

Interpersonal Emotions: Exploring Humans Behavioral Patterns

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Abstract

This short paper presents the interactive installation 'Interpersonal Emotions' (2023-2024) exploring aspects of people's behavior, driven or influenced by sound and light while negotiating 'who will have a seat' in a darkened space in which the chairs have spots underneath and emits sounds when approached by the audience. The work explores aspects of interaction design and emotional design and a computer vision system maps the audience movements in space in the search for patterns. The system uses machine learning object detection to navigate the emerging patterns giving the artist the chance to explore the 'aesthetics behind interaction' driven by the emotions awakened or triggered by sound and light, guessing what attracts and directs their moves, what their motivations to act — subtleties about our intuitive, cultural and emotional reactions to environment signals and the ways we negotiate space when in public shared environments. In a contemporary hyper-mediated society, people have become increasingly physically isolated, and loneliness and depression, have become social problems worldwide, especially after COVID-19 pandemic. The intention is to explore, in the design of this interactive installation, by simulating the communication and negotiation between people influenced by environmental signals and presence, behavioral patterns that can help to escape loneliness.

Keywords

Loneliness, Depression, Personal space, Territorial awareness, Influence, Relation, Randomness, Interpersonal emotions, Trajectory, Hyper-mediated society, resilient stories, non-linear narratives, and collective stories.

Introduction

Cigna [1] conducted a nationwide online survey with 20,000 American adults in collaboration with Ipsos to investigate the effects of loneliness in the country. According to the survey, the majority of Americans are regarded as lonely if they receive a score of 43 or above on the UCLA Loneliness Scale, a 20-item test designed to gauge social isolation and subjective feelings of loneliness.

Remarkably, 2 in 5 Americans, or 43% of participants, said [2] they felt their relationships were meaningless and that they were alone most of the time. Furthermore, 27% of Americans, or 1 in 4, feel that they are rarely or never understood and connected to by others. Merely 53% of the respondents said they regularly engage in meaningful face-to-face social interactions.

Researchers believe that these numbers reflect the way Americans are currently living: a greater emphasis on work, living apart from family, and a greater reliance on social media interactions rather than in-person interactions. As a result, isolation has reached a peak and genuine, meaningful relationships have become unnecessary.

Before the COVID-19 pandemic, [3] America was experiencing mental health issues that were partly caused by an ongoing epidemic of loneliness. According to our published research, loneliness affects a large number of people nationwide, across all age groups and demographic categories, and is especially difficult for professionals. Now, fresh, corroborated research from Morning Consult, which was hired by Cigna, indicates that 58% of American adults believe they are lonely. This is somewhat in line with pre-pandemic studies that indicated 61% of adults felt lonely in 2019, up 7% from the previous year.

Gen Z is facing unique mental health issues that no previous generation has seen. [4] The lowest percentage of any generation, only 45% of Gen Z report "excellent" or "very good" mental health. Of Gen Z individuals, 91% report having gone through at least one physical or emotional symptom as a result of stress, such as feeling down or depressed (58%), or not being motivated, interested, or energetic (55%). Furthermore, 68% of Gen Z say they are really stressed out about the future.

According to Victor Snader [5], 36% of Americans, the pandemic has made them feel more alone than usual. Nine percent report feeling less alone than normal, and fifty percent say there has been no discernible difference. The coronavirus issue makes 34% of millennials feel more alone always or frequently. Because of the coronavirus crisis, 27% of Gen Z members report feeling more alone either frequently or always. The coronavirus issue makes 22% of Gen X feel more alone always or frequently. Due to the coronavirus scenario, 20% of Baby Boomers report feeling more alone constantly or frequently. Because of the coronavirus scenario, 30.6% of men and 25.7% of women report feeling more alone always or frequently.

Because of the coronavirus pandemic [6], 34% of millennials report feeling more alone either frequently or always. Compared to baby boomers, when the same figure is 20%, this is 70% greater. According to US respondents, the coronavirus scenario makes them feel more alone 30.8% of the time.

Compared to the global non-US average of 22%, this is 40% higher. In comparison to those who say they are seldom or never lonely (9%) due to the current circumstances, more people (29%) who say they are always or frequently more lonely due to the coronavirus scenario also claim their relationships have gotten worse. Compared to others who haven't been as severely affected by coronavirus loneliness, those who report higher levels of loneliness due to the situation express greater negative consequences on their relationships.

In this survey, according to Viktor Sandres [6] the respondents from all four generations stated that the coronavirus issue had a significant negative impact on their level of concern. Based on a cross-generational comparison of the respondents' responses to all four of these questions, it appears that younger respondents with higher levels of social anxiety are more likely to worry about returning to society and be glad when they socialize less.

While baby boomers (ages 55 to 76) report higher levels of anxiety (88.8%) compared to millennials and Generation X (90.2% and 88%, respectively), boomers express less gratitude for their time away from socialization and less fear of reintegrating into society. Compared to other generations in the chart, baby boomers answered to the poll at the lowest rate.

In comparison to their Generation Z and millennial counterparts, Generation X (those between the ages of 40 and 54) respondents report lower levels of social anxiety, higher levels of increased anxiety due to the coronavirus situation (88%), and higher levels of relief about socializing less (51.8%) than millennials worry about returning to society (41%), but less than millennials do.

Though Millennials were marginally less likely than Generation Z to have social anxiety, feel relieved from having to socialize less (48.4%), or worry about returning to society (42.6%), they nevertheless express the highest level of increased anxiety as a result of the coronavirus scenario (90.2%).

In contrast, respondents from Generation Z report lower levels of anxiety (77%) as a result of the coronavirus situation than respondents from previous generations. However, they report higher levels of social anxiety, higher levels of relief from the pressure to socialize (56.9%), and higher levels of concern about returning to society after the lockdown restrictions are lifted (49.1%).

Even though the majority of respondents are more worried about the coronavirus situation, those who identify as socially anxious (of any generation) are twice as likely to worry about returning to society and more than twice as likely to be relieved by social distancing requirements that allow them to socialize less than those who don't identify as socially anxious.

The data paints a disconcerting picture of a gradual decline in the quality of our lives, primarily attributed to a worsening mental well-being resulting from the escalating alienation between individuals.

In essence, our societal fabric thrives on the vitality of human interaction, and the flourishing of our communities is deeply rooted in communication and meaningful connections. The data underscores a perilous trajectory, where the erosion of these fundamental ties poses an escalating risk of psychological issues.

Paradoxically, while the vital need for interpersonal bonds intensifies, the prevalence of social anxiety symptoms is on the rise. This incongruity signifies a dangerous trend where, despite an intrinsic human need for connection, individuals are experiencing heightened discomfort and anxiety in social settings. The discord between the essentiality of interpersonal relationships and the increasing manifestation of social anxiety symptoms is a stark call to action.

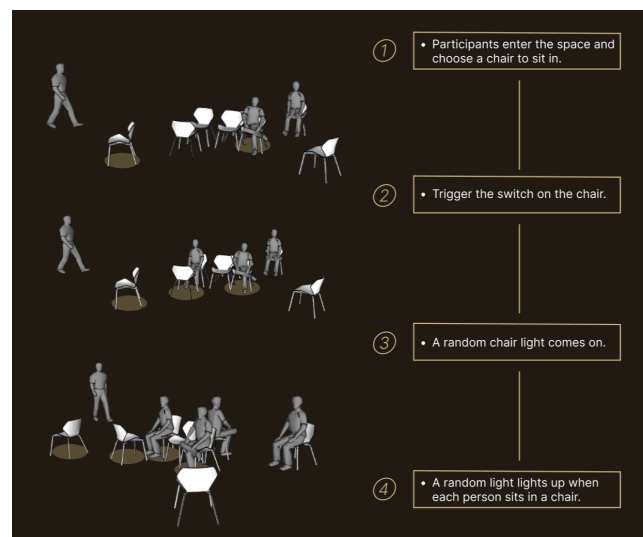


Figure 1. Sketch of the installation setup and responsive control system using Arduino and sensors. Image by the author.

Addressing this dissonance becomes imperative. It demands a collective commitment to fostering, creating, and reinforcing interpersonal bonds at various levels of society. Whether through community initiatives, educational programs, or workplace policies, there is a crucial need to prioritize and invest in initiatives that promote genuine human connections. Recognizing the interconnectedness of mental well-being and social bonds is pivotal in steering our society towards a more harmonious and psychologically resilient future.

Interpersonal Emotions (2023-2024)

The Interactive Installation “Interpersonal Emotions” (2023-2024) is an interactive system that lets users experience both the impact of other people and their personal space. The technique of communicating with others in the same location using light and music is simulated in this piece. By selecting their favorite position, participants will reveal aspects of their personalities and behavioral patterns.

Like the current state of light and music, the relationships between individuals get more intricate and unpredictable as more people join. The sound that the chairs make also conveys the sense of interpersonal communication.



Figure 2. Proof of Concept (POC), rehearsal, testing the installation setup, and responsive control system using Arduino and sensors. Image by the author.

In 1947-1948, Maurice Merleau-Ponty taught a course at the Universit de Lyon entitled "Language and Communication." [7] concerned with three basic issues: the critique of scientism-particularly in psychology, linguistics, sociology, and history, including a discussion on the relationship between language and thought, and the role of the speaking subject in communication.

Merleau-Ponty, in "Consciousness and the Acquisition of Language" demonstrates the advantages of the phenomenological method over the reflexive and inductive methods and also points out [7] the distinctions between the human, vital, and physical orders in the Structure of Behavior.

In "Language and Communication" he stresses the importance of achieving access to the internal laws of the organism and confronts us with a study of language as he most essential structure of the human organism.

The project controls sound and light changes with Arduino technology. People turn on the lights, and a random number generator selects the color. Upon sitting, many chairs produce incoherent noises. The way individuals behave affects how lighting and noises change. People may pick from many sets of chairs in the area, and when they sit down, a switch on the cushion activates the lights or noises on any of the seats. The lights and music adjust to the movement of individuals, producing a dynamic visual and aural impression.

The chairs are arranged with consideration and are based on data research. Various roles correspond with distinct personalities and inclinations of people. It can attract spectators' attention to select a chair by illuminating the various chairs at random when participants sit on it. People will be drawn to participate when the sound of simple, transparent, lovely single tones is produced as participants sit down. The audience will experiment with sitting in different chairs to discover a different combination of light and sound because the light and sound are activated at random by buttons on the chair.

Based on computer vision and machine learning, this interactive art installation tracks and interprets the movement trajectory of its viewers in space, producing various light and sound effects that correspond with their emotional states and behavioral patterns. The sound is composed of two elements. Firstly, there's a pad sound continuously looping in the background. Its main function is to draw in the audience for participation while setting the ambiance of the entire space. Though subtle, this pad-like sound imparts a distinct atmosphere to the surroundings.

The second type of sound comprises eight different musical notes. These notes harmonize in pitch and are synthesized, resembling the single tones found between piano and bell sounds. However, due to varying note lengths and releases, the sound's clarity is significantly enhanced, especially amidst multiple simultaneous sounds, preventing confusion and cacophony. The notes are randomly generated by buttons on the stools. At a tempo of 80 beats per minute (bpm), each note forms a four-bar phrase, continuously repeating until participants rise from their seats.

Within this setup, warm yellow lighting predominates, remaining static rather than synchronized with the music. As the lighting is sporadically triggered, participants are drawn to its allure, accompanied by the music, creating an intriguing conversational space. They explore different stools, engage with fellow participants, and endeavor to comprehend the underlying connections. In such an atmosphere, interpersonal bonds naturally form, almost imperceptibly.

The project intends to investigate how individuals engage with their surroundings, with other individuals, and with themselves, as well as the aesthetic experience and emotional response that these encounters elicit.

For the observer to immediately experience their presence and the influence of others in the area, as well as the ensuing emotional shifts and aesthetic consequences, the project aims to create a tactile, multisensory, and dynamic place. It is intended to provoke thought and reflection in the audience about both society and oneself.

Final Considerations

In the contemporary hypermediated landscape, people's communication patterns have undergone profound transformations, leading to an alarming increase in societal loneliness and despair. As information access, self-expression, and interpersonal communication increasingly rely on digital tools and platforms, questions arise about the authenticity of virtual interactions. In this fast-paced world, finding our rhythm and equilibrium in this evolving digital landscape becomes a pertinent concern.

In response to these challenges, the artist proposes that interactive artwork serves as a crucial vehicle for fostering social communication and empathy. By creating a space where viewers can engage with one another in a communal setting, experience the emotions and behaviors of others, and recognize the impact of their actions, the artwork becomes a catalyst for meaningful connections. This not only piques people's interest but also actively encourages social interaction, contributing to the vitality of society. In an era dominated by digital interfaces, the artist's perspective highlights the importance of leveraging art and technology to bridge the growing gaps in human connection, ultimately promoting a more harmonious and empathetic social fabric. "Interpersonal Emotions" (2023-2024) emerges as a compelling response to the evolving dynamics of human connection in today's hypermediated era. This immersive installation offers users a unique opportunity to not only witness but actively engage with the impact of other individuals on their personal space. The piece employs a sophisticated system that replicates the nuances of interpersonal communication through a combination of light and music.

Participants are invited to select their preferred positions within the installation, a choice that unveils aspects of their personalities and behavioral patterns. The interactive nature of the installation transforms the act of communication into a multisensory experience, where the current state of light and music mirrors the complex relationships unfolding within the shared space. The intricacy and unpredictability of these relationships intensify as more participants join the interactive environment, mirroring the dynamics of real-world social interactions.

A noteworthy feature of "Interpersonal Emotions" lies in the incorporation of sound generated by the chairs themselves. This auditory element serves as a metaphor for the subtle yet profound nuances of interpersonal communication. The creaks, whispers, and echoes emitted by the chairs become a tangible representation of the ebb and flow of connections, echoing the rhythm of human interactions. The installation goes beyond visual aesthetics, delving into the realm of sensory engagement to convey the richness of interpersonal dynamics. It not only offers a captivating exploration of human connection in a digital age but also prompts contemplation on the intricate dance of relationships in an increasingly interconnected world.

Acknowledgments

The author extends sincere gratitude to Professor Dr. Clarissa Ribeiro, Program Director of the Roy Ascott Studio Advance Program in Technoetic Arts for her invaluable advice and to Mrs. Eleanor Zhang for her help and support.

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Authors Biographies

Yuxuan Zheng was born in Shanghai, China. She is currently a 4th-year undergraduate student at Roy Ascott Studio Advanced Program in Technoetic Arts in SHanghai. Her artworks focus on psychology, ethics, and design, she also had the opportunity to discuss specific phenomenon such as social interaction, gender equality, and emotional expression.

Dr. Chen Yufei, is a sound artist, electronic musician, Ph.D. of philosophy, and senior lecturer at Roy Ascott Studio. Yufei has been engaged in live music performance and sound creation for many years and has rich experience in cooperation with different artists and studios, such as low-tech laboratory(Wuhan), UFO studio (Hangzhou), SLATE Contemporary Dance Group(US), mentioned a few.