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The Digital Gaze: Exploring Virtual Eye Contact in an Online Psychotherapy-Aligned Setting

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Abstract

While online video communication has become a part of many people's lives, it still lacks an important aspect of human interaction – eye contact. Conventional technology does not provide the ability to share eye contact online. The NUNA machine is a unique communication unit that enables this shared virtual eye contact (VEC). The aim of this study was to explore how people experience VEC in a virtual therapeutic setting, specifically in a Motivational Interview (MI). This experience was specifically juxtapositioned to an in-person setting as it provides eye contact as a natural part of the conversation. Research questions included how participants would experience eye contact in a MI setting in 1) a video conference with shared eye contact and 2) an in-person conversation, how participants would make sense of the perceived differences between the settings, and which value participants saw in VEC. In the MI, participants first spoke to each other using the NUNAs and then seamlessly continued their conversation in-person. After this exposure, they took part in qualitative interviews sharing their experience and how they made sense of it. These qualitative interviews were then analyzed by conducting qualitative content analysis. In total, 10 university students, approximately in their 20s, were interviewed. The results suggest that VEC acts as an antagonist to the disembodiment that is inherent to virtual interactions by providing connection and increasing the degree of realness with which the vis-à-vis is perceived. It further revealed that the NUNA setting provided a focused environment in which participants felt like they could work on their emotions and feel validated by and committed to their vis-à-vis. Thus, VEC may strengthen therapeutic alliance and be a promising tool for online psychotherapy by providing a higher degree of realness as would be natural for in-person conversations.

Keywords: virtual eye contact, motivational interviewing, disembodiment, virtual interactions, online psychotherapy, digital psychotherapy

Sammanfattning

Videokommunikation online har blivit en del av många människors liv, men det saknas fortfarande en viktig aspekt av mänsklig interaktion – ögonkontakt. Konventionell teknik ger inte möjlighet att ha ögonkontakt online. NUNA-maskinen är en unik kommunikationsenhet som möjliggör denna delade virtuella ögonkontakt (VEC). Syftet med den här studien var att undersöka hur människor upplever VEC i en virtuell terapeutisk miljö, särskilt i en motiverande intervju (MI). Den här upplevelsen var särskilt jämförbar med en personlig miljö eftersom ögonkontakt är en naturlig del av samtalet. Forskningsfrågorna omfattade hur deltagarna skulle uppleva ögonkontakt i en MI-miljö i 1) en videokonferens med ögonkontakt och 2) ett personligt samtal, hur deltagarna skulle förstå de upplevda skillnaderna mellan miljöerna och vilket värde deltagarna såg i VEC. I MI-miljön talade deltagarna först med varandra med hjälp av NUNA och fortsatte sedan sömlöst sitt samtal i en personlig konversation. Efter denna exponering deltog de i kvalitativa intervjuer där de delade med sig av sina erfarenheter och hur de tolkade dem. Dessa kvalitativa intervjuer analyserades sedan med hjälp av kvalitativ innehållsanalys. Sammanlagt intervjuades 10 universitetsstudenter, ungefär i 20-årsåldern. Resultaten tyder på att VEC fungerar som en antagonist till den kroppslöshet som är inneboende i virtuella interaktioner genom att tillhandahålla anslutning och öka graden av realitet med vilken motparten uppfattas. Vidare framkom att NUNA-miljön skapade en fokuserad miljö där deltagarna kände att de kunde bearbeta sina känslor och känna sig bekräftade av och engagerade i sin samtalspartner. VEC kan således stärka den terapeutiska

alliansen och vara ett lovande verktyg för psykoterapi på nätet genom att ge en högre grad av realitet, vilket vore naturligt vid personliga samtal.

Nyckelord: virtuell ögonkontakt, motiverande samtal, kroppslöshet, virtuella interaktioner, psykoterapi online, digital psykoterapi

The Digital Gaze: Exploring Virtual Eye Contact in an Online Psychotherapy–Aligned Setting

Modern day life is characterized by digitalization and globalization. Formerly distinct cultures are blending with one another, trade and travel agreements void borders, innovative technologies give rise to new and worldwide markets. With the scale of our living environment rapidly increasing in this way, the elements that mark our lives change. High-speed internet and virtual environments allow people from all over the world to meet without travel, avoiding pollution and offering one partial solution to the environmental crisis (Bailenson, 2018).

Virtual interactions further enable an increase in the availability of a multitude of services that priorly were tied to a specific location, e.g., therapy (Thomas et al., 2021), enriching quality of life. However, the limited adaptability of human interaction to online spaces has been demonstrated painfully during the Covid-19 pandemic (Buecker & Horstmann, 2021).

As social interactions are a fundamental aspect of human well-being, increasing their availability may come with many benefits. However, using virtual spaces for this increase comes with many restrictions to the social experience. Videocalls result in lower perceived social presence and also some privacy concerns (Basch et al., 2021). It can be more tiring and both conversation partners can often come across various technical issues (Buckman et al., 2021).

However, the exact effects of these unfortunate modalities are not yet known completely. For psychotherapy, reviews have seen no significant difference in the therapy outcome between virtual and in person settings (Fernandez et al., 2021; Giovanetti et al., 2022; Norwood et al., 2018; Thomas et al., 2021). At the same time, Norwood et al. (2018) further showed that therapeutic alliances were slightly smaller for virtual therapy.

Generally, therapists perceive online therapy as an acceptable or a good way of providing help (Buckman et al., 2021). Some advantages include better accessibility for patients, working from home opportunities for therapists, and more flexibility for everyone (Buckman et al., 2021).

One thing that is natural for human conversation that is missing in conventional videocalls is eye contact (Gordon et al., 2020). When people choose where to look in interpersonal communication, the other person's face and eyes are the most common choice. Gaze plays an important role in starting, keeping and influencing a conversation. It shows the other person when the speaker is done talking and when it is their turn to speak, but it is also a signifier of attentive listening (Hessels, 2020).

Thus, eye contact is a necessary aspect of human interaction and is important in every conversation to communicate emotions and keep the flow of conversation. While eye contact is natural for in-person communication, online videocalls do not offer this medium. The reason is that the displayed vis-à-vis and the camera are at separate places, making it impossible to gaze at both at the same time (Kaiser et al., 2022). In a study on online video communication with health care providers, patients mentioned the lack of eye contact and noted that the physicians often looked at different windows or somewhere else than the actual person they were talking to. This made them feel like they were not being paid attention to and also made it more difficult for them to talk about their problems (Gordon et al., 2020).

These results then raise the question which effect eye contact may have in virtual interactions, especially in the context of healthcare. However, this is challenging to study as common technologies do not allow mutual eye contact in videocall conversations. Some studies have approached this challenge by trying to imitate eye contact. For example, Helou et al. (2022a; 2022b) had health care professionals looking directly into their camera instead of onto the screen. That itself could give patients a sense of eye contact. Patients felt a sense

of empathy and willingness to help from their clinician, which in turn made them feel more supported. This was statistically significant specifically for physicians whose overall attitude was perceived as bad (Helou et al., 2022a). Using this imitated eye contact, physicians may also appear to have better skills in communication and building and maintaining interpersonal relations. While this kind of virtual eye contact may bring some benefits to the patient, it is not reciprocal and can feel unnatural. A notable disadvantage is that when the physician or therapist is looking directly into the camera, they cannot see the patient or notice their non-verbal expressions or emotions. This may also be a barrier in trying to provide proper care (Helou et al., 2022b).

The NUNA (old Swedish word for “face”) machine available at Umeå University offers a unique feat: it enables two speakers to maintain virtual eye contact simultaneously. This enables new research approaches like the one carried out by Kaiser et al. (2022). In their study, participants engaged in friendly and effortless conversation about possible vacation destinations while the researchers would switch the participant’s vision between a shared gaze and a forced skewed visibility like it is usually experienced in conventional videocalls. Participants were later interviewed on their experience. Qualitative analysis of these interviews revealed that they perceived the shared gaze to help them to create their relationship together and to feel more connected with and less intimidated by each other.

Since the NUNA’s creation dates back to 2021, not many studies have yet been able to utilize it. While the present findings are interesting, they are of course limited. For our research, we aimed to expand on these findings in a more specific context. With the potential of improving interpersonal connection, we wished to apply this new technology specifically to a therapeutic setting. We further chose to counter-position it not to skewed visibility but to an in-person conversation. To realize these aims, we chose to conduct a qualitative study, first exposing participants to the two settings (NUNA and in-person) and then interviewing them about their experience. Our inductive approach was carried by the following research questions:

1. In a motivational interview setting¹, how do interviewer and interviewee experience their interaction in 1) a video conference with shared eye contact, and 2) an in-person conversation?
2. In a motivational interview setting, how do interviewer and interviewee make sense of the perceived differences between those settings?
3. In a motivational interview setting, what do participants value about a video conference setting with shared eye contact?

Methods

Instruments

NUNA

The NUNA system consists of two communication units specifically designed at Umeå University to investigate the importance of gaze in digital (online) conversations. The system is built in a way that allows to maintain eye contact during virtual interactions, which is not attainable using regular video conference software. This is made possible by screen on mirror projection and a moving camera behind the mirror that can follow the interacting person's face. LED stripes on the sides illuminate the user’s faces and allow both to properly see each other with all details. The NUNA further offers options for shifting the camera to manipulate

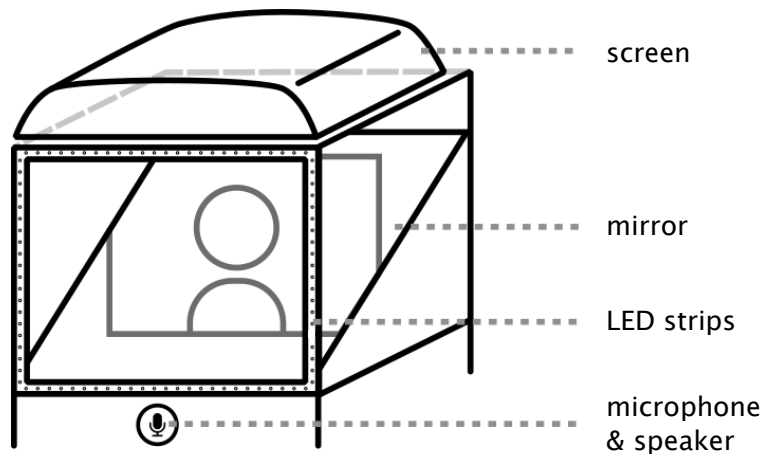
¹ see *Methods*: “*Motivational Interviewing*”

research conditions (Kaiser et al., 2022). A simplified illustration of the NUNA is given in figure 1 below.

Figure 1

A simplified visualization of the NUNA.

In its use in this study, every side except the front side was covered by an open, black box to hide cables as well as other technical features and improve the visibility of the mirrored screen.



For the purpose of this research, the cameras were set to a fixed position that enabled virtual eye contact (VEC). This allowed participants to have natural eye contact when they wanted to and sit in a relaxed position in front of the camera. At the same time, they could break the VEC when desired. The camera zoom was set to 35% to enable displaying head and shoulders while allowing to see limited body language/gestures. This way, conditions were as similar to in-person conversation as possible. The only thing participants were able to control was the sound volume and if their own microphone was muted.

Motivational Interviewing

To ethically mimic a therapeutic setting within this research design, motivational interviews (MI) were used as a research condition, as they are fit to create emotional and sensitive conversations. MI are a client-focused approach to help people change their habits and their behavior by helping them to find motivation, reason(s) to change, and to overcome their inner barriers. The approach can be used in various settings but is mainly used in healthcare and therapy (American Psychological Association, 2018).

MI was originally derived from Carl Rogers' person-centered approach and utilizes four fundamental processes to provide a conversational flow that may nourish fruitful conversation (MINT, 2021). These processes include 1) engaging with the client by active listening, affirming personal strengths and paraphrasing, 2) focusing and directing the conversation to the relevant issue at hand, 3) evoking the reasons that may stand behind certain patterns while embracing ambivalence to give room for solving it, and 4) planning together how change may be achieved, with the MI practitioner supporting the client in their own abilities. In these processes, practitioners use a set of core skills like open questions, affirmations, reflections, summarizations, and change talk while applying the MI spirit.

The MI spirit is characterized by acceptance and compassion, creating a collaborative process in which the interviewer is an expert in helping to change but the client is recognized to be the expert of their own life (MINT, 2021).

Participants

To ensure the suitability of the participants for those taking on the role of the interviewer, students from the department of psychology at Umeå University who have passed a MI course were approached via e-mail and also in-person during their lectures at the University. While some participants could be recruited in that way, it was not enough for the research. Thus, recruitment was adjusted to the possibilities. In order to get more participants, now meaning those taking on the role of the interviewees, international students at Umeå university were approached through an international WhatsApp group. For interviewees who were missing an interviewer, researchers decided to take on the role of the interviewer since they had previous training in MI.

One pilot interview was conducted with a dyad of fellow health psychology students. After some consideration and with consent, it was included in the analysis since it provided valuable information and no further changes to the methodology or procedure were made.

In total, 11 people took part in the study. 3 of these people acted as a motivational interviewer and 8 of them took on the role of being interviewed. Each interviewer was paired in a dyad with exactly one of the interviewees. The remaining 5 interviewees each were motivationally interviewed by one of the researchers. After the MI, 1 interviewee dropped out of the study, resulting in a total amount 10 participants that produced qualitative data for the analysis.

Demographic information was not collected from the participants to provide a greater sense of anonymity. In the first draft of the study design, any demographic information could have identified any of the participants as the original plan was to recruit students from the Master's program in health psychology. In the later stages of the design, this approach neglectfully was not reconsidered, resulting in missing official answers of the participants on their demographic information. However, from the researchers' conversations with and impressions of the participants, it can be said that they all were students approximately in their 20s. 9 of the 10 participants presented female and 1 participant presented male. In his dyad, the male participant acted as the motivational interviewer. Participants' nationalities varied but were all European. Out of all MI, only one was conducted in the native language of both participants. All other MI and all qualitative interviews were conducted in English. Language proficiency was not measured, as participants were trusted to participate only when they felt able to. Furthermore, even with a high proficiency in English there could still be a language barrier. Added to that, out of all participants, 8 were international students who had their language proficiency tested in order to qualify for studying in Sweden.

Procedure

At the beginning the participants were jointly introduced to the NUNA and its technicalities, received explanations on the research process and were informed about their rights as participants. In the interest of full transparency, they were provided with all information about the research process and aim and could ask anything they wanted. Since in this inductive process there was no hypothesis or reason to deceive, there was no need to withhold anything from them. After this explanation by the researchers, participants had time to read an information sheet containing the same information and could ask any additional questions. The information sheet was available to them throughout the whole process.

Following this introduction, both interviewer and interviewee went to sit at one of the two NUNA machines each. Interviewers were always in the smaller room of the two rooms available, with the idea that they would relocate to the larger room to meet the interviewee

later. For more familiarity, both participants were instructed to engage in small talk for about 5 minutes before starting the MI.

Motivational Interviews

As described in “Instruments”, MI was chosen to ethically mimic a therapeutic setting. Having originated out of Rogers’ person-centered approach, it is traditionally close to psychotherapy. Due to its inquisitive and focused nature, conversations may become sensitive quite early. MI is further fit within the study design as it is trained at the department of psychology at Umeå university, allowing for a realistic recruitment of participants within the department. As described above, the researchers were further enabled to take on the role of motivational interviewer as they had received training themselves. MI thus provided a low-threshold method to mimic a therapeutic setting.

During their appointments, participants held a MI in two settings. First, they communicated physically apart using the NUNA system. Then, after a set time of about 15 minutes, the interviewers left the NUNA room and met in person to continue their conversation for another about 15 minutes. Interviewers were asked to keep track of time and move location at a convenient point in the conversation to interrupt it as little as possible as well as finish the conversation at a time they felt was appropriate and when they could wrap it up nicely.

This order of settings (first NUNA, then in-person) was deliberately chosen instead of alternating between dyads. We were aware of the possible effect that sensitive conversations would feel different in person because they happened at a later stage in the overall conversation, and not because they took place in person. However, we consciously chose to subordinate this effect to the priority of interviewing the limited amount of people on a similar experience. This prioritization results from the frame of this study being designed to explore participants’ experiences with VEC and how they made sense of them, not to observe in which timeframe in a conversation the VEC may exude whichever effect at whatever intensity. These considerations and curiosities may prove as interesting questions for further research.

Participants were not monitored during either phase to enable a comfortable discussion and privacy for the matter at hand.

Qualitative Interviews

Following a short break after the MI allowing for spontaneous needs such as short decompressing, participants were engaged in semi-structured interviews. In case of dyads both participants were interviewed by both researchers at the same time, creating somewhat of a group discussion. Group discussions come with the challenge of getting people together at the same place and time. However, once that is achieved, group interviews offer many strengths. As their nature is interactive, they allow participants to agree, disagree, share and build their thoughts on each other, which may benefit the generation of ideas and rich experience recollections (Coenen et al., 2012). Not only interviewees, but also researchers can complement each other in coming up with follow-up questions. In our case it has also proven to be less time-consuming than separate interviews. In the case of one of the researchers doing the MI, the other one would then do the qualitative interview. Semi-structured interviews were chosen to give participants the space to talk about whatever they deemed most significant, but to also have some guideline to follow in case they would not mention some of the most important things, for example VEC. Interviews took from 18 to 28 minutes, depending on how much the participants had to say. These interviews were audio-recorded only.

Questions that were prepared to help guide the interviews were as follows:

1. How was the overall experience?
2. What changes did you notice when you moved to in-person communication?
3. How do the settings feel different?
4. How was the experience of online communication with eye contact?

Ethical Considerations

MI can be intimate and touch upon sensitive topics, so it was ensured that the interviewers had experience and education on how to conduct them and interviewees were informed about the basic properties of MI. On this basis, they were able to choose their specific topic and were not forced to share information they were not comfortable with. The suitability of participants was ensured as fit people were approached individually (see “Participants”).

All respondents got familiar with the purpose of the study and gave informed consent to participate. Participants were further instructed that they are free to leave the interview setting at any time. In case of any issues or questions, the researchers were always available close-by.

The MI were not recorded, to ensure that the participants feel comfortable sharing everything they needed to in order to keep it as realistic, meaning close to a real therapeutic setting, as possible. This means the interviews were done in private and nobody but the participants had access to their content. As the researchers did some MI themselves, they did not share any information of these to each other, keeping confidentiality. The only information they have is from what the participants decided to share in the qualitative interview.

A private Microsoft Teams Channel within the Umeå University Office 365 OneDrive was used to store the recordings. The same Office 365 was further used to transcribe the qualitative interviews and for the following content analysis. In the transcription, participants' names and person-specific information were anonymized.

Content Analysis

The process of qualitative content analysis was done according to a guideline by Graneheim & Lundman (2004). This method was chosen as it offers a high information value in relation to the limited time frame the researchers were provided with.

First, all interviews (8 in total) were transcribed. The researchers got familiar with the content by re-reading them as many times as they needed to. The next step that followed was creating condensed meaning units (CMUs). This meant separating the text into more readable and shorter sentences, while still making sure to keep all the information as it is. To be time-efficient, this work was divided among the researchers, each of them producing the CMUs from 4 interviews. To ensure similarity in the approach and avoid discordant ways of creating the CMUs, calibration was strived for before the actual creation of the CMUs. For this, some pages were analyzed simultaneously. Arising differences were discussed and a similar approach was agreed upon.

To create an analysis that profits from the researchers' personal backgrounds instead of suffering from them, the analysis was carried out in discussion with one another in all later steps. All CMUs were given one or multiple codes to depict their content. The total number of codes was 34. Those codes were then combined into separate groups, creating 32 categories that carried a meaning similar to subthemes. Through a subsequent process of illustrating the different categories and their relation to each other, 1 final main theme, 3 themes and 9 subthemes were deducted.

For illustration, examples of all the steps can be seen in **Fehler! Verweisquelle konnte nicht gefunden werden..**

Results

The analysis resulted in 3 themes and 9 subthemes (see Table 2) as well as an overarching main theme illustrating the interconnectedness of the described aspects.

Citations are provided as additional illustrations and are excerpted from the condensed meaning units for the sake of readability and anonymity.

With VEC, We Can Create, Maintain, And Utilize An Interpersonal Connection.

Although all experiences were entirely unique, participants often referred to the same constructs: distance and connection, vulnerability and protection, focus and distraction. When prompted about the VEC, participants reflected different opinions on what is an interconnected web of aspects of their interactions in this specific therapy-aligned setting. The following questions represent the stories shared that have surfaced during the data analysis: Did a person feel like a real person only when they were in the same room? Could they themselves be a real person when they weren't? How vulnerable or protected did they feel in these instances and how would this inhibit or encourage them to focus on themselves or others? Ultimately, were they able to lead the conversation they wanted to and why?

The themes resulting from their impressions paint a picture of the aspects that perceivably shaped their connections and therefore their interactions, with VEC as a new and added resource.

Table 1

Example of data analysis

Condensed meaning unit	Code	Category	Subtheme	Theme
The sound was a bit robotic sometimes	Sound			
The camera unfocused sometimes, which felt weird	Camera	I am aware that the NUNA is an artificial device	VEC increases the humanity of an otherwise abstract interaction	Ultimately, I am speaking to a screen and not a real person
Maybe the eye contact was easier in the NUNA because it's not real	Abstract NUNA			
In the process I thought that I am talking to a screen on top of a mirror	Abstract NUNA			
In NUNA it felt more like you talked to the person, compared to Zoom or other things	Abstract NUNA, Dehumanization			
I think the digital eye contact made me more comfortable and helped the conversation in that way	Comfort, Gaze in the NUNA, Importance of gaze, Conversation quality	Eye contact makes it more real		
The eye contact in NUNA makes it feel more real, rather than in Zoom or something similar	Gaze in the NUNA, Conventional videocalls			

1: Ultimately, I Am Speaking To A Screen And Not A Real Person

The NUNA was perceived as a big box with noticeable lighting, camera and sound quality. It was described by some that they were aware they were talking to “a screen on top of a mirror”. Even though their vis-à-vis was always sitting next door, participants described a distance to the other person that was caused by the machine instead of the physical distance. They elaborated that it felt like the other person was less human or that their relationship to each other felt different than in person, e.g. the person felt like less of a classmate. In person, this was a non-issue as the other person was obviously real – a matter that did not seem certain to participants in the NUNA. However, participants described the VEC to increase this realness when comparing it, albeit uninvited, to their experiences with online communication, as is described in the subthemes below. Even still, while realness may be increased compared to conventional digital interactions, it does not reach the same level as in person, thus ultimately resulting in them “speaking to a screen”.

To conclude, in the following the *degree of realness* refers to how much a person is perceived as being an actual person that the participant is talking to rather than the abstraction of this person.

It is further worth mentioning that this theme concerns how participants perceived the person they were talking to, not themselves. The latter is illustrated in theme 2 below.

a: Our Mannerisms, Posture And Body Language Are Part Of What Makes Us Real

When pondering on why the NUNA felt different from their in-person experience, the missing physical aspects were mentioned. Specifically, participants mentioned mannerisms, posture and body language. They described that body language helped them to read another person’s emotions, which was not possible in the NUNA. They further elaborated that posture also represents the role they are taking up in a space, e.g. sitting like a professional.

Quotation: “Maybe the physical position and little habits are what makes a person human and helps me to build a relationship.”

b: VEC Increases The Humanity Of An Otherwise Abstract Interaction

Although participants were aware that they are talking to a screen, some reported feeling like the VEC made it feel like they were talking to an actual person. They specifically compared this experience to conventional video platforms like Zoom or Skype, specifying that this setting felt more alive or more real.

Quotation: “In the NUNA it felt like we could have eye contact in the good way, with the lights it felt like the other person was there in person.”

c: VEC Provides Me With A Feeling Of Familiarity And Intimacy

When talking about the VEC, participants mentioned feeling close to each other or like they had a prior relationship to the other person. They could feel friendly when they had not been friends before or simply closer than they would expect to be with a stranger.

Quotation: “When we started talking in the NUNA, it felt like I was talking to a friend or something, because it was familiar.”

d: It's Easier And More Desirable To Connect To A Real Person

Participants described feelings of automatic connection or interest in the other person when they were in the same room. For example, they expressed spontaneously wanting to hug or to get to know the other person.

Quotation: “As soon as the interviewer came over here, I felt more connected to them. Before, I could see that they were relating to what I was saying, but in person it was more real.”

2: In A Virtual Interaction I Am Not And Cannot Be A Full Person

In contrast to theme 1, this theme concerns itself with how participants perceived themselves while interacting. Relying on their self-perception, participants already know that they themselves are real. However, due to the limitations of the NUNA, they cannot present their full selves, e.g. their entire body, in these interactions. While varying degrees of contentment with these limitations were shown, they further enabled an emotional protection or distance.

a: Since There Is No Person, I Can Focus Solely On Myself Without Hurting Anyone

In the NUNA, participants felt less hesitant to talk about sensitive issues when comparing it to in-person. They described not simultaneously needing to focus on their own presentation and that they could not hurt their vis-à-vis' emotions, as they weren't talking to a real person but a screen (see theme 1). This hurt was expressed in different ways, e.g. rejecting suggestions or not fulfilling the other person's expectations, or very broadly when they could not specify what exactly they meant.

Quotation: "Using NUNA for therapy would be good, because I would feel bad for hurting a therapist's feelings by telling them something didn't work."

Quotation: "In person, I was aware that the interviewer was here, but in the NUNA I only had to think about what was asked and what I wanted to say."

b: Hiding Parts Of Myself Protects Me

In the NUNA, both the limited visual frame as well as the distance were described as elements that provided protection, as participants were able to hide their body or shelter their emotions. Part of this could be due to the mentioned inability to read their emotional responses from their body language. Other aspects include feeling less "exposed".

Quotation: "In the NUNA you can hide the rest of your body and not feel as exposed as in a room, so that might also be a reason for comfort in the NUNA, but it could be anything."

c: When I Interact With A Real Person, My Emotions Feel More Intense

When making sense of the different experiences, some participants mentioned the very same emotions feeling more "heavy" or "intense" in person or "lighter" in the NUNA.

Quotation: "My feelings are accurate in both settings, in person they are just more overwhelming."

3: The VEC Provides Us With A Setting In Which We Can Work On Complex Issues Together

Participants explained that the VEC supported their conversations by making them feel seen and connected. Their focus on each other was further promoted by the void of stimuli as well as the described ease to maintain the VEC.

a: VEC Enables Us To Truly See And Hear Each Other

In their recollection, participants describe the VEC to allow them to give and feel full attention in contrast to conventional video communication platforms. Being looked at directly while they shared their emotions, stories or issues made them feel validated, listened to and appreciated.

Quotation: "The NUNA didn't add value to the content of the talk but to my feeling of being listened to and appreciated."

b: Without Distractions, It's Easier To Focus

With the technical restrictions of the NUNA, participants were exposed to fewer stimuli than in person. This was noticed and used to explain a higher focus on their own thoughts and emotions as well as on the other person. Participants spoke either about the ease of focusing in the NUNA or about being distracted by their environment more easily in person.

Quotation: "In the NUNA, the eye contact just happened. I could not look somewhere else. It was just the other person."

c: Connection Creates Commitment

Participants reported that their emotional connection fostered a sense of commitment, e.g. having to adhere to suggestions or not being able to just leave the situation. This connection was described to be facilitated in different ways, e.g. via the VEC or meeting in person.

Quotation: "It would be awkward to walk away from a work meeting with NUNA, because it would feel much more personal."

Table 2

List of themes and subthemes

Main Theme: With VEC, we can create, maintain, and utilize an interpersonal connection.

Theme	Subtheme
1. Ultimately, I am speaking to a screen and not a real person.	1(a): Our mannerisms, posture and body language are part of what makes us real.
	1(b): VEC increases the humanity of an otherwise abstract interaction.
	1(c): VEC provides me with a feeling of familiarity and intimacy.
2. In a virtual interaction I am not and cannot be a full person.	2(a): Since there is no person, I can focus solely on myself without hurting anyone.
	2(b): Hiding parts of myself protects me.
	2(c): When I interact with a real person, my emotions feel more intense.
3. The VEC provides us with a setting in which we can work on complex issues together.	3(a): VEC enables us to truly see and hear each other.
	3(b): Without distractions, it's easier to focus.
	3(c): Connection creates commitment.

Discussion

The aim of this study was to gather insights into the experience of VEC in a therapy-aligned conversation. This was accomplished by using MI to produce an emotionally vulnerable setting.

The themes constructed in the result indicate that VEC counteracts the disembodiment of virtual interactions as it directly antagonizes the effects of not being able to see each other

completely. These include the diminished ability to understand the other person, the decrease in vulnerability, as well as the lessened degree of realness with which we deem our vis-à-vis.

Theme 3(a) “VEC enables us to truly see and hear each other” suggests that VEC contributes to *understanding the other person* which is usually diminished by not being able to read each other’s body language. *Vulnerability* is decreased by the distance inherent to virtual interactions, as described in this study by theme 1 “Ultimately, I am speaking to a screen and not a real person” and theme 2(b) “Hiding parts of myself protects me”. This has also been pointed out as an aspect of online therapy (Weinberg, 2021). VEC decreases this distance as it weakens the disembodiment by adding an integral part of human interaction: gaze. This further counteracts the *abstraction* of the people interacting with each other which is caused again by not being able to see elements of what makes us human: e.g. our mannerisms, posture and body language as are described in theme 1(a) “Our mannerisms, posture and body language are part of what makes us real”.

None of these mechanisms necessarily eliminate the effects of the disembodiment that is intrinsic to any virtual interaction, but they add an additional resource for connection and insightful communication. Prior research utilizing the NUNA system supports this conclusion, presenting “Eye contact allows us to create our relationship together” as one of the resulting themes (Kaiser et al., 2022). This research compared the VEC in the NUNA with skewed visibility in a casual conversation, while our design juxtapositioned the NUNA to an in-person therapy-like conversation.

This connection may facilitate the interpersonal comfort that is deemed necessary to work through emotional issues. However, as mentioned in the introduction, meta-reviews have shown no significant differences in therapy outcomes although patient alliance is diminished for online psychotherapy (Norwood et al., 2018). In this study too, participants did not relate the productiveness of their conversations to their levels of connection to the other person. This could indicate that the two may be independent of each other.

It would seem that virtual therapy may hold a boon in focused work, providing a safe space with little inhibition thresholds. However, in-person therapy may allow to feel emotions more intensely. Interestingly, a first attempt at researching emotional activation in an online setting compared to in-person found no significant differences, albeit with a small sample size of participants (Jerkku et al., 2023). This also raises the question what exactly participants mean when they describe emotional intensity and if it refers to the same concept as emotional activation in the first place.

Nevertheless, in this study, two possible influences on the intensity of emotions present themselves: the *interpersonal connection* and the *degree of realness* with which the other person is perceived.

However, in this study the interpersonal connection too is related to the degree of realness as described in 1(b) “VEC increases the humanity of an otherwise abstract interaction”, 1(c) “VEC provides me with a feeling of familiarity and intimacy” and 1(d) “It’s easier and more desirable to connect to a real person” This notion is further supported by other subthemes like 2(a) “Since there is no person, I can focus solely on myself without hurting anyone” and 3(a) “VEC enables us to truly see and hear each other”.

Since the degree of realness is further defined by our mannerisms, posture and body language as described above, prior relationships to the people on the other side of the screen are bound to influence the perception of them in virtual interactions, as their physical expressions are already known. This aligns with research suggesting that online therapy may feel more comfortable when therapist and client already have a preexisting professional relationship (Gordon et al., 2020).

Interestingly, even though participants knew objectively that the other person was real as they had met them at least briefly before, some still reported that their conversation partner

did not feel real in the NUNA. Other participants reported the contrary – to them the person had felt just as real.

While this study is not fit to prove correlations, it revealed another curious observation: When considering their individual descriptions of their emotions, participants who described the NUNA to feel little different from being in-person described no or little differences between their emotions while those who did not perceive the other person as fully real in the NUNA described that their emotions got more intense when they met in the same room. This is presented in theme 2(c) “When I interact with a real person, my emotions feel more intense”. It also supports the possible argument of realness fostering connection which then fosters the intensity of emotions.

The increased vulnerability that presented itself in in-person interactions may present another possible influence in the intensity of emotions. In person, people could not hide parts (including both body and emotions) of themselves like they could in the NUNA as is illustrated in 2(b) “Hiding parts of myself protects me”.

In Weinberg’s (2021) reflections on the challenges and benefits of online (group) psychotherapy, he elaborates and argues on many concepts close to the ones found in this study. He discusses different definitions of what it is to be present, e.g. to be fully in the moment, a feature that the NUNA may support, or to have one’s whole self in the interaction – including the body. Considering that the concept of presence is not agreed upon in scientific discussion indicates that our participants could have had different opinions on the matter as well, potentially resulting in the same words not meaning the same concepts. Weinberg further describes that practitioners will have to overcome their own resistance to online therapy. He describes the worry about therapeutic alliance as the biggest source of doubt – a very interesting aspect that, from our results, VEC may directly counteract.

We conclude that VEC may offer a unique boon: it could complement the protection perceived of virtual interactions while fostering emotional connection at the same time. This could be a powerful support for building and keeping therapeutic alliance. Further research is needed to confirm the discussed effects and their applicability for larger or specific groups.

Limitations

While we were able to showcase participants’ descriptions of their experiences and how they made sense of them as well as conclusions about the effects of VEC, its actual power remains unknown. Though participants related many answers to the NUNA or VEC specifically, some of the described effects may instead pertain to virtual interactions in general. Of course, despite our efforts described in the Methods section, general limitations of qualitative research, e.g. lacking generalizability, apply in this study as well.

Although we did not encourage any comparisons of the participants’ experiences with conventional online communication platforms like Zoom or Skype, they would often mention it when making sense of their experience in the NUNA and the in-person setting. As it was a relevant part of participants’ sense-making, specific references to their prior experiences are represented in the results of the content analysis. However, although participants reported to interact with online video communication in their everyday lives, we acknowledge that we have not exposed participants directly to a setting that would represent conventional online video communication, thus providing a less fit experience to gather insight on. Nevertheless, we deem these results important, as participants would refer to them in describing how they felt about their experience and why.

We recognize that our study design may have been able to create a therapy-aligned setting, but it did not replicate a therapy setting: interviewer and interviewee had no prior therapeutic relationship to each other, met and conversed only for a short time, and ultimately

MI is not psychotherapy in the original sense. However, the provided setting was able to catalyze emotionally vulnerable conversations, serving its intended purpose for this study.

Sharing the challenges of being an international student with some of our participants, we are aware of its hindrances: during the information process, the MI, as well as the qualitative interview, it is possible that conversational partners could not perfectly express or understand each other. However, we recognize our participants to be self-sufficient and sound of mind and trust them to express difficulties and make decisions in their own best interest, which they were also reminded of continuously throughout the process.

In this thesis, we have been talking about degrees of realness and what may be perceived as real or abstract. However, the question of what actually constitutes reality is one we cannot or dare not to answer in this thesis.

We have stated many observations and concluded effects of VEC and their value for therapy-aligned settings and are confident about it altering conventional online interactions. Ultimately though, regardless of which qualities future research may be able to confirm or prove for either setting, depending on their individual preferences, people may prefer either of the possibilities available to them.

References

- American Psychological Association. (2018). *Motivational interviewing*. <https://dictionary.apa.org/motivational-interviewing>
- Bailenson, J. (2018). *Experience on demand: What virtual reality is, how it works, and what it can do* (First edition). W. W. Norton & Company, Inc.
- Basch, J. M., Melchers, K. G., Kurz, A., Krieger, M., & Miller, L. (2021). It Takes More Than a Good Camera: Which Factors Contribute to Differences Between Face-to-Face Interviews and Videoconference Interviews Regarding Performance Ratings and Interviewee Perceptions? *Journal of Business and Psychology*, 36(5), 921–940. <https://doi.org/10.1007/s10869-020-09714-3>
- Buckman, J. E. J., Saunders, R., Leibowitz, J., & Minton, R. (2021). The barriers, benefits and training needs of clinicians delivering psychological therapy via video. *Behavioural and Cognitive Psychotherapy*, 49(6), 696–720. <https://doi.org/10.1017/S1352465821000187>
- Buecker, S., & Horstmann, K. T. (2021). Loneliness and Social Isolation During the COVID-19 Pandemic: A Systematic Review Enriched With Empirical Evidence From a Large-Scale Diary Study. *European Psychologist*, 26(4), 272–284. <https://doi.org/10.1027/1016-9040/a000453>
- Coenen, M., Stamm, T. A., Stucki, G., & Cieza, A. (2012). Individual interviews and focus groups in patients with rheumatoid arthritis: A comparison of two qualitative methods. *Quality of Life Research*, 21(2), 359–370. <https://doi.org/10.1007/s11136-011-9943-2>
- Fernandez, E., Woldgabreal, Y., Day, A., Pham, T., Gleich, B., & Aboujaoude, E. (2021). Live psychotherapy by video versus in-person: A meta-analysis of efficacy and its relationship to types and targets of treatment. *Clinical Psychology & Psychotherapy*, 28(6), 1535–1549. <https://doi.org/10.1002/cpp.2594>
- Giovanetti, A. K., Punt, S. E. W., Nelson, E.-L., & Ilardi, S. S. (2022). Teletherapy Versus In-Person Psychotherapy for Depression: A Meta-Analysis of Randomized Controlled Trials. *Telemedicine and E-Health*, 28(8), 1077–1089. <https://doi.org/10.1089/tmj.2021.0294>
- Gordon, H. S., Solanki, P., Bokhour, B. G., & Gopal, R. K. (2020). “I’m Not Feeling Like I’m Part of the Conversation” Patients’ Perspectives on Communicating in Clinical Video Telehealth Visits. *Journal of General Internal Medicine*, 35(6), 1751–1758. <https://doi.org/10.1007/s11606-020-05673-w>
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105–112. <https://doi.org/10.1016/j.nedt.2003.10.001>
- Helou, S., El Helou, E., & El Helou, J. (2022). Physician Communication Skills in Telemedicine: The Role of Eye Contact. In P. Otero, P. Scott, S. Z. Martin, & E. Huesing (Eds.), *Studies in Health Technology and Informatics*. IOS Press. <https://doi.org/10.3233/SHTI220199>
- Helou, S., El Helou, E., Evans, N., Shigematsu, T., El Helou, J., Kaneko, M., & Kiyono, K. (2022). Physician eye contact in telemedicine video consultations: A cross-cultural experiment. *International Journal of Medical Informatics*, 165, 104825. <https://doi.org/10.1016/j.ijmedinf.2022.104825>

- Hessels, R. S. (2020). How does gaze to faces support face-to-face interaction? A review and perspective. *Psychonomic Bulletin & Review*, 27(5), 856–881. <https://doi.org/10.3758/s13423-020-01715-w>
- Jerkku, M., Nordin, J., & Kaiser, N. (2023). Emotional activation in video conferences equals that in in person meetings. *DIGITAL HEALTH*, 9, 20552076231183551. <https://doi.org/10.1177/20552076231183551>
- Kaiser, N., Henry, K., & Eyjólfssdóttir, H. (2022). Eye Contact in Video Communication: Experiences of Co-creating Relationships. *Frontiers in Psychology*, 13, 852692.
- Motivational Interviewing Network of Trainers (MINT). (2021). *Understanding motivational interviewing*. <https://motivationalinterviewing.org/understanding-motivational-interviewing>
- Norwood, C., Moghaddam, N. G., Malins, S., & Sabin-Farrell, R. (2018). Working alliance and outcome effectiveness in videoconferencing psychotherapy: A systematic review and noninferiority meta-analysis. *Clinical Psychology & Psychotherapy*, 25(6), 797–808. <https://doi.org/10.1002/cpp.2315>
- Thomas, N., McDonald, C., De Boer, K., Brand, R. M., Nedeljkovic, M., & Seabrook, L. (2021). Review of the current empirical literature on using videoconferencing to deliver individual psychotherapies to adults with mental health problems. *Psychology and Psychotherapy: Theory, Research and Practice*, 94(3), 854–883. <https://doi.org/10.1111/papt.12332>
- Weinberg, H. (2021). Obstacles, Challenges, and Benefits of Online Group Psychotherapy. *American Journal of Psychotherapy*, 74(2), 83–88. <https://doi.org/10.1176/appi.psychotherapy.20200034>