

HOW CAN BEHAVIORAL SYNCHRONY FOSTER GREATER COHERENCE IN A SENIOR LIVING COMMUNITY

Michael C. Patterson, June 2021

My company, MINDRAMP is a pioneer in the field of applied brain health. We define our mission as promoting “Qualongevity,” which is a contraction of two core concepts: longevity and quality-of-life. Our goal is to translate cutting-edge scientific research into practical programs that help people live long and live well.

Our reading of the current science is that behavioral and lifestyle interventions continue to be the most effective ways to slow the aging process, strengthen brains and keep minds sharp.

We cluster the evidence about behavior and lifestyle choices into eight key areas that we call the eight Essential CogWheels of Brain Health. Each “CogWheel,” such as physical exercise or social engagement, has inherent risks and inherent protections. Getting more physical exercise, for example, is protective whereas leading a sedentary life increases your risk of premature aging and accelerated cognitive decline.

In this paper we will focus on the CogWheel of Social Engagement and explore how activities that promote behavioral synchrony lead to better interpersonal relationships and greater community coherence.

HUMANS ARE SOCIAL BEINGS

It should be no surprise that social relationships are one of MINDRAMP’s eight essential Cogwheels brain health. Human beings are a highly social species. From the moment we are born till the point of our death we are reliant on the support and cooperation of other people.

We prosper when we are nurtured by loving individuals and accepted and supported by significant social groups. Our lives have meaning and purpose when we can contribute to the wellbeing of others. Positive social relationships, group cohesion and cooperation, therefore, are protective factors. They promote health, happiness, and prosperity, supporting not only individual needs but the welfare of the larger society.

Conversely, negative social interactions are painful and contribute to disease, depression

and debility. We suffer psychological and physiological pain when isolated or ostracized from important social groups. We feel marginalized when forced to swim away from the main currents of society. Much of the social strife that afflicts the world is caused by IN group and OUT group dynamics. We protect and love those deemed part of our IN group and vilify, demonize and - at our worst - try to destroy those deemed part of the OUT group.

To promote general wellbeing, we must be constantly vigilant to champion behaviors and activities that promote positive social interactions and to shun those that contribute to negative and abusive social interactions. Can we find evidence-based approaches to promote positive social interaction and pro-social behaviors?

We think that the body of research around “behavioral synchrony” holds important clues to crafting the type of interactions that can promote social bonding and social cohesion.

WHAT IS BEHAVIORAL SYNCHRONY?

Behavioral synchrony, sometimes called bio-behavioral synchrony, is a process of bonding that happens between two people, or even large groups of people, when they engage in synchronized behaviors.

Adam Baimel, the lead author of the study on behavioral synchrony from British Columbia, points out that music, dance and drill (i.e. people marching in sync with each other) are found in all cultures throughout the anthropological and historical records.¹ These activities are examples of complex human activities that evoke coordinated activity and synchronous behavior, especially when ritualized. Music, dance and drill have a striking power to synchronize people’s physical movements as well as, importantly, their mental states.

Baimel and his team hypothesize that behavioral synchrony automatically creates empathy for the other participants because each person experiences the same feelings and responds with similar behaviors. When the crowd all around us is behaving in the same way that we are we assume that everyone is thinking and feeling just what we are thinking and feeling. We bond with our fellow audience members (sports fans, marching corps) because they are just like us.

Synchronization can occur on many levels. A group clapping their hands together or stamping their feet to the same rhythm are examples of behavioral synchrony. So are

dancing, choral singing, or marching to the beat of military music. Often, behavioral synchrony leads to physiological synchrony.

People who move to the same beat or experience the same kind of sensory inputs will find that their heart rate is in sync with each other. ² People's breathing patterns will match up when they perform synchronous activities together. Behavioral synchrony even has the power to alter brain waves and the expression of hormones.

Behavioral synchrony has been studied most extensively in dyads, meaning among two people, like a mother and infant, or lovers or close friends. It has been found that the brain wave rhythms of bonded pairs will synchronize around a nice steady and calming rhythm. And often, both members of the pair will experience a similar surge of the so-called bonding hormone oxytocin.

SOCIAL BONDING

For our purposes, the core point about behavioral synchronization is that it forges new bonds between people. People who engage in behavioral synchrony feel closer to the other person than they did before the synchronized activity. They feel safer, warmer, more affectionate and trusting. Behavioral synchrony is capable, therefore, of cultivating friendships and fostering group cohesion.

This is a great outcome all by itself. As we age, we often lose our connections with loved ones and friends and find it hard to make connections with new people. Older adults who downsize or move into congregate living communities must adjust to an entirely new social environment. Any activity that can help them make friends and feel a part of the larger community is valuable.

Behavioral synchrony also seems to have a multiplayer effect. As rapport builds between individuals and groups, they are more likely to want to do things together. Friends and integrated communities will, in other words, want to engage in more synchronous activities that will further strengthen their bonds.

Behavioral synchronicity has the additional benefit of diminishing Us/Them divides. With increase behavioral synchronicity there is less of a feeling that it is important to be a part of an IN group. At the same time, there is less of a feeling that others are part of the OUT group. Others no longer seem so strange and foreign. They begin to feel more like us. The sense of US expands and becomes more inclusive.

HEALTH BENEFITS

Behavioral synchrony not only fosters social cohesion and better understanding of others, it also is good for our health. Synchrony has consistently been linked with improved stress management. People who do a better job of coordinating positive social interactions have reduced stress and increased brain resilience. ³

Behavioral synchrony is thought to support group efficiency and creative thinking. The mechanism for these benefits has to do with the synchronization of similar brain networks in the members of a group that has bonded. In popular parlance, we say that we were “of one mind,” with the group, or that we did a “mind meld” with our creative partner. When minds are working in sync they are more efficient and less protective.

PURPOSEFUL SYNCHRONY

Here’s an important point, noted in an article called, Synchrony As A Mechanism for Social Understanding.⁴ Artificially-created synchrony appears to yield the same effects as synchrony that occurs naturally. Two researchers (Wiltermuth and Heath, 2009) conducted several experiments to test this effect. They reported that participants made to act synchronously (physically and vocally) performed more cooperatively, felt more connected with their counterparts, and trusted their counterparts more than those who acted synchronously.

This point raises the possibility that activities designed specifically to increase behavioral synchrony could promote improved one-on-one relationships between, for example, residents and staff of a senior living community. Further, such activities could foster greater community coherence among residents, their families, and staff. In the next section we will explore how designed activities could be tweaked to enhance behavioral synchrony.

PHOTAVIA V-CLIPS

To examine how an activity can promote behavioral synchrony we will use the example of PHOTAVIA V-Clips.⁵ We use this example because the V-Clips are not immediately recognizable as a synchronized activity. Our challenge is two-fold. First, can we find opportunities for behavioral synchrony that are inherent within the PHOTAVIA V-Clips? Second, can we find creative ways to use or modify the V-Clips that enhance their ability to promote behavioral synchrony and, by extension, promote greater personal and group

bonding?

PHOTAVIA provides senior living communities and other congregate living communities for older adults with an entertaining and educational experience built around iconic photos drawn from the Time (Life?) Magazine archives.

Consider this famous photo of VJ-Day in Times Square. It seems like everyone in America has seen the photo at one point in their lives. PHOTAVIA displays this photo on a screen, using the so-called Ken Burns effect of a slow pan across the still photo or a zoom in to one salient aspect of the image.



In addition to the photos, the V-Clip provides written information about the photographer who took the photo as well as some background information on the context of the photo.

The written information is supplemented by a voice-over narration along with a musical accompaniment, at times including sound effects. The ongoing V-Clip focuses on one photo for about 20-30 seconds and then gradually dissolves into another iconic image. PHOTAVIA has _____ number of V-Clip photos in their catalog.

HOW DO PHOTAVIA V-CLIPS PROMOTE BEHAVIORAL SYNCHRONY?

Attentional Synchrony

Perhaps the most important synchronization is that of attention. Attention has a profound effect on what we experience and, therefore, on what we think, feel and do. Synchronized activities tend to focus everyone's attention on the same event. Everyone in a theater or movie house watch the same thing and form a bond. Everyone in a choir sings the same song, which forms a bond. Upon entering a room where the V-Clips are playing, eyes and ears will be drawn to the movement, the sound and the content. Since the V-Clips are positive and uplifting images, the shared attention is focused on positive aspects of life and should promote positive moods.

Synchronized Sensory Experiences - The Photavia V-Clips provide the opportunity for synchronous sensory experiences among the viewers. As above, the V-Clips provide a single source of visual and auditory stimulation. Participants' attention is drawn to a

single iconic photograph and to the accompanying text. The visual content is complemented and augmented by a voice-over recording as well as a musical background and the occasional sound effect.

Following the “use-it-or-lose-it” principle, brain regions that are stimulated receive resources and remain healthy. Conversely, brain regions that are neglected receive reduced resources and tend to atrophy from lack of stimulation. The visual and auditory sensory systems are significant processing systems in the human brain and are distributed broadly across the territory of the brain.

Synchronized Memory Recall – The use of iconic photographs in the Photavia V-Clips increases the chances that viewer’s minds will travel back to the time of the event. While each person will have their own unique memories, the overall affect will tend to be shared by the group. Take the photo of the kiss in Times Square. The basic memory is the end of WW II and the joy everyone felt.

Emotional Synchrony – The shared memories of the iconic photos will stimulate shared emotional responses. Again, each person will have their own personal emotional response to the picture, but all will share in the joy of peace and the pride of being an American. Further, anyone who has been in love, or otherwise overcome by an impulse to bond, can relate to the impulse to embrace as the couple did in Times Square.

Proprioceptive Synchrony – Because of mirror neurons our brains have a physical response to the physical shapes taken by the kissing couple. Men will feel the weight of holding the woman as she arches into the kiss. Women will feel the back bend and the surrender to the embrace. These impulses will activate the premotor cortex without going the next step of activating actual movement, but they will be felt nonetheless. Viewers will share the same physical sensations, which is likely to reinforce the synchronous bonding of the group.

Personal (dyad) Bonding – In addition to stimulating group bonding, the Photavia V-Clips can promote inter-personal bonding between two people, such as two family members, two residents, or a resident and staff. The V-Clips are effective conversation starters and allow people to talk about their memories, their feelings, what they were doing at the time and so on.

ENHANCING THE SYNCHRONY OF V-CLIPS

Facilitated Viewing

Behavioral synchrony of the V-Clips can clearly be enhanced when they are experienced by groups of people who enjoy the same experience. Orchestrated, group viewing of the V-Clips, therefore, can enhance the opportunities to bond with the group and to stimulate greater cohesion. Strategic invitations might even serve to create bonds among people or groups who have felt estranged from one another.

Further, a facilitator who can lead group discussions, or engage individuals in discussion, can direct the conversation towards a sharing of thoughts and feelings that can bring people together around their shared humanit.

Memory Mining – One of the techniques MINDRAMP has developed as part of its Cognitive Activity Design approach is called “memory mining.” In short, the idea is to use a variety of techniques to uncover memories that are particularly powerful for a person. Once these powerful memories are identified, specific V-Clips could be selected to evoke these memories and to spur further conversation and greater bonding.

For example, during a painting class in a senior living community the assignment was to draw a picture of a favorite vacation. One man drew a picture of a battleship, which seemed incongruous with the idea of a vacation. It turned out that he took a memorable vacation to Pearl Harbor where he recalled his days fighting in WWII. The memories of WW II, Pearl Harbor and military service became springboards for both personal and group bonding.

Physical Engagement – The viewing experience is somewhat passive and largely cognitive. The brain health benefits of the Photavia V-Clips would be enhanced if they could include physical activity and movement.

IN CONCLUSION

Personal bonding and group cohesion can be stimulated in senior living communities by strategic selection of stimulating programs, like Photavia V-Clips coupled with the principles of MINDRAMP’s Cognitive Activity Professional Trainings.

¹ Baimel

Siegmán, Physiological and Behavioral Synchrony predict Group cohesion and performance.
[www.nature.com/scientificreports . \(2020\) 10:8484 | https://doi.org/10.1038/s41598-020-65670-](https://doi.org/10.1038/s41598-020-65670-3)

3

⁵ See www.photavia.net