in the increasing numbers of individuals participating in personal growth opportunities. The global personal development market was valued at \$38.28 billion in 2019 and is expected to grow an additional 5% from 2020 to 2027 (Grand View Research, 2020). Key focus areas within this market are the mental health, motivation/inspiration, physical health, self-awareness, and skillset enhancement segments. Across all these segments, many opportunities promise to be transformational. Practices considered transformative have been said to be “any set of internal or external activities you engage in with the intention of fostering long-lasting shifts in the way you experience and relate to yourself and others” (Schlitz et al., 2008, p. 93).

An emphasis on transformation can be seen as part of a trend toward what a *Harvard Business Review* piece called the emerging *experience economy* (Pine & Gilmore, 1998)—an evolution from a succession of older economies based on

commodities, goods, and services. According to Pine and Gilmore (1998):

An experience occurs when a company intentionally uses services as the stage, and goods as props, to engage individual customers in a way that creates a memorable event... While prior economic offerings—commodities, goods, and services—are external to the buyer, experiences are inherently personal, existing only in the mind of an individual who has been engaged on an emotional, physical, intellectual, or even spiritual level. (pp. 98–99)

They later predicted a final economic offering: transformation. Transformations were purchased based on an “aspiration,” “hope,” or “dream;” provided use that was “enduring;” and the level of content information was “wisdom.” Transformations were “individual-changing” and referred to in religious terms: “Transformations are only the earthly possibilities for the perfection God can one day instill” (Pine & Gilmore, 1998, p. 24). While anecdotal reports support transformational aspects of personal development workshops, little formal research has been conducted to evaluate

the validity of these anecdotal reports. Examples of these limited reports include a study reporting transformation in Reiki practitioners (De Vitto, 2021) and the transformational potential of a dancing meditation (Maurer, 2021).

Parent Study on

Personal Development Workshops

In an effort to broaden formal research on personal growth workshops, we initiated a large research program to measure outcomes before and after a wide variety of personal development workshops (Wahbeh et al., 2022). Workshop leaders hosted at the Institute of Noetic Sciences (IONS) EarthRise Learning Center (Petaluma, CA) and additional venues were invited to distribute pre- and post-survey links incorporating multiple measures to their participants. We collected 1,898 surveys from participants who completed 33 different workshops. Seventeen workshops were held at the IONS EarthRise Learning Center, and 19 were held elsewhere. Workshop content as reported by workshop leaders (and allowing for the choice of more than one content type) was as follows: meditation (n = 17), positive psychology (n = 17), spirituality (n = 13), health and healing (n = 12), intention (n = 12), intuition (n = 11), nature practices (n = 10), embodied practices (n = 9), art (n = 7), death and dying (n = 5), sound healing (n = 5), parapsychology (n = 4), technology tools (n = 4), altered states of consciousness (n = 1), and dreamwork (n = 1). The workshops' activities included lectures, small groups, paired discussions, group discussions, movement, and in-nature formats. Considering both content and activity format, workshops spanned the key focus areas of the personal development market (i.e., mental health, motivation/inspiration, physical health, self-awareness, and skillset enhancement segments).

This research program's (Wahbeh et al., 2022) three primary outcome measures were changes in participants' sense of interconnectedness, well-being, and extended perception. We found significant increases in interconnectedness and well-being measures and significant decreases in an extended perception measure after participation in various personal development workshops. These primary, and numerous additional outcomes, are reported in

the parent study resulting from our larger research program (Wahbeh et al., 2022). This research program also collected creativity outcomes not included in the parent study that are in preparation and will be reported elsewhere. In addition, electroencephalography and electrocardiography data were collected in a subsample of participants. These results are reported in Cannard et al., 2021. The secondary analyses presented here explore additional measures not previously reported elsewhere, namely, transformative experiences, noetic experiences, and transpersonal/relational experiences.

Transformative Experiences and Personal Development

We define transformation as an essential and positive development in a person's consciousness, worldview, or perspective that results in long-lasting changes in how an individual experiences and relates to themselves, others, and the world. This definition is reflected across several models of psycho-spiritual transformation, including those within the field of transpersonal psychology. For example, Taylor (2013) described transformation as "a permanent shift of consciousness and identity" (p. 1; cf., Taylor, 2011, 2012b), and Neal et al. (1999) described transformation as "a discontinuous leap forward in consciousness, a paradigm shift, wherein the person is significantly changed in terms of world view, behavior and attitude" (p. 3).

Personal development workshops aim to transform participants. In these secondary analyses, we examined items querying participants' history of transformative experiences prior to a workshop and transformative experiences during their workshop. Items asking about one's history of positive and negative important events—moments of life-changing clarity or profound insight that changed their lives, behavior, or relationship—may inform whether they change during a personal development workshop. That is, does a history of transformation affect their change potential in a current workshop?

Noetic Experiences and Personal Development

Common to definitions of transformation is an intuitive interconnected relationship with the surrounding world. We suggest that transformation begins with a subjective experience of inner (i.e.,

noetic) knowing and then follows a continuing process of exploration and practice, leading to the enrichment of both the individual and the collective (Schlitz et al., 2007). From the Greek *noēsis*, noetic means intuition, inner wisdom, and direct knowing. The American philosopher and psychologist William James (1985) described noetic experiences as

states of knowledge. They are states of insight into depths of truth unplumbed by the discursive intellect. They are illuminations, revelations, full of significance and importance, all inarticulate though they remain; and as a rule, they carry with them a curious sense of authority for after-time. (pp. 380–81)

Noetic experiences have many names ascribed to them, such as intuitive, psychic, non-local, and extended perception. Noetic experiences go beyond our traditional senses and the limitations of our conventional ideas about space and time. Noetic experiences range from gut hunches that many people have experienced to more rare phenomena, such as mediumship and trance channeling (Wahbeh et al., 2022). They include phenomena such as mind-to-mind communication (telepathy), accessing information not normally knowable through the traditional five senses (remote viewing or clairvoyance), and contact with the dead (White, 1997). In addition, transformative experiences are often accompanied by extended perception (Sagher et al., 2019).

Noetic experiences are known in a transpersonal context as functionally transformative human experiences (Hood, 2005; Roussillon, 2015; Schlitz et al., 2010). They often have profound and transformative outcomes for the person (Roussillon, 2015, Sagher, 2018). Many studies have examined their beneficial, inspirational, and positively impactful nature (Griffiths et al., 2008; Kennedy & Kanthamani, 1995a; Ellison & Fan, 2008; Wahbeh, Radin, et al., 2018; Richards, 1991). For example, one study found that people's belief in life after death and a guiding or protective higher force increased after their noetic experiences, as did their interest in spirituality, sense of connection to others, happiness, well-being, confidence, optimism about the future, and meaning in life (Kennedy & Kanthamani, 1995a, 1995b).

Transpersonal/Relational Experiences and Personal Development

Transformation results in changes in the way an individual experiences and relates to themselves, others, and the world. In other words, transformational experiences are also transpersonal experiences, going beyond the personal self. "Transpersonal refers to values of deep connectedness, of relationship, subjective meaning, and shared humanity . . . Transpersonal conveys a connection beyond the ego, capturing spiritual dimensions all humans share with a deeper self, others, nature, and the universe" (Watson, 2002, p. 13). Transpersonal experiences allow individuals to feel a sense of identity that goes beyond their personal selves to encompass the broader aspects of humanity and even the universe (Walsh & Vaughan, 1993, p. 203). Subjective accounts of transpersonal and relational experiences during personal development workshops are common. For example, participants may feel a deep connection to their teacher, connection with their fellow workshop attendees, meaningful experiences with an object, or deep connection with nature, which may support them in some transformative process.

Purpose of the Present Study

Transformative, noetic, and transpersonal/relational experiences are not mutually exclusive and overlap. For example, noetic and transpersonal/relational experiences are often transformative but may not be. Transformation may arise from any type of experience, positive or negative. However, for the most part, personal development workshops are designed to elicit positive transformation in the participant. Regardless of their relationships with each other, transformative, noetic, and transpersonal/relational experiences appear to be prevalent during personal growth workshops and supportive of personal development. However, limited studies have been conducted on these constructs in the personal development workshop context. Here, we report their incidence during personal development workshops and their relationship to interconnectedness, well-being, and extended perception changes reported in the parent study (Wahbeh et al., 2022).

Methods

These secondary analyses aimed to build on the parent study (Wahbeh et al., 2022) that reported changes in measures of interconnectedness, well-being, and extended perception by exploring the transformative effects of personal development workshops. Using the parent study's additional survey items on transformative, noetic, and transpersonal/relationship experiences, the overall objectives were to (a) evaluate self-report items on transformation; (b) explore the prevalence of noetic and transpersonal/relational experiences with participation in a personal development workshop; and (c) assess the association of these experiences with the previously reported changes in measures of interconnectedness, well-being, and extended perception. These objectives were explored through the following research questions:

1. Do participants partaking in personal development workshops have a history of transformative experiences *prior to* attending a workshop, and what is their sense of transformation *after* such a workshop?

Hypothesis: A majority of participants would have a history of transformative experiences. Also, a majority of participants would have transformative experiences during their workshop.

2. Do participants of personal development workshops have noetic experiences during such a workshop?

Hypothesis: A majority of participants would have a noetic experience during their workshop.

3. Do workshop participants have transpersonal or relational experiences during such a workshop?

Hypothesis: A majority of participants would have a transpersonal or relational experience during their workshop.

4. Is the occurrence of transformative, noetic, and/or transpersonal/relational experiences during a personal development workshop associated with changes in interconnectedness, well-being, and extended perception after such a workshop?

Hypothesis: At least one of the transformative, noetic, and transpersonal/relational experiences would have a significant association with interconnectedness and well-being changes observed in the parent study. However, there would be no significant items associated with extended perception change because, although it significantly changed in the parent study, the change was in the negative direction.

Participants

This study included data from 522 participants (402 women, 117 men, two identified as non-binary, and two who did not respond, *M* age 55.2 ± 13.0 years) collected from March 17, 2018, to November 4, 2020. These participants contributed 534 paired pre-post records, with 11 participants completing more than one workshop (10 completed 2, and 1 completed 3). This data set was the same set of unique and complete pre-post surveys (out of the 1,898 records initially collected) that were reported in Wahbeh et al. 2022. Inclusion criteria: Participants aged 18 years or older who could read and understand the consent form and complete the survey and tasks and who had access to the survey online or at the IONS EarthRise Learning Center. Exclusion criteria: People younger than 18 years of age, inability to understand the consent form, or acute or chronic illness that precluded completion of measurements. Additional participant demographics are presented in Table 1.

Recruitment

Participants were recruited through three avenues: (a) the IONS webpage dedicated to the IONS Discovery Lab research program; (b) in-person at the IONS EarthRise Learning Center; and (c) postcards, flyers, and newsletters distributed to community networks and previous participants in IONS studies, workshops, conferences, and meetings. Participants were not compensated for completing this study. All participants agreed to an informed consent to participate in the study consistent with the guidelines of the IONS Institutional Review Board (approval designation WAHH_2018_01).

Table 1. *Characteristics of participants included in the study*

Measure	Category	All Participants			Female	Male	Non-Binary
		N	M SD or N	%	M SD or N	M SD or N	M SD or N
Age	Years	521	55.2 13.0		55.3 13.0	55.2 13.9	49.0 15.6
Education	Years	514	17.0 2.8		16.9 2.7	17.6 2.9	20.0 15.6
Race	American Indian	513	5	1.0	4	1	
	Asian/Pacific Islander		30	5.8	23	7	
	Black or African American		8	1.6	7	3	
	Hispanic		21	4.1	18	3	
	White/Caucasian		432	84.2	337	103	1
	Other		17	3.3	14	2	1
Relationship	In a relationship	503	200	39.8	162	41	1
	Not in a relationship		303	60.2	232	77	1
Income	\$150K and above	462	104	22.5	69	36	
	\$75K to under \$150K		186	40.3	146	41	1
	0 to under \$75K		172	37.2	137	17	1
Household Number		506	2.2 ± 1.3		2.2 1.2	2.5 1.6	1.0 0
Setting where they live	Rural	509	116	22.8	91	26	
	Suburban		246	48.3	192	57	2
	Urban		147	28.9	116	35	
Overall Health	Poor	511	0	0	0	0	
	Fair		72	14.1	58	13	
	Good		168	32.9	137	37	
	Very good		221	43.3	169	55	
	Excellent		50	9.8	36	15	2
Spiritual affiliation childhood	Not religious or spiritual	513	89	17.4	69	20	1
	Non-practicing religious		20	3.9	17	3	
	Minimally practicing religious		153	29.8	117	39	1
	Practicing religious		224	43.7	176	53	
	Spiritual but not religious		27	5.3	22	6	
Spiritual affiliation current	Not religious or spiritual	510	22	4.3	17	5	
	Non-practicing religious		20	3.9	17	4	
	Minimally practicing religious		29	5.7	22	7	1
	Practicing religious		32	6.3	17	14	1
	Spiritual but not religious		407	79.8	326	90	
Meditators	Yes	510	382	74.9	295	94	2

Note. Measure is listed in column 1. Measure categories, if relevant, are listed in column 2. Number of participants that answered that question are included in column 3. In column 4, mean and standard deviations are listed for continuous variables and number of participants for categorical variables. Column 5 lists the percentage of participants who endorsed that category level for categorical variables. Demographic variables are then separated by sex.

Instruments

The four types of measures used in these secondary analyses were as follows:

1. Interconnectedness, well-being, and extended perception change scores
2. Transformative experiences
3. Noetic experiences
4. Transpersonal/relational experiences

Interconnectedness, Well-Being, and Extended Perception Change Scores

The pre- to post-workshop change scores of the parent study's primary outcomes (Wahbeh et al., 2022) were used as outcomes of interest in these secondary analyses. Interconnectedness was measured by the Cloninger Self-Transcendence Scale Total. Well-being was measured by the Arizona Integrative Outcomes Scale. Extended Perception was measured by Quick Remote Viewing. For reference in understanding the secondary analyses results reported here, the parent study's primary outcome pre- and post-workshop means and standard deviations, change score, and effect size are displayed in Table 2.

Cloninger Self-Transcendence Scale. The Cloninger Self-Transcendence Scale is the 15-item subscale of the Cloninger 125-item Temperament and Character Inventory (Cloninger et al., 1994). Cloninger et al. (1994) defined self-transcendence as "the extent to which a person identifies the self as...an integral part of the universe as a whole" (p. 975). This questionnaire was designated as the primary measure of interconnectedness in Wahbeh et al. (2022). A person high on self-transcendence or interconnectedness is keenly aware of being part of a larger whole-being in a spiritual union with God or nature. Participants answer each item on a slider ranging from *Definitely False* (0) to *Definitely True* (10). The scale is scored by summing all 15 items and

dividing by 10, with total scores ranging from 0–15. Cronbach alpha's ranged from 0.74 in the original study (Cloninger et al., 1994) to 0.83 for a more recent validation (Akyalcin et al., 2008) and 0.96 for this study. The dependent measure for this scale was a change score calculated by subtracting the pre-workshop total score from the post-workshop total score.

Arizona Integrative Outcomes Scale (AIOS). The Arizona Integrative Outcomes Scale (AIOS) is a single visual-analog scale that evaluates the overall subjective sense of well-being (Bell et al., 2004). The AIOS is often incorporated into complementary, alternative, and integrative medicine studies as it compensates for disease-focused questionnaire tools. It was the primary measure of well-being in Wahbeh et al. (2022). Participants are asked, "Please reflect on your sense of well-being, taking into account your physical, mental, emotional, social, and spiritual condition over the past 24 hours/past month. Please move the slider below to a point that summarizes your overall sense of well-being for the past 24 hours." The slider ranges from *Worst you've ever been* (0) to *Best you've ever been* (100). The scale results in one value with larger values indicating greater well-being. In a validation study, the AIOS was valid in discriminating between patients and caregivers. Convergent and divergent validity was significant compared to the Global Health Index (0.38) and Global Severity Index (-0.41), as well as negative affect (-0.41) and positive affect (0.56) of the Positive and Negative Affect Scale (Bell et al., 2004). The dependent measure for this scale was a change score calculated by subtracting the pre-workshop score from the post-workshop score.

Quick Remote Viewing Task. Extended perception, the third primary outcome reported in our parent study, range from commonly experienced

Table 2. Pre-post outcome scores from parent study

Outcome Measure	Pre-workshop		Post-workshop		Change		Effect Size Hedges' g, 95% CI, n
	M	SD	M	SD	M	SD	
Interconnectedness	10.4	2.7	10.9	2.6	0.51	1.75	-0.19, 95% CI [-0.25, -0.13], 522
Well-being	61.8	19.3	68.4	17.9	6.5	20.5	-0.35, 95% CI [-0.45, -0.25], 491
Extended perception	0.21	0.13	0.19	0.12	0.02	0.17	-0.16, 95% CI [0.04, 0.28], 481

intuitions or hunches to more unique experiences like remote viewing, the ability to know something about a place, object, or person inaccessible to the ordinary senses (Cardeña, 2018; Targ, 2019). The Quick Remote Viewing Task, our measure of extended perception for which a significantly decreased change score was reported, is a forced-choice task where five images are presented in a horizontal row with a grey box above them. The 218 images used are portrait-mode professional photographs of natural scenes, landmarks, and one or more individuals performing an activity (no portraits) from the Corel Graphic Suite. For each trial, five images are randomly selected simultaneously by the Math.random pseudorandom Javascript command. The participant is instructed

to “Click on the picture below that you think will appear in the box.” There are no time constraints for their choice. After the participant makes their selection, the target image appears above the 5-image row (about 200% magnified compared to the image selected). If the selection is correct, the border of the selected image becomes green, and “This is a hit!” is displayed. If the selection is incorrect, the border becomes red, and “Try again” is displayed. The participant completes 20 such trials, after which the number of hits and misses is displayed. The percentage of hits is the score for the task. The dependent measure for this scale was a change score calculated by subtracting the pre-workshop score from the post-workshop score.

Table 3. *Transformative Experience Items*

Question	N	Total		Female		Male		Non-Binary	
		M	SD	M	SD	M	SD	M	SD
History of Transformative Experiences									
I have experienced an important event(s) that has negatively affected my life.	522	72.1	28.1	72.4	27.4	71.1	30.5	68.5	41.7
If so, my behavior or relationships have changed as a result of this experience(s)	501	72.5	25.9	73.3	24.8	69.9	29.3	70.0	39.6
I have experienced a moment of clarity or profound insight that changed my life.	518	80.5	23.3	80.3	23.8	80.9	22.1	93.0	8.5
If so, my behavior or relationships have changed as a result of this experience(s).	496	81.9	20.3	81.6	20.8	82.6	18.8	94.5	7.8
Workshop Transformative Experiences									
I feel like I have positively changed as a result of this workshop	500	79.0	20.3	79.1	20.6	78.7	19.8	85.5	3.5
I experienced a moment of clarity or profound insight during my workshop, answered as Yes or No. Results listed as # Yes responses	512		395	301		92		2	
If so, I feel that my behavior and relationships will change as a result of this experience.	364	79.1	17.8	78.9	18.3	79.9	16.1	69.5	27.6

Note. The actual items are listed in column 1. Column 2 is the number of participants who answered that question. Column 3 lists the means and standard deviations for items that had a sliding scale of from 0 to 100 or the number and percentage of participants that answered the question “Yes.” Unless otherwise noted, items are rated on a scale from *Not true for me* (0) to *Definitely true for me* (100).

**Transformative, Noetic,
and Transpersonal/Relational Experiences**

The relationship between the parent study’s (Wahbeh et al., 2022) primary outcome change scores and three workshop experience types was examined: 1) transformation as measured by the Transformative Experiences items, 2) noetic as measured by the Noetic Experience Scale from the Noetic Experiences and Belief Scale (NEBS), and 3) transpersonal/relational as measured by the Transpersonal and Relational Aspects items.

Transformative Experience Items. The IONS team created items to capture a measure of transformative experiences. These consisted of four items asking participants about their attitudes and beliefs about transformation before workshop participation and three items concerning perceived transformative experiences after workshop partici-

pation (Table 3). Six of the seven items are rated on a sliding scale from *Not true for me* (0) to *Definitely true for me* (100). One item—“I experienced a moment of clarity or profound insight during my workshop”—was rated as yes or no. Each item resulted in a dependent measure of interest.

Noetic Experience Items. The Noetic Experience Scale of the NEBS consists of 10 items measuring noetic experiences ranging from intuition or gut hunches to perceived contact with the dead (Wahbeh et al., 2020). All participants completed the Experience Scale of the NEBS (Table 4) after the workshop of their choice. The scale can be used in multiple ways: 1) summing values for the 10 items for a total score using a 0-100 answer scale anchored by strongly agree, neither agree nor disagree, or strongly disagree; 2) individual scores for each item using that same value score; or 3) having a binary

Table 4

Noetic Experience Items endorsements for all participants and by gender

Item	All	Female	Male	Non-Binary
	Yes	Yes	Yes	Yes
PE2. An experience that my consciousness is not limited by my physical brain or body.	247	189	57	1
PE7. Gaining information about the thoughts, feelings or circumstances of another person, in a way that does not depend on rational prediction or normal sensory channels.	162	122	38	1
PE1. A hunch that turned out to be correct not just by coincidence.	147	116	30	1
PE4. Gaining information about the future in ways that do not depend on inference or rational prediction.	107	80	27	0
PE5. An experience that I interpreted as a proof that consciousness survives the physical body.	94	72	21	1
PE9. Sent a “mental message” to another person, or in some way influence them at a distance, by means other than the normal channels of communication.	92	75	17	0
PE8. Direct influence of mind on a physical system, without the mediation of any known physical energy.	82	64	17	1
PE10. Accessed information from other dimensions or non-physical beings that is “channeled” through them.	73	55	17	1
PE6. Contact with the dead.	34	29	5	0
PE3. An experience with an extraterrestrial being.	7	5	2	0

Note. The Noetic Experience items are displayed in Column 1 in descending order of endorsement. Column 2 through 5 display the number of participants who endorsed that item during their workshop for all participants and then by gender.

Yes/No score for each of the 10 items. We were most interested in whether participants had the experiences during their workshop for this study. Thus, participants were asked to indicate whether they had experienced any of the included 10 items during their workshop, resulting in a binary variable for each item included as an independent variable in our analyses. The NEBS demonstrated convergent validity, reliability, and internal consistency (Cronbach's alpha Belief 0.90; Experience 0.93).

Transpersonal and Relational Items. The eight items measure a participant's perceptions of their connection to the teacher, their fellow participants, wildlife and animals, and other relevant transpersonal workshop aspects (Table 5). The items were created by the IONS research team based on commonly reported workshop experiences reported as part of ongoing research performed by the IONS scientific team. Participants checked experiences that occurred during their workshop, resulting in a binary variable for each item. Each binary variable was included as an independent variable in our analyses.

Procedure

All participants participated in a personal development workshop that varied in duration and content. Participants completed pre- and post-workshop surveys online, either at home or at the IONS EarthRise Learning Center, depending on

whether the workshop was in-person or online. Consent and all surveys were completed online. Participants received a survey link prior to beginning their workshop. Participants entered their first name and date of birth, which generated an anonymized identification code for all data. All participants acknowledged that they read and understood the consent form and agreed to participate before completing the surveys.

Participants were not required to complete every item in the survey. Participants were also advised to complete the survey as close as possible to the event's beginning and ending (above). There was no formal cut-off for the post-survey timing relative to workshop completion, although all participants completed the post-survey within one week. On the survey's first page, participants entered their first name and date of birth, which was used to create an anonymized 10 digit code. The first name and date of birth were not saved. Thus, participants would get the same code when they entered their personal information, but the ID was anonymized. The surveys were administered via SurveyMonkey Enterprise (www.surveymonkey.com; Momentive). The participants in this study are the same as those in the parent study (Wahbeh et al., 2022).

Treatment of Data

Four research questions and hypotheses (above) were evaluated for these secondary analyses.

Table 5

Transpersonal and Relational Experience Items for all participants and by sex

Item	All	Female	Male	Non-Binary
	Yes	Yes	Yes	Yes
Meaningful experience with a person, place or thing	319	244	73	1
Strong connection with your teacher workshop leader	266	201	63	2
Strong connection with other participants	226	161	64	1
A mystical or spiritual experience	190	151	38	1
Meaningful connection with wildlife/animals	188	148	39	1
Difficult or challenging moments	170	137	33	0
Deep connection with nature	170	135	34	1
Meaningful experience with an object (e.g., crystals on the land, art piece)	104	88	15	1

Note. The Transpersonal and Relational Aspects items are displayed in Column 1 in descending order of endorsement. Column 2 through 5 display the number of participants who endorsed that item during their workshop for all participants and then by sex.

Each research question is listed below, with the statistical approach used to answer it. All statistical analyses were conducted using Stata (Version 15.0).

Research questions 1-3 (i.e., 1. Do participants partaking in personal development workshops have a history with transformative experiences *prior to* attending a workshop, and what is their sense of transformation *after* such a workshop?; 2. Do participants of personal development workshops have noetic experiences during such a workshop?; and 3. Do workshop participants have transpersonal or relationship experiences during such a workshop?) are reported with descriptive statistics (counts, means, and standard deviations) for all participants and also by sex. As a first step in the analyses, categorical variables were described with counts, continuous variables with means and standard deviations. Since participants were not required to complete every item, survey numbers

are not equal for each variable and are listed with relevant analyses in the results section.

Research question 4 (Is the occurrence of transformative, noetic, and/or transpersonal/relational experiences during a personal development workshop associated with increased measures of interconnectedness and well-being after such a workshop?) assessed the relationship between the previously reported change scores in subjective interconnectedness (Cloninger Self-Transcendence Scale), well-being (Arizona Integrative Outcomes Scale), and extended perception (Quick Remote Viewing Task) with the transformative, noetic, and transpersonal/relational items. The objective was achieved by examining each dependent variable of interest (i.e., interconnectedness, well-being, and extended perception change score) with each workshop experience (7 transformative, 10 noetic, and 8 transpersonal/relational items). Change scores

Table 6
Statistical Analysis for Research Question 4

Evaluating the relationship between outcomes and transformation items.	
Dependent Variable	Independent Variables
Interconnectedness change score	Transformation 8 items (8 models – 1 model per binary item)
Well-being change score	Transformation 8 items (8 models – 1 model per binary item)
Extended perception change score	Transformation 8 items (8 models – 1 model per binary item)
<i>Approach:</i> Kruskal-Wallis nonparametric analysis of variance tests were conducted using the Stata <i>kwallis</i> function appropriate for binary independent variable	
Evaluating the relationship between outcomes and noetic experience items.	
Dependent Variable	Independent Variables
Interconnectedness change score	Noetic experiences 10 items (10 models – 1 model per binary item)
Well-being change score	Noetic experiences 10 items (10 models – 1 model per binary item)
Extended perception change score	Noetic experiences 10 items (10 models – 1 model per binary item)
<i>Approach:</i> Kruskal-Wallis nonparametric analysis of variance tests appropriate for binary independent variable	
Evaluating the relationship between outcomes and transpersonal/relational items.	
Dependent Variable	Independent Variables
Interconnectedness change score	Transpersonal/relational 7 items (1 model including 7 variables)
Well-being change score	Transpersonal/relational 7 items (1 model including 7 variables)
Extended perception change score	Transpersonal/relational 7 items (1 model including 7 variables)
<i>Approach:</i> Nonparametric regression models were used because of mostly continuous transpersonal/relational variables, implemented with Stata <i>npregress</i> function (kernel-epanechnikov and bootstrap replications for estimation parameters)	

were calculated by subtracting the pre-score from the post-score for interconnectedness, well-being, and extended perception. These change scores were the dependent variable in all subsequent analyses. The Shapiro-Wilk test indicated that interconnectedness and well-being change scores were not normally distributed, while extended perception was. Therefore, nonparametric statistical tests were used to maintain consistency across analyses and for ease of result interpretation. Table 6 summarises the statistical analyses conducted for this research question.

Multiple comparisons were conducted with the False Discovery Rate corrected threshold of $p < 0.05$ (Benjamini & Hochberg, 1995) within each potential predictor category. For example, the p -values for the 10 Kruskal-Wallis nonparametric analysis of variance tests evaluating the association of the Noetic Experience items were adjusted for their False Discovery Rate. Effect sizes and 95% confidence intervals were calculated with effect size calculators (<https://effect-size-calculator.herokuapp.com>).

An exploration of sex, age, and race variables and the three item types (7 transformation, 10 noetic, and 8 transpersonal/relational) were also conducted. Sex and race were analyzed with the Kruskal-Wallis rank test for non-normally distributed continuous variables and Pearson's chi-squared test for binary variables; Age with the kernel-epanechnikov and bootstrap replications for estimation parameters for binary variables and a Spearman rank correlation for continuous variables.

Results

Reporting of results is organized with relevant outcomes under each of the four research questions.

Research Question #1: Do participants partaking in personal development workshops have a history of transformative experiences *prior to* attending a workshop, and what is their sense of transformation *after* such a workshop?

Transformative Experience Items

The Transformative Experiences items are listed in Table 3. Participants largely agreed ($M =$

72.1, $SD = 28.1$; *Not true for me* (0) to *Definitely true for me* (100)) that before their workshop, they had "experienced an important event(s) that negatively affected my life" and that this negative experience changed their "behavior or relationships" ($M = 72.5$, $SD = 25.9$; *Not true for me* (0) to *Definitely true for me* (100)). In addition, participants largely agreed ($M = 80.5$, $SD = 23.3$) that prior to their workshop they had a "moment of clarity or profound insight that changed my life" and that this moment had resulted in a change in their "behavior or relationships" ($M = 81.9$, $SD = 20.3$).

Concerning workshop experiences, participants largely agreed ($M = 79.0$, $SD = 20.3$) that they "feel like I have been positively changed as a result of this workshop." Seventy-four percent of the records (395 out of the 534 with only 512 answering this question) indicated that participants had "experienced a moment of clarity or profound insight during my workshop." Of these 395 records that endorsed a moment of clarity or profound insight, participants largely agreed ($M = 79.1$, $SD = 17.8$) that they "feel that my behavior and relationships will change as a result of this experience." These results support our hypothesis on this research question.

Research Question #2: Do participants of personal development workshops have noetic experiences during such a workshop?

Noetic Experience Items

Sixty-six percent of the survey records (350 out of 534) indicated that participants endorsed at least one noetic experience. Because participants could check more than one experience, 1,045 noetic experiences were endorsed (Table 7). The top three experiences during the workshop were of nonlocal consciousness ($n = 247$), gaining information without the use of the traditional five senses ($n = 162$), and intuitive hunches ($n = 147$). On average, people who checked at least one item also checked 3.0 ± 2.0 items (range 1–10). These results support our hypothesis on this research question.

Research Question #3: Do workshop participants have transpersonal or relationship experiences during such a workshop?

Transpersonal and Relational Items

Eighty-four percent of survey records (450 out of 534) endorsed at least one item on the Transpersonal and Relational Aspects items for a total of 1,633 endorsements (Table 5). The top three items endorsed were meaningful experiences with a person, place, or thing, a strong connection with the teacher, and a strong connection with other participants. On average, people who checked at least one item checked a total of 3.6 ± 2.1 items (range 1-8).

Since the item endorsing a “meaningful experience with a person, place, or thing” was not unique relative to other items in the survey (i.e., “strong connection with your teacher/workshop leader,” “strong connection with other participants,” and “meaning experience with an object (e.g., crystals on the land, art piece),” we also report these results excluding this item. Excluding this item, 77% percent of survey records (425 out of 534) endorsed at least one item on the remaining Transpersonal

and Relational Aspects items for a total of 1,314 endorsements. The top three items endorsed were a strong connection with the teacher, a strong connection with other participants, and a mystical or spiritual experience. On average, people who checked at least one item checked a total of 2.5 ± 2.1 items (range 0-7).

Again, these results support our hypothesis on this research question.

Research Question #4: Is the occurrence of transformative, noetic, and/or transpersonal/relational experiences during a personal development workshop associated with increased measures of interconnectedness and well-being after such a workshop?

Transformative Experience Items

None of the Transformative Experiences variables were significantly associated with the interconnectedness, well-being, or extended perception change scores ($p > .07$).

Table 7

Noetic Experience Items and their association with Interconnectedness, Well-Being, and Extended Perception change scores

Item	Interconnectedness Δ			Well-Being Δ			Extended Perception Δ							
	No		Yes <i>M</i> <i>SD</i>	<i>H</i> , <i>p</i>	No		Yes <i>M</i> <i>SD</i>	<i>H</i> , <i>p</i>	No		Yes <i>M</i> <i>SD</i>	<i>H</i> , <i>p</i>		
	<i>M</i>	<i>SD</i>			<i>M</i>	<i>SD</i>			<i>M</i>	<i>SD</i>			<i>M</i>	<i>SD</i>
PE1	0.5	1.8	0.5 1.5	0.32, 0.57	5.6	20.7	8.6	20.2	1.56, 0.21	-0.03	0.16	-0.02	0.19	0.58, 0.45
PE2	0.5	1.9	0.5 1.5	0.07, 0.79	5.6	19.5	7.5	21.6	1.36, 0.24	-0.03	0.16	-0.02	0.18	0.61, 0.43
PE3	0.5	1.8	-0.1 1.4	1.04, 0.31	6.3	20.5	16.9	23.3	1.5, 0.22	-0.02	0.17	0.03	0.2	0.47, 0.49
PE4	0.5	1.8	0.7 1.5	2.72, 0.10	5.9	20.5	8.6	20.7	0.83, 0.36	-0.02	0.17	-0.02	0.18	0.03, 0.87
PE5	0.4	1.7	0.9 1.9	2.81, 0.09	5.6	20.2	10.4	21.8	4.22, 0.04	-0.02	0.17	-0.03	0.18	0.28, 0.60
PE6	0.5	1.8	1.2 1.5	9.44, 0.002	5.7	20.2	17.3	22.7	6.89, 0.009	-0.02	0.17	-0.01	0.17	0.05, 0.82
PE7	0.4	1.7	0.7 1.8	1.95, 0.16	5.9	20.1	7.8	21.6	0.56, 0.46	-0.02	0.16	-0.04	0.18	0.79, 0.37
PE8	0.5	1.7	0.5 2.1	0.61, 0.44	6.4	20.2	6.9	22.3	0.13, 0.72	-0.02	0.17	-0.03	0.17	0.17, 0.68
PE9	0.5	1.8	0.8 1.6	4.06, 0.04	5.5	20.2	11.2	21.8	3.45, 0.06	-0.02	0.17	-0.04	0.18	1.12, 0.28
PE10	0.5	1.8	0.5 1.3	0.002, 0.96	6.5	20.6	6.2	20.6	0.06, 0.81	-0.03	0.17	0.01	0.16	2.74, 0.10

Note. The Noetic Experience items are displayed in Column 1 in numerical order. Column 2 lists the interconnectedness mean change and standard deviation for people who did not endorse that item, and column 3 lists the mean and standard deviation for people who did. Column 4 and 5 do the same for well-being change, and column 6 and 7 for extended perception change. *H* = the test statistic for the Kruskal-Wallis nonparametric ANOVA with the *p*-value. Bolded *p*-values are below 0.05. Bolded and italicized *p*-values are still significant with a False Discovery Rate correction for multiple comparisons. The correction was made at alpha 0.05 level for each variable's 10 comparisons (interconnectedness, well-being, extended perception).

Noetic Experience Items

The mean change and standard deviations of the interconnectedness, well-being, and extended perception change scores for participants who did and did not endorse each noetic experience item are displayed in Table 7 along with the statistic and *p*-value. One of the items included in the Noetic Experience Scale, perceiving “contact with the dead” during the workshop, was significantly associated with increased interconnectedness scores (*p* = .002). These were the only associations to survive multiple comparison corrections. While two noetic experience items were associated with well-being changes, the relationship was not significant after multiple comparison correction. Thus, these results partly support our hypothesis that at least one noetic experience item would be associated with interconnectedness (supported) and well-being change (not supported). There were no associations with extended perception change, as predicted.

Transpersonal and Relational Items

The mean change and standard deviations of the interconnectedness, well-being, and extended perception change scores for participants who did and did not endorse each transpersonal/relational experience item, are displayed in Table 8 along with the statistic and *p*-value. A meaningful experience with wildlife or animals was significantly associated with increased interconnectedness scores (*p* = .004). A meaningful experience with a person, place, or thing was significantly associated

Table 8 *Transpersonal and Relational Items and their association with Interconnectedness, Well-Being, and Extended Perception change scores*

Item	Interconnectedness Δ			Well-being Δ			Extended Perception Δ		
	No M	Yes M	<i>H</i> , <i>p</i>	No M	Yes M	<i>H</i> , <i>p</i>	No M	Yes M	<i>H</i> , <i>p</i>
Meaningful experience with a person, place or thing	0.3	0.7	5.94, 0.02	2.8	8.8	9.08, 0.003	-0.03	-0.02	0.26, 0.61
Strong connection with your teacher workshop leader	0.5	0.6	0.06, 0.82	5.4	7.5	2.05, 0.15	-0.02	-0.03	0.27, 0.61
Strong connection with other participants	0.6	0.4	2.97, 0.59	5.0	8.5	1.65, 0.20	-0.03	-0.02	0.20, 0.66
A mystical or spiritual experience	0.5	0.5	1.28, 0.26	5.6	8.0	0.86, 0.35	-0.02	-0.03	1.04, 0.31
Meaningful connection with wildlife/ animals	0.4	0.8	8.35, 0.004	4.9	9.4	4.70, 0.03	-0.03	-0.02	0.35, 0.55
Difficult or challenging moments	0.4	0.7	1.39, 0.24	5.4	9.0	2.93, 0.09	-0.03	-0.01	3.01, 0.08
Deep connection with nature	0.4	0.8	4.20, 0.04	5.7	8.1	1.53, 0.22	-0.03	-0.01	0.27, 0.61
Meaningful experience with an object (e.g., crystals on the land, art piece)	0.4	0.8	3.09, 0.08	5.6	9.8	2.70, 0.10	-0.02	-0.03	0.27, 0.61

Note. The Transpersonal and Relational Aspects items are displayed in Column 1. Column 2 lists the mean displayed above the standard deviation for people who did not endorse that item, and column 3 lists the mean displayed above the standard deviation for people who did. *H* = the test statistic for the Kruskal-Wallis nonparametric ANOVA displayed above the *p*-value. Bolded *p*-values are below 0.05. Bolded and italicized *p*-values are still significant with a False Discovery Rate correction for multiple comparisons. The correction was made at alpha 0.05 level for the eight comparisons of each variable (interconnectedness, well-being, extended perception).

with increased well-being scores ($p = .003$). These two significant results support our hypothesis that at least one transpersonal/relational item would be associated with interconnectedness and well-being changes. As predicted, there were no significant associations with extended perception.

Please see Supplemental Data for the statistical output of regression models.

Demographic Influence

There were no differences by sex on any of the items after multiple comparison correction: transformation items p -values 0.45 to 0.89; noetic items p -values 0.32 to 0.99; transpersonal items p -values 0.04 to 0.96. Age had a significant relationship with multiple items. For the noetic items, participants who endorsed "An experience that my consciousness is not limited by my physical brain or body" were slightly younger on average (endorsed 53.7 ± 12.7 ; no endorsement 56.5 ± 13.1 ; observed estimate -0.49 , $p = 0.01$). Similarly, younger participants endorsed connection with teacher (endorsed 53.6 ± 13.2 ; no endorsement 56.8 ± 12.6 ; observed estimate $= -0.80$, $p = 0.03$), meaningful experience with wildlife (endorsed 53.1 ± 12.9 ; no endorsement 56.4 ± 12.9 ; observed estimate $= -0.64$, $p = 0.04$), experienced difficult or challenging moments (endorsed 52.9 ± 13.0 ; no endorsement 56.3 ± 12.8 ; observed estimate $= -0.68$, $p = 0.03$), connection with nature (endorsed 53.1 ± 12.8 ; no endorsement 56.2 ± 12.9 ; observed estimate $= -0.55$, $p = 0.05$), and mystical or spiritual experience (endorsed 53.5 ± 13.2 ; no endorsement 56.2 ± 12.7 ; observed estimate $= -0.70$, $p = 0.03$). Race was not significant for any items: transformation items p -values 0.13 to 0.96; noetic items p -values 0.19 to 0.86; transpersonal items p -values 0.20 to 0.94).

Discussion

Participants included in this study may have been *open* to experiencing a transformational experience. Openness has been seen as a critical feature of self-transformation following a major life event. By being open to the transcendent and others, one can let go and transform (Lancaster & Palframan, 2009). Also, previous research has shown that transformational changes are often preceded by negative life events or emotional distress (Bray,

2013; Heatherston & Weinberger, 1994; Taylor, 2013). Given the exploratory nature of this uncontrolled prospective study, we cannot tease apart whether this history of transformative experiences impacted how the participants experienced their respective workshops. Nevertheless, across a wide variety of workshop types, participants reported aspects of a transformative experience.

Another important aspect of the study participants is that they were skewed by sex, age, education, race, wealth, and health. Thus, it was not a representative sample of the people in the United States. The sample does, however, reflect the characteristics of people who engage in various personal growth practices such as mental health services (Terlizzi and Zablotsky, 2020) and complementary and integrative medicine (Clarke et al., 2015). For example, women having increased help-seeking than men is well-documented in the literature (Galdas et al., 2005). Similarly, socioeconomic advantage has been associated with multiple measures of psychological health (Kaplan et al., 2005), and one could infer that having extra income to pay for personal growth workshops is a luxury of those with greater socioeconomic resources (i.e., time, money, social support). Participants in our study were also skewed in that a majority of them were meditators. Meditators in the US are estimated at approximately 14% (Clarke et al., 2018). Personal growth workshops with meditation as part of the workshop content predicted well-being improvements in the parent study (Wahbeh et al., 2022) and the evidence for the health benefits of meditation for various mental and physical health conditions is growing (Kim et al., 2022). About half the workshops included in the study included some type of meditation practice (Wahbeh et al., 2022). Our study did not evaluate if being a meditator engaged in personal development predicts greater improvement from the workshop when meditation is and is not included. The relationships between being a meditator, meditation practice during the workshop, and outcome improvements could be explored in future studies.

The top two noetic experiences endorsed in the present study were experiencing one's consciousness as not limited by one's physical

brain or body and receiving information through means not depending on normal sensory channels. Transformation is thought to include a shift in consciousness and involve a more intuitive interconnected relationship with the surrounding world, one that is not limited by space and time. The subjective experience of consciousness expanding beyond our physical brain and body, such as through out-of-body experiences, shamanic journeys, and transcendent states, has been documented throughout human history (Wahbeh, Sagher, et al., 2018). While often not discussed, these experiences are quite common (Wahbeh, Radin, et al., 2018; Wahbeh, Yount, et al., 2020). The endorsement by participants of numerous noetic experiences that involve consciousness expanding beyond the limits of our traditional five senses sheds light on the commonness of these experiences and their transformative potential. In terms of the present study, transformation essentially involves an expansion of one's consciousness beyond the limits of space and time. It involves noetic wisdom.

Interestingly, one item included in the Noetic Experience Scale—perceiving contact with the dead during the workshop—was significantly associated with increased interconnectedness. This item was endorsed by 34 participants who partook in 15 different workshops with varying content. Thus, the workshop content likely did not determine this item's endorsement. Perception of contact with the dead is common worldwide, with prevalence ranging from 25% to 66% of people surveyed (Wahbeh, Radin, et al., 2018). A recent study created a detailed characterization of the sensory nature of these experiences from the responses of 991 viable cases and reported 46% visual, 44% auditory, 48% touch, and 28% olfactory, with 34% sensing the presence of the deceased without input from the five senses (Woollacott et al., 2021). Many people benefit from these experiences (Moreira-Almeida & Cardeña, 2011; Wahbeh & Butzer, 2020; Wahbeh et al., 2019; Wahbeh & Radin, 2018). For example, contact with the dead through mediumship sessions has supported the grief process and grief resolution (Beischel, 2014, 2019; Beischel et al., 2015). Furthermore, a recent study found that after-death communications were perceived as positive

life experiences and increased reported spirituality (Kalelioglu et al., 2021). Moreover, the growing de-pathologizing of communication with the dead as hallucinations enables people to share their experiences and feel a sense of a community that understands them (Kwilecki, 2009). The present unexpected finding of an association of the noetic measure of perceived contact with the dead with increased interconnectedness suggests that further study is warranted to explore these associations more thoroughly.

This finding of an association between perceived contact with the dead and a sense of interconnectedness is interesting given that in our original study (Wahbeh et al., 2022), we investigated measures of extended perception in addition to interconnectedness and well-being. The extended perception task was included in the present study because it had significant findings in the parent study, but in the opposite direction than expected. That is, participants' performance on the task was significantly worse than chance. These results are noteworthy since extended perception frequently manifests as either significantly below or above chance, both representing deviation from what would be expected (Rhine, 1969). Thus, the extended perception task was included in these exploratory analyses but had no associations with any of the transformation, noetic, or interpersonal/relational items. Future research will continue to evaluate the nuances of evaluating extended perception through laboratory tasks, and the factors that moderate performance warrant further research.

Transformation is thought to include a shift in consciousness and involve a more intuitive interconnected relationship with the surrounding world not limited by space and time. Part of a transformative or awakening experience is transcending "our normal sense of separateness from the world" (Taylor, 2012a, p. 74). The top two transpersonal and relational experiences endorsed were a meaningful experience with a person, place, or thing and a strong connection with the workshop leader. Experiencing connections within a group, such as during a personal development workshop, can provide a sense of meaning, purpose,

and belonging, which has positive psychological consequences (Haslam et al., 2009). The parent study analyses (Wahbeh et al., 2022) found that a sense of interconnectedness and well-being significantly increased after a workshop. Here we report that the Transpersonal and Relational Aspects item endorsing a meaningful experience with wildlife or animals was associated with increased post-workshop interconnectedness. In addition, the item indicating a meaningful experience with a person, place, or thing was associated with increased post-workshop well-being. Through technology, our apparent interconnectedness is at its historic peak. However, we are also more disconnected than ever, with increasing levels of loneliness impacting mental and physical well-being (Holt-Lunstad et al., 2015). Findings that transpersonal experiences predict increases in the sense of interconnectedness and well-being suggest that positive psychological consequences arise from connectedness within a group, such as those during personal development workshops.

The finding that a meaningful experience with wildlife or animals was associated with increased interconnectedness is not surprising (Brymer et al., 2020; Schertz & Berman, 2019; Schultz, 2002; Schultz et al., 2004). Ecopsychology, a growing field of psychology, emphasizes interconnectedness between people, land, and space and points to health and well-being as inseparable components of an awareness of a larger whole (Conn, 1998). Connection to nature is essential in our modern and increasingly urban world. After experiencing a sense of wonder in a tide pool, William Stapp, former UNESCO director of environmental education, created the Global Rivers Environmental Education Network that trained thousands of young people worldwide to monitor water quality (Stapp et al., 1996). Dowdall interviewed 126 people who had some extraordinary experience with nature as children or adults, 68% of whom felt this experience was an integral root of their being and a reason why they retreated to nature to heal (Swan, 2010). Other researchers have traced the dedication of conservationists to exceptional emotional experiences in nature (Swan, 2010). We did not formally collect whether all workshops were held in natural settings with wildlife or animals and thus, are

uncertain whether the opportunity to connect with wildlife or animals was consistent across workshops. The workshops format of “outside in nature” and content of “nature practices” were not associated of interconnectedness or well-being improvements in the parent study (Wahbeh et al., 2022). Future research can continue to explore the potential benefits of human-animal interactions.

Limitations and Suggestions for Future Research

One important factor that these exploratory analyses cannot address is whether any transformational changes were long-lasting. Transformation implies long-lasting changes, a leap in one’s perspective and relationships. Vieten et al. (2006) defined transformation as a profound shift in one’s experience of consciousness resulting in long-lasting shifts in worldview or ways of being and changes in the general pattern of the way one experiences and relates to oneself, others, and the world. Many participants largely agreed that their behavior and relationships would change as a result of their workshop experience. However, the post-workshop surveys were completed within a week of workshop completion. Future studies should include a long-term follow-up to investigate whether changes people anticipate from personal development workshops come to fruition.

Several other limitations of this study should be considered. As discussed, these analyses were exploratory and from a prospective uncontrolled study. Therefore, no definitive conclusions should be assumed from the results. In addition, workshop types and lengths were highly variable, ranging from a few hours to 10 months. There were not enough participants to evaluate the influence of transformative, noetic, transpersonal/relationship variables on the outcome measures by workshop type. Not all participants who attended the workshops completed the surveys. Thus, they were a self-selected sample introducing all the inherent biases associated with self-selected samples. These participants were most likely invested in their workshop experience and could introduce a positive bias to the reported results. Because most of the workshops were conducted by independent workshop leaders, we did not have access to the number of participants taking the course versus the

number who completed the survey. Future studies would benefit from collecting this data, in addition to evaluating if having the workshops on-campus versus off-campus influence the results. In addition to being self-selected, our sample was not balanced for sex, age, or race. We did analyze if these demographic variables, but only age was found to have an influence, with slightly younger participants endorsing more noetic and transpersonal/relational items. However, since our sample was skewed older, the difference was not very meaningful. Future studies should include more balanced samples to thoroughly examine these factors. Furthermore, many of the included items and instruments do not have statistical norms. Therefore, we could not ascertain how our sample's values compared to normative data. Our dataset also had missing data because participants could skip a question. Methods to deal with missing data such as multiple imputation were not used to complete missing data and should be considered in future study designs. Last, the questionnaires were administered in the same order before and after the workshops. Future studies would benefit from randomizing the order of questionnaire administration to avoid any order effects.

As with any survey study, there are nuances to participant's experiences that are not captured. Future research on transformative, noetic, and transpersonal/relational experiences in the context of personal development workshops would benefit from the rich and nuanced data of qualitative analysis to examine these results more fully. For example, willing participants could be allowed an unlimited free text space after the survey to describe their experiences in more detail. Also, a study performing in-depth interviews of workshop participants could be conducted.

Conclusions

People seek out personal development workshops for many reasons. The exploratory analyses presented here support the idea that engaging in a personal development workshop can be positively transformative. We have also shown that transpersonal and noetic experiences are common during these workshops. Today, many people seek authentic and meaningful experiences in which a deep sense of connection and

transformation is achieved (Thurston & Kuile, 2015). As the personal development market continues to grow, understanding the transformational impact of these opportunities is essential. ¹

Conflicts of Interest and Source of Funding

This work was supported by the John Brockway Huntington Foundation and Patricia Beck Phillips Foundation. The authors have no conflicts of interest to disclose.

Ethics Statement

The study was conducted according to acceptable research standards, including having obtained informed consent of study subjects. All study activities were approved by the Institute of Noetic Sciences Institutional Review Board.

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author, HW, upon reasonable request.

Notes

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Appendix Supplemental Data Statistical Output

kwallis Intchg, by(binPE1_2)

Kruskal-Wallis equality-of-populations rank test

binPE1_2	Obs	Rank Sum
0.00		
1.00		

chi-squared = **0.322** with 1 d.f.
probability = **0.5706**

chi-squared with ties = **0.322** with 1 d.f. probability = **0.5705**

kwallis Intchg, by(binPE2_2)

Kruskal-Wallis equality-of-populations rank test

binPE2_2	Obs	Rank Sum
0.00		
1.00		

chi-squared = **0.069** with 1 d.f.
probability = **0.7931**

chi-squared with ties = **0.069** with 1 d.f. probability = **0.7930**

kwallis Intchg, by(binPE3_2)

Kruskal-Wallis equality-of-populations rank test

binPE3_2	Obs	Rank Sum
0.00	515	
1.00	7	

chi-squared = **1.039** with 1 d.f.
probability = **0.3081**

chi-squared with ties = **1.039** with 1 d.f. probability = **0.3080**

kwallis Intchg, by(binPE4_2)

Kruskal-Wallis equality-of-populations rank test

binPE4_2	Obs	Rank Sum
0.00		
1.00		29736.00

chi-squared = **2.721** with 1 d.f.
probability = **0.0991**

chi-squared with ties = **2.722** with 1 d.f. probability = **0.0990**

kwallis Intchg, by(binPE5_2)

Kruskal-Wallis equality-of-populations rank test

binPE5_2	Obs	Rank Sum
0.00		
1.00	93	26530.00

chi-squared = **2.810** with 1 d.f.
probability = **0.0937**

chi-squared with ties = **2.811** with 1 d.f. probability = **0.0936**

kwallis Intchg, by(binPE6_2)

Kruskal-Wallis equality-of-populations rank test

binPE6_2	Obs	Rank Sum
0.00		
1.00	34	11503.50

chi-squared = **9.438** with 1 d.f.
probability = **0.0021**

chi-squared with ties = **9.443** with 1 d.f. probability = **0.0021**

kwallis Intchg, by(binPE7_2)

Kruskal-Wallis equality-of-populations rank test

binPE7_2		Rank Sum
0.00		
1.00		

chi-squared = **1.947** with 1 d.f.
probability = **0.1629**

chi-squared with ties = **1.948** with 1 d.f. probability = **0.1628**

kwallis AIOSchg, by(binPE1_2)

Kruskal-Wallis equality-of-populations rank test

binPE1_2		Rank Sum
0.00		
1.00		

chi-squared = **1.561** with 1 d.f.
probability = **0.2116**

chi-squared with ties = **1.561** with 1 d.f. probability = **0.2115**

kwallis Intchg, by(binPE8_2)

Kruskal-Wallis equality-of-populations rank test

binPE8_2		Rank Sum
0.00		
1.00	80	19951.50

chi-squared = **0.609** with 1 d.f.
probability = **0.4353**

chi-squared with ties = **0.609** with 1 d.f. probability = **0.4352**

kwallis AIOSchg, by(binPE2_2)

Kruskal-Wallis equality-of-populations rank test

binPE2_2		Rank Sum
0.00		
1.00		

chi-squared = **1.359** with 1 d.f.
probability = **0.2437**

chi-squared with ties = **1.359** with 1 d.f. probability = **0.2437**

kwallis Intchg, by(binPE9_2)

Kruskal-Wallis equality-of-populations rank test

binPE9_2		Rank Sum
0.00		
1.00	89	25886.00

chi-squared = **4.064** with 1 d.f.
probability = **0.0438**

chi-squared with ties = **4.066** with 1 d.f. probability = **0.0438**

kwallis AIOSchg, by(binPE3_2)

Kruskal-Wallis equality-of-populations rank test

binPE3_2	Obs	Rank Sum
0.00	484	
1.00	7	

chi-squared = **1.540** with 1 d.f.
probability = **0.2146**

chi-squared with ties = **1.541** with 1 d.f. probability = **0.2145**

kwallis Intchg, by(binPE10_2)

Kruskal-Wallis equality-of-populations rank test

binP~0_2		Rank Sum
0.00		
1.00	73	19036.50

chi-squared = **0.002** with 1 d.f.
probability = **0.9643**

chi-squared with ties = **0.002** with 1 d.f. probability = **0.9643**

kwallis AIOSchg, by(binPE4_2)

Kruskal-Wallis equality-of-populations rank test

binPE4_2		Rak Sum
0.00		
1.00	99	

chi-squared = **0.833** with 1 d.f.
probability = **0.3615**

chi-squared with ties = **0.833** with 1 d.f. probability = **0.3614**

kwallis AIOSchg, by(binPE5_2)

Kruskal-Wallis equality-of-populations rank test

binPE5_2		Rank Sum
0.00		
1.00	92	

chi-squared = **4.219** with **1** d.f.
probability = **0.0400**

chi-squared with ties = **4.221** with **1** d.f. probability = **0.0399**

kwallis AIOSchg, by(binPE9_2)

Kruskal-Wallis equality-of-populations rank test

binPE9_2		Rank Sum
0.00		
1.00	82	

chi-squared = **3.447** with **1** d.f.
probability = **0.0634**

chi-squared with ties = **3.448** with **1** d.f. probability = **0.0633**

kwallis AIOSchg, by(binPE6_2)

Kruskal-Wallis equality-of-populations rank test

binPE6_2		Rank Sum
0.00		
1.00	33	10183.50

chi-squared = **6.885** with **1** d.f.
probability = **0.0087**

chi-squared with ties = **6.887** with **1** d.f. probability = **0.0087**

kwallis AIOSchg, by(binPE10_2)

Kruskal-Wallis equality-of-populations rank test

binP~0_2		Rank Sum
0.00		
1.00	70	16949.50

chi-squared = **0.061** with **1** d.f.
probability = **0.8055**

chi-squared with ties = **0.061** with **1** d.f. probability = **0.8055**

kwallis AIOSchg, by(binPE7_2)

Kruskal-Wallis equality-of-populations rank test

binPE7_2		Rank Sum
0.00		
1.00		

chi-squared = **0.556** with **1** d.f.
probability = **0.4560**

chi-squared with ties = **0.556** with **1** d.f. probability = **0.4559**

kwallis RVchg, by(binPE1_2)

Kruskal-Wallis equality-of-populations rank test

binPE1_2		Rank Sum
0.00		
1.00		

chi-squared = **0.577** with **1** d.f.
probability = **0.4474**

chi-squared with ties = **0.596** with **1** d.f. probability = **0.4399**

kwallis AIOSchg, by(binPE8_2)

Kruskal-Wallis equality-of-populations rank test

binPE8_2		Rank Sum
0.00		
1.00	76	19104.50

chi-squared = **0.129** with **1** d.f.
probability = **0.7194**

chi-squared with ties = **0.129** with **1** d.f. probability = **0.7194**

kwallis RVchg, by(binPE2_2)

Kruskal-Wallis equality-of-populations rank test

binPE2_2		Rank Sum
0.00		
1.00		

chi-squared = **0.607** with **1** d.f.
probability = **0.4358**

chi-squared with ties = **0.628** with **1** d.f. probability = **0.4283**

kwallis RVchg, by(binPE3_2)

Kruskal-Wallis equality-of-populations rank test

binPE3_2	Obs	Rank Sum
0.00	474	
1.00	7	

chi-squared = **0.469** with 1 d.f.
probability = **0.4935**

chi-squared with ties = **0.485** with 1 d.f. probability = **0.4864**

kwallis RVchg, by(binPE4_2)

Kruskal-Wallis equality-of-populations rank test

binPE4_2		Rank Sum
0.00		
1.00	97	

chi-squared = **0.028** with 1 d.f.
probability = **0.8676**

chi-squared with ties = **0.029** with 1 d.f. probability = **0.8654**

kwallis RVchg, by(binPE5_2)

Kruskal-Wallis equality-of-populations rank test

binPE5_2		Rank Sum
0.00		
1.00	84	

chi-squared = **0.278** with 1 d.f.
probability = **0.5979**

chi-squared with ties = **0.287** with 1 d.f. probability = **0.5919**

kwallis RVchg, by(binPE6_2)

Kruskal-Wallis equality-of-populations rank test

binPE6_2		Rank Sum
0.00		
1.00	32	

chi-squared = **0.050** with 1 d.f.
probability = **0.8239**

chi-squared with ties = **0.051** with 1 d.f. probability = **0.8210**

kwallis RVchg, by(binPE7_2)

Kruskal-Wallis equality-of-populations rank test

binPE7_2		Rank Sum
0.00		
1.00		

chi-squared = **0.790** with 1 d.f.
probability = **0.3741**

chi-squared with ties = **0.816** with 1 d.f. probability = **0.3663**

kwallis RVchg, by(binPE8_2)

Kruskal-Wallis equality-of-populations rank test

binPE8_2		Rank Sum
0.00		
1.00	72	

chi-squared = **0.166** with 1 d.f.
probability = **0.6841**

chi-squared with ties = **0.171** with 1 d.f. probability = **0.6792**

kwallis RVchg, by(binPE9_2)

Kruskal-Wallis equality-of-populations rank test

binPE9_2		Rank Sum
0.00		
1.00	83	

chi-squared = **1.120** with 1 d.f.
probability = **0.2899**

chi-squared with ties = **1.157** with 1 d.f. probability = **0.2821**

kwallis RVchg, by(binPE10_2)

Kruskal-Wallis equality-of-populations rank test

binP~0_2		Rank Sum
0.00		
1.00	67	

chi-squared = **2.742** with 1 d.f.
probability = **0.0977**

chi-squared with ties = **2.833** with 1 d.f. probability = **0.0923**

kwallis Intchg, by(expCxnTeach)

Kruskal-Wallis equality-of-populations rank test

expCxn~h		Rank Sum
0.00		
1.00		

chi-squared = **0.055** with **1** d.f.
probability = **0.8150**

chi-squared with ties = **0.055** with **1** d.f. probability = **0.8150**

kwallis Intchg, by(expCxnPpt)

Kruskal-Wallis equality-of-populations rank test

expCxn~pt		Rank Sum
0.00		
1.00		

chi-squared = **0.297** with **1** d.f.
probability = **0.5855**

chi-squared with ties = **0.298** with **1** d.f. probability = **0.5854**

kwallis Intchg, by(expMnExp_wldan)

Kruskal-Wallis equality-of-populations rank test

expMnE~n		Rank Sum
0.00		
1.00		

chi-squared = **8.345** with **1** d.f.
probability = **0.0039**

chi-squared with ties = **8.349** with **1** d.f. probability = **0.0039**

kwallis Intchg, by(expDfcltChall)

Kruskal-Wallis equality-of-populations rank test

expDfc~l		Rank Sum
0.00		
1.00		

chi-squared = **1.389** with **1** d.f.
probability = **0.2386**

chi-squared with ties = **1.390** with **1** d.f. probability = **0.2384**

kwallis Intchg, by(expMnExpO)

Kruskal-Wallis equality-of-populations rank test

expMnE~O		Rank Sum
0.00		
1.00		29076.50

chi-squared = **3.094** with **1** d.f.
probability = **0.0786**

chi-squared with ties = **3.096** with **1** d.f. probability = **0.0785**

kwallis Intchg, by(expCxnNat)

Kruskal-Wallis equality-of-populations rank test

expCxn~at		Rank Sum
0.00		
1.00		

chi-squared = **4.204** with **1** d.f.
probability = **0.0403**

chi-squared with ties = **4.206** with **1** d.f. probability = **0.0403**

kwallis Intchg, by(expMnExpPP)

Kruskal-Wallis equality-of-populations rank test

expMnE~P		Rank Sum
0.00		
1.00		

chi-squared = **5.940** with **1** d.f.
probability = **0.0148**

chi-squared with ties = **5.943** with **1** d.f. probability = **0.0148**

kwallis Intchg, by(expMysSpir)

Kruskal-Wallis equality-of-populations rank test

expMys~r		Rank Sum
0.00		
1.00		

chi-squared = **1.284** with **1** d.f.
probability = **0.2571**

chi-squared with ties = **1.285** with **1** d.f. probability = **0.2570**

kwallis AIOSchg, by(expCxnTeach)

Kruskal-Wallis equality-of-populations rank test

expCxn~h		Rank Sum
0.00		
1.00		

chi-squared = **2.048** with **1** d.f.
probability = **0.1524**

chi-squared with ties = **2.048** with **1** d.f. probability = **0.1524**

kwallis AIOSchg, by(expMnExp_wldan)

Kruskal-Wallis equality-of-populations rank test

expMnE~n		Rank Sum
0.00		
1.00		

chi-squared = **4.695** with **1** d.f.
probability = **0.0303**

chi-squared with ties = **4.696** with **1** d.f. probability = **0.0302**

kwallis AIOSchg, by(expMnExpO)

Kruskal-Wallis equality-of-populations rank test

expMnE~O		Rank Sum
0.00		
1.00	99	

chi-squared = **2.706** with **1** d.f.
probability = **0.1000**

chi-squared with ties = **2.707** with **1** d.f. probability = **0.0999**

kwallis AIOSchg, by(expMnExpPP)

Kruskal-Wallis equality-of-populations rank test

expMnE~P		Rank Sum
0.00		
1.00		

chi-squared = **9.081** with **1** d.f.
probability = **0.0026**

chi-squared with ties = **9.085** with **1** d.f. probability = **0.0026**

kwallis AIOSchg, by(expCxnPpt)

Kruskal-Wallis equality-of-populations rank test

expCxn~pt		Rank Sum
0.00		
1.00		

chi-squared = **1.649** with **1** d.f.
probability = **0.1990**

chi-squared with ties = **1.650** with **1** d.f. probability = **0.1989**

kwallis AIOSchg, by(expDfctChall)

Kruskal-Wallis equality-of-populations rank test

expDfc~1		Rank Sum
0.00		
1.00		

chi-squared = **2.925** with **1** d.f.
probability = **0.0872**

chi-squared with ties = **2.926** with **1** d.f. probability = **0.0871**

kwallis AIOSchg, by(expCxnNat)

Kruskal-Wallis equality-of-populations rank test

expCxn~at		Rank Sum
0.00		
1.00		

chi-squared = **1.527** with **1** d.f.
probability = **0.2166**

chi-squared with ties = **1.527** with **1** d.f. probability = **0.2165**

kwallis AIOSchg, by(expMysSpir)

Kruskal-Wallis equality-of-populations rank test

expMys~r		Rank Sum
0.00		
1.00		

chi-squared = **0.857** with **1** d.f.
probability = **0.3545**

chi-squared with ties = **0.858** with **1** d.f. probability = **0.3544**

kwallis RVchg, by(expCxnTeach)

Kruskal-Wallis equality-of-populations rank test

expCxn~h		Rank Sum
0.00		
1.00		

chi-squared = **0.268** with **1** d.f.
probability = **0.6049**

chi-squared with ties = **0.277** with **1** d.f. probability = **0.5990**

kwallis RVchg, by(expMnExp_wldan)

Kruskal-Wallis equality-of-populations rank test

expMnE~n		Rank Sum
0.00		
1.00		

chi-squared = **0.351** with **1** d.f.
probability = **0.5534**

chi-squared with ties = **0.363** with **1** d.f. probability = **0.5469**

kwallis RVchg, by(expMnExpO)

Kruskal-Wallis equality-of-populations rank test

expMnE~O		Rank Sum
0.00		
1.00	94	

chi-squared = **0.268** with **1** d.f.
probability = **0.6048**

chi-squared with ties = **0.277** with **1** d.f. probability = **0.5989**

kwallis RVchg, by(expMnExpPP)

Kruskal-Wallis equality-of-populations rank test

expMnE~P		Rank Sum
0.00		
1.00		

chi-squared = **0.264** with **1** d.f.
probability = **0.6077**

chi-squared with ties = **0.272** with **1** d.f. probability = **0.6018**

kwallis RVchg, by(expCxnPpt)

Kruskal-Wallis equality-of-populations rank test

expCxn~pt		Rank Sum
0.00		
1.00		

chi-squared = **0.196** with **1** d.f.
probability = **0.6579**

chi-squared with ties = **0.203** with **1** d.f. probability = **0.6526**

kwallis RVchg, by(expDfctChall)

Kruskal-Wallis equality-of-populations rank test

expDfc~1		Rank Sum
0.00		
1.00		

chi-squared = **3.005** with **1** d.f.
probability = **0.0830**

chi-squared with ties = **3.105** with **1** d.f. probability = **0.0781**

kwallis RVchg, by(expCxnNat)

Kruskal-Wallis equality-of-populations rank test

expCxn~at		Rank Sum
0.00		
1.00		

chi-squared = **0.267** with **1** d.f.
probability = **0.6057**

chi-squared with ties = **0.275** with **1** d.f. probability = **0.5998**

kwallis RVchg, by(expMysSpir)

Kruskal-Wallis equality-of-populations rank test

expMys~r		Rank Sum
0.00		
1.00		

chi-squared = **1.036** with **1** d.f.
probability = **0.3088**

chi-squared with ties = **1.070** with **1** d.f. probability = **0.3**

. npregress kernel Intchg Tab1 Tab1a Tab2 Tab2a PosChg_2 i.ClarIns_2 BehChg_2 , rep(200) seed(12) (running npregress on estimation sample)

Bootstrap replications (200)

	1	2	3	4	5
.....					50
.....					100
.....					150
.....					200

Bandwidth

	Mean	Effect
Tab1	14.55426	17.2354
Tab1a	14.08746	16.68261
Tab2	10.59493	12.54669
Tab2a	10.57173	12.51922
PosChg_2	8.521766	10.09162
BehChg_2	9.720143	11.51075

Local-linear regression	Number of obs				318
Kernel: epanechnikov	E(Kernel obs)			=	318
Bandwidth: cross validation	R-squared				0.5674

Intchg		Observed Estimate	Bootstrap Std. Err.	z	P> z	Percentile [95% Conf. Interval]	
Mean	Intchg	.5803884	.0984153	5.90	0.000	.3372844	.7199953
Effect		.0069601	.0139097	0.50	0.617	-.0229641	.0256534
		-.0044402	.0144653	-0.31	0.759	-.0297797	.0198837
		-.0529477	.0429839	-1.23	0.218	-.1004519	.00905
		.0242612	.0454555	0.53	0.594	-.0376203	.0751174
		.0076854	.0186869	0.41	0.681	-.0309573	.0398459
		.0003393	.0165638	0.02	0.984	-.0258327	.0326395

BehChg_2

Note: Effect estimates are averages of derivatives.

. npregress kernel AIOSchg Tab1 Tab1a Tab2 Tab2a PosChg_2 i.ClarlIns_2 BehChg_2 , rep(200) seed(12)
 (running npregress on estimation sample)

Bootstrap replications (200)

	1	2	3	4	5
.....					50
.....					100
.....					150
.....					200

Bandwidth

Local-linear regression	Number of obs				305
Kernel : epanechnikov	E(Kernel obs)			=	305
Bandwidth: cross validation	R-squared				0.5138

AIOSchg	Observed Estimate	Bootstrap Std. Err.	z	P> z	Percentile [95% Conf. Interval]	
AIOSchg	7.175089	1.537348	4.67	0.000	4.625886	10.74382
Effect	.1637236	.177435	0.92	0.356	-.234718	.4510139
	.0532172	.1674649	0.32	0.751	-.2932535	.3596082
	-.2003996	.3044436	-0.66	0.510	-.8328151	.3563182
	-.1607902	.2853462	-0.56	0.573	-.7144182	.3507461
	-.0806032	.3552827	-0.23	0.821	-.7273228	.5795112
	.3604945	.7412728	0.49	0.627	-.2790117	.6430043

Note: Effect estimates are averages of derivatives.

. npregress kernel RVchg Tab1 Tab1a Tab2 Tab2a PosChg_2 BehChg_2 , rep(200) seed(12) (running npregress on estimation sample)

Bootstrap replications (200)

```

      1      2      3      4      5
.....
..... 50
..... 100
..... 150
..... 200

```

Bandwidth

	Mean	Effect
Tab1	14.58364	17.4355
Tab1a	13.86592	16.57743
Tab2	10.36216	12.3885
Tab2a	10.45612	12.50083
PosChg_2	8.587649	10.26698
BehChg_2	10.07094	12.04033

Local-linear regression	Number of obs				294
Kernel : epanechnikov	E(Kernel obs)		=		294
Bandwidth: cross validation	R-squared				0.4536

RVchg	Observed Estimate	Bootstrap Std. Err.	z	P> z	Percentile [95% Conf. Interval]	
Mean						
RVchg	-.0305058	.011155	-2.73	0.006	-.0524955	-.0108098
Effect						
	.0019305	.0017146	1.13	0.260	-.0011902	.0044971
	-.0026129	.001447	-1.81	0.071	-.0046561	.0003831
	-.0000671	.0051271	-0.01	0.990	-.0092525	.006027
	-.0015207	.0053113	-0.29	0.775	-.0087131	.0063371
	.0026083	.0046358	0.56	0.574	-.0017141	.0065267
	-.0006388	.0016281	-0.39	0.695	-.0031166	.002461

Note: Effect estimates are averages of derivati

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