A developmental and multi-level frame for somatic practice: from neuron to nation

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Abstract

The ongoing exploration of the human nervous system, particularly informed by Stephen Porges' Polyvagal theory, draws attention to the roles of the vagus nerve and the importance of interpersonal relationships in therapeutic settings. This paper presents a perspective that seeks to integrate principles from somatic psychology with insights from developmental, evolutionary and contemplative sciences, offering a potential framework for enhancing trauma-healing methodologies. We introduce the "Relational Embodiment" 2-weeks residency program as a case study and delineate an ecology of practices across the Self, Dyadic, Group, and Community levels. These incorporate meditation, individual therapy, group sessions, and collective tasks, suggesting an encompassing multi-level therapeutic model. To ensure a depth of data collection that mirrors this integrative approach, we propose research directions combining quantitative instruments for physiological and relational measurements with qualitative methods like participant-driven journaling. Finally, we propose that methods rooted in participatory action research and contemplative science—termed "Contemplative Action Research"—can not only produce robust data but also enrich individual therapeutic processes. Thus, this paper posits a comprehensive framework and underscores the significance of participant-driven insights and interdisciplinary approaches in advancing therapeutic modalities.

Background

The interest in nervous system regulation emerged strongly in the West in the 1990's with Stephen Porges' **Polyvagal theory.** It was already established that the nervous system evolved from its primary response state of freeze, to more complex states of flight and then fight. Porges, as part of his polyvagal theory (Porges, 2001), then found that the tenth cranial nerve called the vagus was not only activated during the freeze response, but also during states of what he called orientation social engagement. These states are online when there is a sense of safety, of embeddedness and social connection. However, instead of being connected to dorsal structures of the nerve as it is during freeze states, these more recent

nervous system states of orientation and special engagement are wired to ventral structures of the vagus. This was a landmark finding in the field of somatic psychology because it opened a path to access and then heal states of freeze which are “stuck” in the body (Van der Kolk, 2014) and heal trauma.

One can develop attention-regulation capacity based on one's own experience, with qualities such as mindfulness and self-compassion, in particular on interoceptive, visceral and somatic phenomena. The strengthening of observer skills acts as a form of inner social engagement and increases one’s ability to stay grounded and relate skillfully to emergent experiences. Somatic techniques such as titration and pendulation (Levine, 1997) and positive psychology tools (Garland & Fredrickson, 2019; Rashid et al., 2019) such as embodied resourcing and savoring of pleasure have been shown to help. However, a lot of empirical data over the last sixty years of clinical practice, summarized in the **common factors approach** (Lambert & Barley, 2001; Laska et al., 2014), show that *a given therapeutic technique* (such as somatic regulation and positive psychology), only account for around fifteen percent of the variance of successful therapy. Around thirty percent of the variance, twice as much as the technique, is explained by *the quality of relationship between client and therapist* (see figure 1).

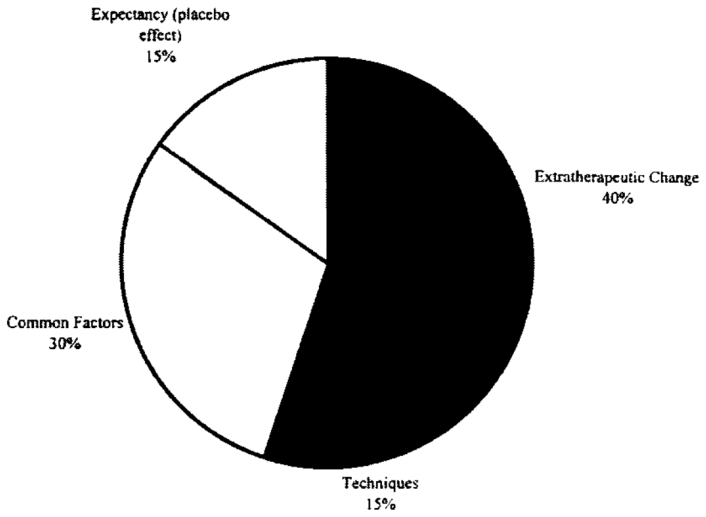

Figure 1. Percent of improvement in psychotherapy patients as a function of therapeutic factors (Lambert & Barley, 2001)

Like all other mammals, because we have evolved as a social species, we are neurobiologically wired to feel safe with others. This evolutionary process has implications for clinical practice. In the 1950’s Carl Rogers (Rogers, 1956) revolutionized psychotherapy practice by proposing person-centered principles. Rogers, rather than insight-centrism, emphasized that the posture of the therapist, one of unconditional positive regard, empathy and congruence was key to the healing and growth of clients. The common factors paradigm gives substantial credit to the importance of the “alliance” between client and therapist, as well as explicit agreement of the purpose of therapy (goals of treatment) and practices used to achieve these goals (Messer & Wampold, 2002). One of the key elements that stands out from the data is that the quality of alliance between the client and the therapist is twice as important as any of the specific therapeutic techniques used in treatment leading to

successful therapy (Lambert & Barley, 2001). In reference to the above theories, it is possible to link the therapist as a significant influence for regulation and resource availability during times of distress. The social engagement system in Porges' Polyvagal theory (2001) gives a useful frame to understand this dynamic. Is it possible to further accentuate this relational container and increase our clients' access to bioenergetic resources?

The Social Baseline Theory (Beckes & Coan, 2011) further propounds that when we feel safe in the company of others, neurobiologically we budget less bioenergetic resources to do the same tasks. For example, the quantity of glucose spent in the brain during moments of stress for the nervous system to regulate itself is reduced when we are with friends. Therefore, when one accesses states of freeze and trauma, being in the company of others will not only help to increase the proportion of neurobiological orientation and social engagement structures to come online, but it will be less effortful. This is significant because during freeze states, there are very few bioenergetic resources available, and little access to the body and feeling at all (Price, 2007). Any additional sources of nutriment will have a big impact. So an important question then is, in the clinical context where freeze states are regularly experienced, how to increase the potential for social engagement wiring?

One way to extend this regulatory potential is to go beyond the bounds of an individualistic approach. The intellectual tradition of individualism treats the individual person as the fundamental unit of analysis and reduces all things social to the motives and actions of individuals (Campbell, 1994). Most methods in clinical psychology are influenced by individualism and therefore treat the individual as the primary object of therapy/training. **Multilevel selection theory** (Wilson & Wilson, 2007) offers an alternative to individualism in which individuals can be treated as a system in their own right, yet also offers a frame where individuals can become part of something larger than themselves that qualifies as an organism in its own right. The individual therapy format, through a strong alliance and trust between client and therapist, offers a dyadic merging opportunity. A group with six to eight members offers a collective merging opportunity to create a temporary social organism. As safety and social engagement are progressively supported and strengthened in the group process, this form of practice multiplies the potential for each individual in the group of further affordances. Are there other ways to increase social embeddedness and further bio-energetic availability?

Another category of success factors described in the common factors literature are the **extra-therapeutic factors**. In summary, the data shows that the therapeutic process is successful to the extent that clients are able to transfer their experiences and learnings in therapy in their daily life, and vice-versa. It is striking to note that, according to the common factors research, it is these factors outside of the treatment context which most help patients get better (circa 40%), more so than the therapeutic techniques used (circa 15%) or even the therapeutic alliance (circa 30%) (see figure 1). One way to understand this finding is that while experiences and insight in the therapeutic setting are important, it is of even greater value to enable greater flow of integration between the therapeutic setting and the client's daily life. Put another way, it is less the content of therapy itself but more the transferential relationship between therapy and daily life which galvanizes most of our client's healing and wellbeing. Relating back to multi-level selection theory, it is possible to further extend the scale of practice in order to include a wider community, national or even global levels. This would mean that relevant themes at these different scales could be addressed within

therapeutic settings in order to support multi-level practices at the individual, collective and systemic dimensions. For example in the case of eco-anxiety, it would be possible to develop regulatory capacity at the individual and community levels through personal and group sessions to increase the sense of agency, to then enact and engage in one's daily life to support connect these lower two scales of embeddedness to the wider systemic scale.

In summary, it would seem that a **multi-level framework** could help bridge the gaps between the current state of research on effective therapy and practice. It offers an integrative perspective on internal-interoceptive practice, personal sessions as well as larger scales of group work and systemic practices. These four layers can be understood as delineating a spectrum of practices ranging from cells to civilization, from sense to society, from neuron to nation.

Design and Implementation of a Relational Embodiment residency

Given the theoretical insights described in the previous section, we call for a renewal of methods and implementations by emphasizing multi-disciplinary and multi-level relational embodiment models of practice (Figure 2). In March 2023, we implemented a prototype of such a practice during a "Relational Embodiment" residency. This section will offer a case study of the practice contexts and methods.

We hosted a two-week residency program with a series of practices. These were structured to maximize successful outcomes as described in the four different categories above: therapeutic technique, alliance, personal goal and expectation and extra-therapeutic factors. These practices can be delineated in four categories (Table 1 and Figure 3).

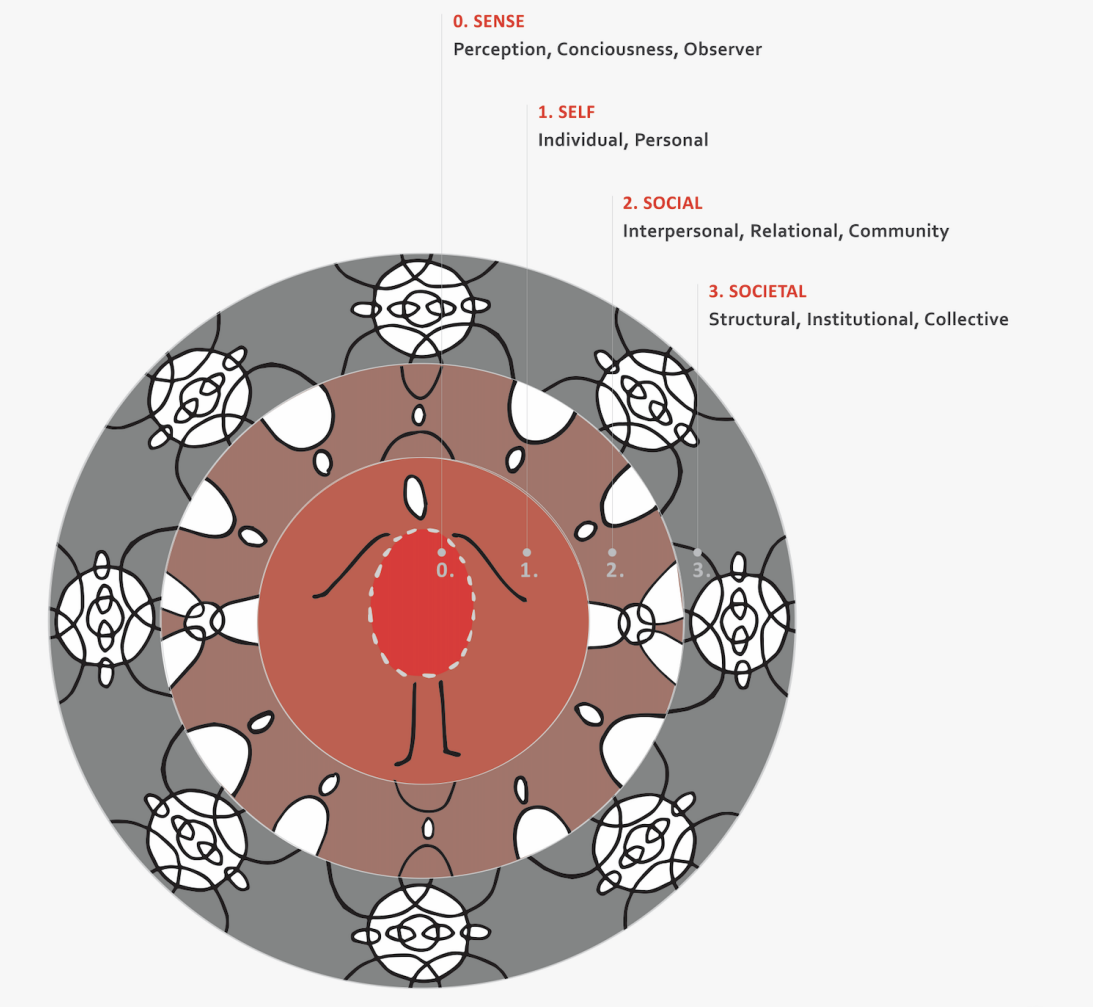

Figure 2. Schematics of the proposed multi-level developmental framework

Level	Practice contexts	Description	Developmental Outcomes	Frequency
Self	Meditation, dance, music, relaxation, walking & art-creation	**Internal attunement and awareness practices** towards one's present moment experience of MOSAIC channels: Meaning, Orientation, Sensation, Affect, Image & Consciousness	A range of attention, somatic and emotion-regulation skills for wiser and weller experiential awareness	Daily
Dyadic	1:1 therapy sessions	**Professionally facilitated sessions** with a experiencing and exploring what emerges in the present moment experience internally	Increased continuity and capacity for a range of attention, somatic and emotion-regulation skills for wiser and weller experiential awareness	Voluntary
	Buddy discussions	Peer sessions to explore relational goals in the residency	Freedom to express one's experience, receiving support, reflexive sharings	Daily
Group	Small group process sessions ("Resiliency Circles")	**Professionally facilitated group sessions** with a pair of professionals to experience and explore what emerges in the present moment experience internally and relationally	Increased continuity and capacity for a range of attention, somatic and emotion-regulation skills for wiser and weller awareness of one's own experience, of others and the group-as-a-whole (socio-organismic embeddedness)	3x week
	Open spaces	Participants offering skills, workshops and discussion spaces of interest to themselves and others	Empowerment & community leadership	2x daily
Community	Community process sessions ("Empowerment Forums")	**Professionally facilitated community sessions** with a team of professionals to experience and explore what emerges in the present moment experience internally and relationally	Increased continuity and capacity for a range of attention, somatic and emotion-regulation skills for wiser and weller awareness of one's own experience, of others and the community-as-a-whole (larger socio-organismic embeddedness)	2x week
	House-care practices	Daily tasks of cleaning, cooking and gardening	Embeddedness into community organism	Daily

Table 1. Overview of practices offered during the two-week residency program

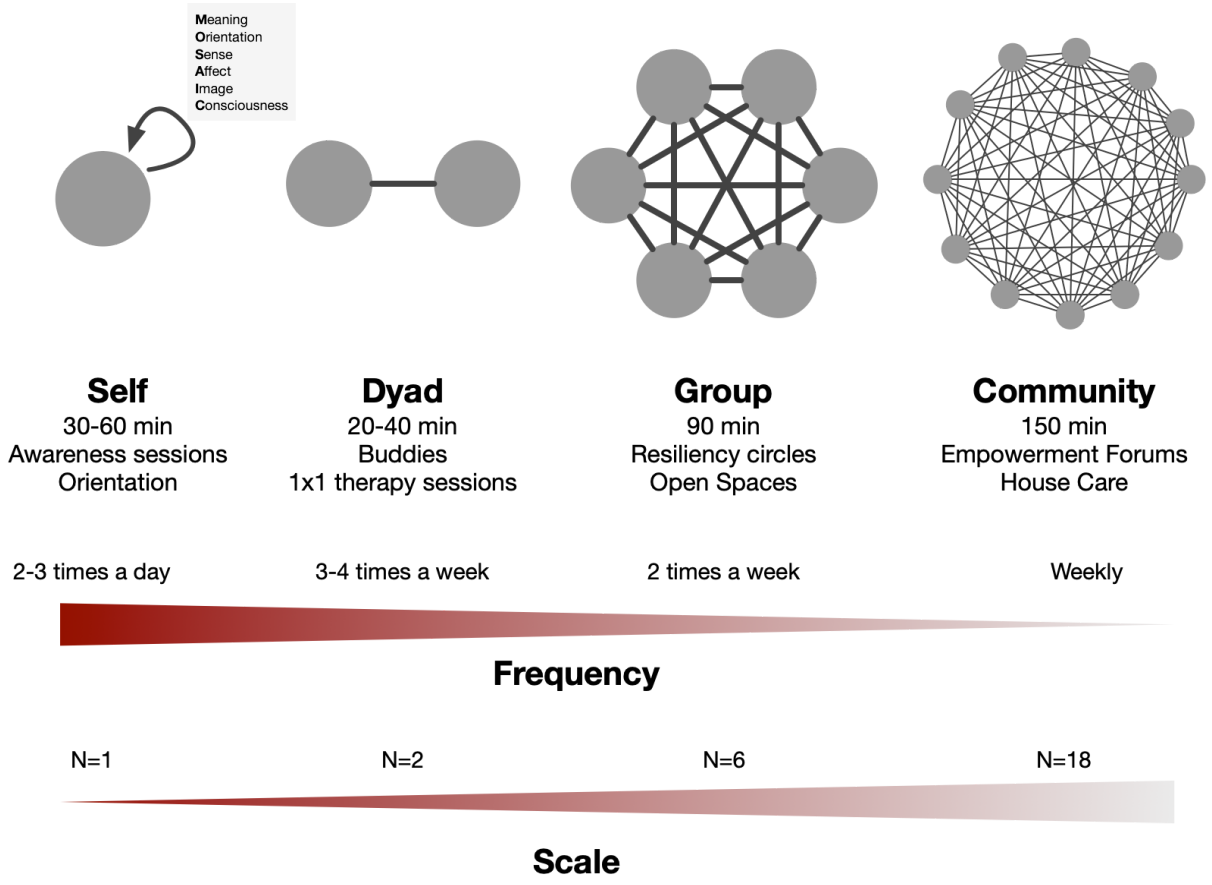

Figure 3. *Overview of the various scales and frequencies of the practices. In the top networks, nodes are individuals and possible social interactions are depicted.*

A detailed description of each of these categories will now be presented, interspersed with qualitative data collected post-residency (Figure 4). The residency began with a whole-group session, giving some orientation to the multi-dimensional and multi-level approach. There were regular moments of pausing and bringing awareness to the multi-dimensional present moment experience (somatic, affective, cognitive and relational), and some time into the different multi-level formations: dyads, small groups and whole-community exchanges. Each of these formations offer a number possibilities for experience and growth, categorized into (i) MOSAIC (ii) Dyad (iii) Group (iv) Community spaces and experiences.

The residency offered daily opportunities for MOSAIC-level practices: there were morning meditations, regular dance and music sessions along with time for walks in nature and swimming in the river.

> *"I did morning meditation in the first week. I felt like this helped with grounding and creating a shared sense of rhythm with others."*

These practices focus on developing wise awareness and a range of attention-regulation skills towards one's phenomenological experience and perceptions, particularly attention to one's senses in the environment (exteroception) and internal experience (interoception). The NeuroSystemics method divides this perceptual field into six channels, with the acronym

MOSAIC: Meaning, Orientation, Sensation, Affect, Image and Consciousness. For example, in a morning meditation practice, one may bring attention to one's breath and body (sensation channel), feeling (affect channel) as well as a broader awareness of thoughts coming and going (meaning channel). During music, one tunes into the sound (orientation channel) and maybe some mental images emerge (image channel). Consistent with 5E models of cognition is intricately connected and interdependent with all the other channels. The realization of this interconnectedness is an essential stage of maturation for one to experience, and yet it is helpful to offer a scaffolded map helping discern and differentiate these channels to support the progressive integration into perceptual experience. Therefore, the practices at his level encouraged all individuals to choicefully find a SENSE-level practice which can help them strengthen attentional capacity to their present-moment experience in a resiliency-building way. As a result, participants were able to increase their abilities to pay attention to their experience, and the ways they are influenced by others and the space they are in. As one participants recounts:

> *"It was an experience to train a muscle which is being present in the interactions with yourself and between yourself and the environments and with others."*

Dyad level practices were offered through 1:1 session with facilitators and a "buddy-pairing system." Individuals receiving a 1:1 session will be able to form an alliance with their facilitator and regulate their nervous system through a sense of embeddedness in that trusted relationship. Facilitators were trained in somatics and systems approaches, helping individuals release tension and restore their capacity. In particular, all residency participants had a relational goal that they were working towards and facilitators could help them explore and untangle issues that arose during the residency. The buddy-pairing system, whereby participants had a daily discussion, offered another privileged space for sharing and exploring relational dynamics emerging between them and in the wider context of the residency activities. Both 1:1 sessions and the buddy system were designed to further strengthen participant's embeddedness in the residency by forming temporary dyadic organisms.

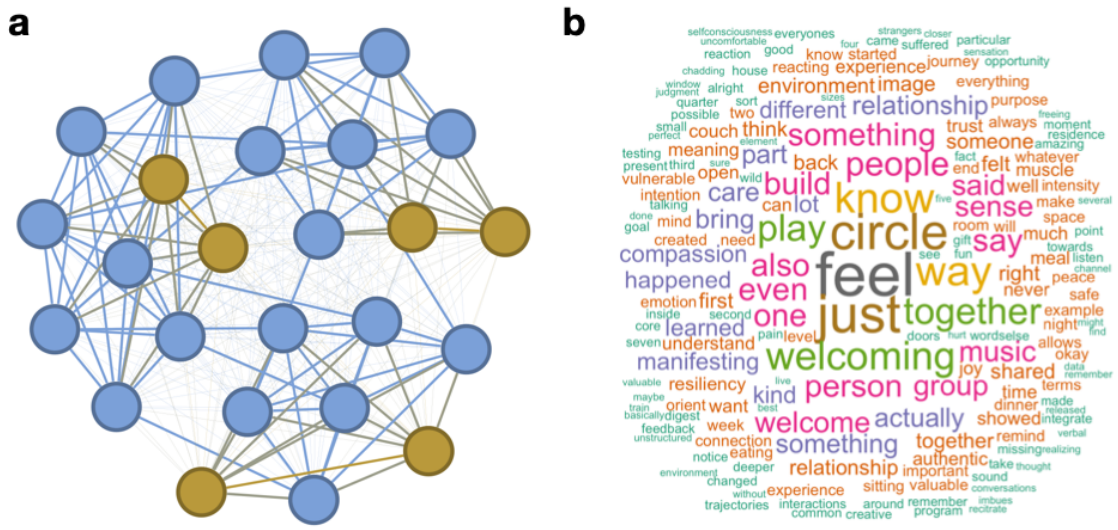

Figure 4. a. Network representation of the interactions between participants (blue) and facilitators (yellow). The links in the network represent the involvement in a shared practice (Buddy, Resiliency Circle, or Empowerment Forum) between two individuals. Thicker edges indicate more shared practices. We observe the three RC groups, as well as inter-group connections representing open forums (thin edges) and buddy relationships (thick edges). **b.** Word cloud representing the most frequently used words across interviewed participants to describe the practices and their impact.

The group practice involved participating in a small group (6-8 people) every other day. Two group facilitators held the space, bringing presence and awareness to the present moment experience, bringing light onto each of the channels, supporting the achievement participants' relational goals and strengthening an overall sense of embeddedness in the group (a group organisms/self). One core feature of these groups is that facilitators hold every experience, spoken, felt, embodied or interactive with a sense of unconditional basic regard and appreciation. As two participants note:

> *"I learned, I felt that I learned a lot about the power of holding and welcoming whatever is manifesting and welcoming all parts of ourselves but welcoming and including each part of that circle and that in a way that circle isn't complete if one part is missing. So that there is that sense that each element of the circle was essential for it to function and journey together towards more freeing ways of relating with each other and therefore also of relating to ourselves."*

> *"I felt like authenticity was really valued. And there was, you know, not like a judgment experience. It was really open and you could be vulnerable. Yeah. You know, it's funny. I think what happened was that people really said things that were hard or disagreed. It wasn't that everything's like, oh, everyone's getting along. It's so nice. Like somebody said something and then someone reacted and that was welcome. But it wasn't welcomed in a harshness. It was welcomed like, okay, thank you for sharing that. Tell us what your experience is. And then the other person can hear what that is. And, things really got resolved in a peaceful way. There was a room for everything."*

Moreover, group spaces also encouraged the embodiment of a variety of attitudinal postures towards one's own experience or that of others, such as joy, friendliness, equanimity and compassion. Here is a sharing from a participant who discovered this way of relating to their experience through relational encounters:

> *"By creating a compassion channel, with another person, or with a group, even though we've never experienced what they experienced, the fact that we can sit with them as they go through things, maybe it's going through a fight, right? We understand their point of view, but deeply we understand how they're feeling. It allows us to feel that same compassion for ourselves. And I really have the feeling that I did feel a lot of the pain, that for example, some members of my family suffered, I did feel very like strong, hurt, pain, but that was possible because I opened these doors through that person, and that was a gift, that was a gift to me."*

There were also daily care duties that each participant fulfilled, such as cooking, cleaning and gardening. As people worked in small teams, these work periods also offered opportunities for group selves to emerge, coalescing and collaborating to achieve a collective goal. There was an encouragement for residency participants to use these daily care duties as exploration of their relational patterns, and ways to become more free relationally. For one participant who described challenges in being able to open up to and rely on others, they described their experience as *"I really never felt like so many people had my back before."*

There were also more informal opportunities to explore relational dynamics, such as meal times, walks and music playing, which was described as follows by one participant:

> *"As part of being here, I have never had as much fun with music. I've always loved music. But here we sort of explored it in a very unstructured way. And it was play. It was playtime. We had four or five people who, you know, we would just find things around and start making sounds with them. And then just build on that and build on that and build to these like crescendo of emotion and fun and connection together. And there was always just this like joy, immense joy to just play together. So I think because we made music together, which is such a creative process, we also felt each other. And then we, when you make music with someone, you also learn about them. You know, it's very much sharing and giving take and building off each other. So it's a lot of synergy. So then if you're sitting with someone eating and that you shared that, you're just closer. There's a connection. Okay, so there's a kind of intimacy created through the playfulness. And feeling safe with the person, feeling like, because when you make music, there's a vulnerability. You're being creative. You're showing yourself."*

Open space technology was used, whereby any participant could offer a group session on a particular theme, practice or discussion. The group would be led by them, providing bottom-up streams to build larger wholes in the residency space.

> *“Open spaces were not helpful when they had content similar to the program. Only helpful when it was physical exercise, music, art, painting.”*

> *“Many valuable practices were offered, I learned a lot. challenging was that there were maybe too many activities and too many things organised at the same time and in parallel.”*

These sessions were one of the more challenging areas of the residency. For example, the structured content group sessions and daily practices felt sufficient for some of the residents, which led to experiencing open sessions as overwhelming the program. Some difficult relational dynamics also occurred such as a small group of participants proposing most of the spaces, leading to frustrations by others who felt there was not enough space for them to contribute. There was also a sense that there weren’t enough spaces to process some of these unfolding community dynamics.

> *“[The open space] was overwhelming… I felt frustrated to find time to meet one on one as everybody was busy with those open spaces . I felt them as distractions and fast food tools that can't be integrated anyway ; Capitalistic energy in my sense and fear of emptiness which burnt potential of just pausing and not learning, teachings all the time . FOMO was generated, guilt and I felt it separated the group energy.”*

Finally, there were periods where the entire community came together to explore a particular theme with an emphasis on process and present-moment experience, then breaking up into their respective small group formations, and then merging back into a wider community session. These intergroup process sessions offered a containing space to feel embeddedness in a wider whole (community self). This particular type of session offered experiential opportunities to sense into the different levels of self-building (individual, small-group and larger community selves). This next account describes the flow of social formations that were possible throughout the residency, giving a sense of the multi-level dynamics:

> *“There's a resiliency circle, and then there's a circle with everyone, but there's also so many smaller circles of all sizes really. Because we live together and we do some collective care of the house together, etc. In all these scales, you're presented with an opportunity to orient yourself. And so you have to recalibrate yourself in an energy of that particular group that you've not been doing the muscle with. And you're not building the flexibility with them. So each of these is an opportunity of testing in a way that muscle integrating what is that new environment you're into. And also nourishing yourself from other trajectories of the parallel trajectories. In other circles, each circle has their own personalities, their own typology and their own journey. And that could be a fear of missing out something that they've been through. So there's this kind of learning through the relation you have with these other circles. There's a setting where you're in a safe*

environment to be vulnerable and build flexibility. And there's that environment for the subgroup and for the very large group for the sharing."

Some community sessions were also provided with the aim of discussing a particular theme or issue that felt relevant to the community, with as much of a positive psychology attitude as possible. The social engagement system, our most refined way of experiencing ourselves, others and the world, is one of playfulness and joy. One participants described the residency in this way:

"At the end of these two weeks, I feel very playful, very playful, and at peace, and really, and beautiful, and this sense of peace and relief."

In conclusion, the reported experience relates to key elements including playfulness, joy, trust, and compassion, fostered through meaningful interactions. The structured environment allowed for emotional processing in the resiliency circles, leading to enhanced self-understanding. Creative activities like music promoted deeper connections and shared joy, while the non-judgmental and open environment encouraged authenticity and valued individual needs. A mutual support system emerged, suggesting a strong sense of community. These factors synergistically contributed to personal growth and stronger interpersonal relationships.

Research Perspectives

The therapy and residency model delineated in this study lays the groundwork for additional quantitative and qualitative research aimed at evaluating its effectiveness and refining its design. In the following sections, we propose a range of approaches to further this endeavor.

Research design

To elucidate the efficacy of therapeutic interventions, it is paramount to consider not only the immediate effects but also the longitudinal impact on an individual's mental health. This requires the implementation of a research design that encompasses a broad temporal scope, capturing the dynamics of therapeutic change and its enduring effects over time.

In this context, the pre-post design plays a crucial role. By obtaining baseline data prior to the therapeutic intervention (pre), and comparing it with the data gathered after the intervention (post), this design allows for a direct comparison of the individual's mental state and functioning before and after the therapy. This is particularly relevant to interventions such as the Relational Embodiment residency, where substantial changes in participants' mental states, relationships, and overall well-being are anticipated. The baseline data serves as an anchor point, providing a reference to compare and quantify the extent and direction of changes that occur due to the intervention. However, the evaluation of therapeutic effectiveness should not be limited to the immediate post-intervention phase. It is equally important to investigate the long-term impacts of therapeutic intervention. This could be achieved using a follow-up phase, with a recall period of 3-6 months after the residency. During this period, data could be collected to assess the maintenance of therapeutic gains

and the potential emergence of any delayed effects. This follow-up data collection is crucial in understanding whether the benefits experienced by participants during the residency have been sustained, assimilated into their everyday lives, and have resulted in lasting improvements in their mental health and well-being.

Quantitative approaches for measurement

The utilization of non-verbal measurements in therapeutic outcome evaluation offers a pathway to assess the effectiveness of interventions. For example, technology such as smartwatches can capture physiological data in real-time (Gloor et al., 2018). These devices, equipped with advanced sensors, are capable of measuring heart rate, skin conductance, and even the subtle changes in body temperature. Such physiological parameters can serve as proxies for different emotional states, stress levels, and overall mental well-being of the individuals . For instance, an increased heart rate and skin conductance could indicate heightened anxiety or stress. Similarly, variations in body temperature might reflect changes in emotional states. The continuous monitoring and analysis of these physiological parameters could provide valuable insights into an individual's internal state during the residency time and particularly within sessions, offering a quantitative understanding of their therapeutic journey that transcends the capabilities of traditional self-report measures.

Simultaneously, it is possible to employ sound analysis for verbal engagement assessment. This has been studied using sensors equipped with microphones in the context of group discussions to evaluate team performance (Lederman et al., 2018). One could similarly capture speech data during therapy sessions. The focus would not be on the content of the speech, but on the metadata: the tone, pitch, speed, and intensity of speech, and even the pauses between speech. Such data can be indicative of an individual's engagement level and emotional state during therapy. For instance, rapid speech might indicate anxiety, while low tone and intensity might be indicative of sadness or depression.

Systematic qualitative approaches for experience logging

Beyond objective data collection, the report of experiences through journaling represents a valuable method of data collection, providing an in-depth, subjective account of the individual's experience throughout the therapeutic journey. From a research perspective, the personal narratives captured through journal entries offer a wealth of qualitative data, providing insights into participants' internal processes, shifts in perspective, and changes in emotional states over time. These accounts can be used to supplement and contextualize quantitative data, offering a nuanced and richly detailed perspective of the therapeutic process. Importantly, these personal narratives also offer an individualized perspective on therapeutic progress, capturing the unique, subjective experience of each participant.

While journaling itself is an unstructured approach to reporting an experience, it is important to provide a container through which the ensemble of reports from an individual can be analyzed to derive causal relationships that underpin therapeutic progress. Digital platforms can facilitate this process by providing user-friendly tools for activity logging and ecological moment assessment using textual and verbal integration. For example, recent studies in health and psychiatry (Klein et al., 2020) have leveraged digital mobile applications

that use active methods of experience sampling, including explicit self-reports that may range from occasional and detailed survey instruments to more frequent, brief and in-the-moment questionnaires that are referred to as “ecological momentary assessment” (EMA). EMA offers a number of major benefits over traditional survey instruments including the reduction of retrospective bias, realtime tracking of dynamic processes, simultaneous integration of multi-level data, characterization of context-specific relationships, inclusion of interactive feedback, and enhanced generalizability of results.

Measuring changes in the relational structure

Beyond individual-centric data, the efficacy of the relational embodiment approach could be assessed through the examination of changes in the valence and strength of relationships using social network data collection (Tackx et al., 2021) and structural analysis (Grabowicz et al., 2013; Masselot et al., 2023). This perspective brings a layer of relational analysis, extending the scope of data from individual experiences to collective dynamics. In the context of group therapy, the interactions and relationships between participants become an essential part of the therapeutic process. By analyzing social network data, researchers could gain insights into how these relationships evolve over the course of therapy, and how changes in relational dynamics might correlate with therapeutic outcomes.

In addition to understanding the valence of relationships, social network analysis could illuminate patterns of interaction and influence within the group. For instance, the emergence of supportive subgroups, shifts in communication patterns, or changes in the centrality of participants within the network could all be indicative of progress in therapy. Furthermore, the combination of social network data with individual-level data from journaling and EMA could provide a more holistic and nuanced understanding of the therapeutic process. For example, patterns of change in relational dynamics could be cross-referenced with changes in individual emotional states or perspectives as captured in journal entries and EMA responses using Natural Language Processing techniques (Aiello, 2018). This multimodal approach to data collection and analysis could provide a robust method for assessing the efficacy of group therapeutic treatments, while accounting for the complexity and interconnectedness of the therapeutic process.

Incorporating these strategies within digital platforms could provide a cohesive system for collecting, managing, and analyzing this rich dataset. Integrating these methods of relational data collection and analysis (Tackx et al., 2021) with existing tools for activity logging and ecological momentary assessment (Klein et al., 2020) could transform these platforms into powerful tools for researching and evaluating therapeutic interventions in group settings.

Journaling as an integration practice

By documenting their experiences in a systematic manner, individuals are encouraged to reflect on their activities, interactions, and personal transformations. This can reveal patterns and connections that would otherwise remain obscure, elucidating the causal pathways by which certain practices lead to therapeutic outcomes and providing emotional discharge. For instance, an individual might notice that their practice of daily meditation leads to increased calm and focus, which then enhances their ability to engage with their

buddy in a more present and empathetic manner. This improved buddy interaction may then contribute to a more cohesive and supportive group dynamic, which in turn could foster a more inclusive and harmonious community atmosphere. Observing and understanding these chains of causality can help individuals to appreciate the value of their practices and to make more informed decisions about their therapeutic journey. Journaling can also have buffer effects for stress, as was shown in nurses (Dimitroff et al., 2016). The collection of data points across several participants can then be leveraged to capture these insights quantitatively, in an approach similar to the Quantified Self movement for health-related contexts promoted by Open Humans (Greshake Tzovaras et al., 2021; Greshake Tzovaras et al., 2019).

Finally, beyond the obtention of valuable research data, journaling is a therapeutic tool in itself, fostering self-reflection, self-awareness, and ultimately aiding the integration of therapeutic experiences into one's daily life, which is a critical element of therapeutic change. By encouraging participants to reflect on their experiences, thoughts, and feelings, journaling can help individuals to make sense of their experiences and to weave them into their broader life narrative. This process of introspection and self-reflection is a key component of many therapeutic models, promoting self-awareness, insight, and personal growth. The integration practice of journaling is notably used in the context of psychedelic treatments. Following such treatments, participants are often asked to document their experiences and insights, providing a structured format for the process of integration. The act of writing helps to consolidate and process the often intense and transformative experiences encountered during psychedelic therapy. These integration reports serve a similar function to journaling in the context of the residency, providing a method for individuals to reflect on, understand, and integrate their experiences.

Towards a “contemplative action research”

Overall, these methods pave the way for an approach that stands between participatory action research and contemplative science, benefiting both data collection processes and the deepening of individual therapeutic experiences. Participatory action research represents a methodological approach that values the active involvement of individuals in the research process (Heron, 1996). This research paradigm treats participants not as passive subjects, but as co-researchers, empowered to contribute to the design, execution, and interpretation of research that directly impacts their lives. This approach can enhance the relevance and applicability of research findings, as the collected data is grounded in lived experiences and the interpretations are co-created with those who are most intimately familiar with the context. In the case of therapeutic interventions, this implies that participants can contribute valuable insights into the effectiveness and appropriateness of the practices in which they are engaged. On the other hand, contemplative citizen science offers a novel fusion of contemplative practices with citizen science methodologies, thereby integrating subjective experience and objective data collection. In this approach, participants' personal contemplative practices (e.g., meditation, reflective journaling) become a source of rich data, documenting the nuances of their internal experiences. Meanwhile, the methods of citizen science provide a rigorous and structured framework for collecting, managing, and analyzing this data. The result is a form of research that honors

and harnesses the richness of inner experience while maintaining the rigor and reproducibility of scientific inquiry.

When integrated within the therapeutic process, these research perspectives can not only contribute to the generation of robust and meaningful data but also serve to deepen the participants' personal experiences. Participatory action research fosters a sense of agency and ownership, enhancing engagement and motivation, while contemplative science encourages introspection and awareness, furthering personal growth and integration. Thus, the research process itself becomes a therapeutic tool, contributing to the transformative potential of the therapy. In addition, as participants engage in self-research and share their experiences and findings, communities of practice can emerge. These communities serve as a support network, promoting shared learning and mutual support. They can also contribute to a sense of belonging, enhancing motivation and engagement in the therapeutic process. In addition, these communities represent a rich source of diverse experiences and perspectives, enriching the collective knowledge and fostering innovative insights. By bridging the gap between personal experiences and scientific research, these approaches offer a promising avenue for advancing our understanding and practice of therapy.

Conclusion

Our investigation elucidates the importance of implementing a multi-level, multi-dimensional therapeutic model to address the variegated dimensions of individual well-being. Informed by Polyvagal theory, the model recognizes the critical role of the vagus nerve in manifesting trauma states in the body and the therapeutic potential of enhancing attention-regulation through mindfulness and self-compassion. The therapeutic model not only focuses on the client-therapist alliance, which accounts for approximately thirty percent of the variance in therapy outcomes but also accentuates the significance of interpersonal relationships to increase the ability of patients to transfer their therapeutic experiences and learnings to daily life. We argue for an extension of the therapeutic scope, ranging from individual sessions to larger group work and systemic practices, thereby extending the scope of therapy to include community, national, and even global levels, fostering a more comprehensive range of practices from individual to societal scales.

The "Relational Embodiment" residency program served as an effective instantiation of our proposed model. The program emphasizes the importance of developing a healthy relationship with different objects of awareness, following Kegan’s empirically-based constructive-development theory of personality. This program incorporates various practices across four levels - MOSAIC, Dyadic, Group, and Community - fostering personal growth and the formation of deeper interpersonal relationships. MOSAIC-level practices include meditation, dance, music, relaxation, walking, and art creation to strengthen attentional capacity and resiliency. Dyadic practices involve one-on-one therapy sessions and peer discussions to explore relational goals, providing opportunities to form deep connections and express experiences. Group practices focus on small professionally facilitated group sessions and community activities. These allow participants to experience and explore present moment experiences in relation to others, increasing their awareness and understanding of their own and others' experiences. Community practices involve larger

group sessions and shared daily tasks like cooking, cleaning, and gardening to build a sense of unity and shared responsibility. We believe the program illustrates the potential for integrating a range of experiential practices within a therapeutic framework, presenting promising avenues for future therapeutic interventions.

Finally, we discussed a hybrid research model that combines quantitative and qualitative methods for evaluating and refining the residency program. We identified a pre-post design as crucial for capturing longitudinal impacts on mental health. Quantitative measurements using technology like smartwatches and sound analysis tools can offer insights into the individual's physiological and emotional states. Simultaneously, qualitative methods, particularly journaling, could afford a comprehensive picture of the individual's experience, aiding in self-reflection and therapeutic integration. The incorporation of social network data collection can further supplement this approach, providing a holistic perspective on relational dynamics throughout therapy. Lastly, we proposed a "contemplative action research" approach to engage participants actively in the research process. This not only ensures the generation of robust and meaningful data but also allows the research process to become a therapeutic tool in itself, fostering a sense of agency, introspection, and shared learning within the community. Therefore, by integrating a multi-dimensional therapeutic model, comprehensive research design, and active participant engagement, we believe we are moving closer towards a more nuanced and effective therapeutic practice that addresses individual well-being in its full complexity. Future studies can further explore and refine these methods and practices, contributing to the evolution and efficacy of therapeutic interventions.

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