



Universiteit
Leiden

Master Media Technology

First-hand Social Awkwardness:
A Multimodal Anthropological Approach to
the Embodied Experience of Social
Awkwardness in VR

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Master's Thesis in Media Technology

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Graduation Thesis, October 2025

Leiden Institute of Advanced Computer Science (LIACS)

Media Technology MSc programme, Leiden University

Word count: 11305

Supervised by Maarten Lamers, Zane Kripe and Mark Westmoreland

Abstract

This thesis investigates how the embodied experience of social awkwardness can be translated into virtual reality with an aim to contribute to multimodal anthropology. Virtual reality use in multimodal anthropology has been a underdeveloped but gradually increasing practice. With an aim of moving beyond text-based knowledge production, the research presents a virtual reality environment created on the basis of collected phenomenological experiences of social awkwardness. Intended to translate them in virtual reality, this research centers on the process of creating the environment and whether, in the end, it can portray those experiences.

The research started with a data gathering method called photovoice to gather phenomenological experiences of social awkwardness, with an aim to understand personal experiences of the phenomenon in a more profound way. This was proceeded by an investigation into practices of virtual reality use in anthropology and on that basis thw creation of a 3D environment of interactive nature, which facilitated the experiences documented by informants in data gathering stage. The research shows the potential of this method in conveying embodied experiences, with most reviewers of the VR environment being able to feel social awkwardness. Most of the interpretation came from their own experiences both with social awkwardness and the VR environment. As such, this research contributes to the growing field of digital immersive methods in multimodal anthropology, but also other disciplines.

Keywords: social awkwardness, embodiment, virtual reality, multimodality

Table of Contents

1st supervisor: Maarten Lamers	1
2nd supervisor: Mark Westmoreland 3rd supervisor: Zane Kripe	1
Master's Thesis in Media Technology	1
Leiden Institute of Advanced Computer Science	1
1. Introduction	6
2. Literature Review.....	7
2.1 Social Awkwardness, Embodiment and Virtual Reality.....	7
2.1.1 What is social awkwardness?	8
2.1.2 Embodied experience of social awkwardness	9
2.1.3 Social awkwardness and VR	9
2.1.4 VR and embodied experience	10
2. Anthropological research	11
2.2.1 Multimodality in anthropology	11
2.2.2 VR and Multimodality	12
3. Research Statement.....	13
4. Gathering and informing of experiences	13
4.1 Informant gathering.....	14
4.2 Experience collection methods	14
4.2.1 Photovoice	14
4.2.2 Elicitation interviews.....	15
4.2.3 Transcription and coding	15
4.3 Results of the photovoice documentation and interviews.....	15
4.3.1 Cultural and social norms.....	16
4.3.2 Emotions and feelings.....	16
4.3.3 Social interactions	17
4.3.4 Time and space	18
4.3.5 Self and identity	18
4.4 Summary of findings and moving towards VR	19
5 Designing the VR implementation	19
5.1 Insights and reflection from photovoice documentation and interviews.....	20
5.2 Theoretical grounding for the design.....	20

5.3 VR experience design and user interaction.....	21
5.4 Challenges in VR development.....	24
6 <i>Reviewing experiences</i>.....	24
6.1 Reviewer gathering	24
6.2 Operationalizing the evaluation framework: VR-assisted interview and questionnaire design	24
6.3 Results of the reviewer evaluation	25
6.3.1 Gameplay/Technical aspects.....	25
6.3.2 Interactivity	27
6.3.3 Narrative	27
6.3.4 Representation.....	28
6.4 Summary of the feedback.....	30
7. <i>Discussion and conclusion</i>	30
7.1 Current outlook	32
7.2 Limitations.....	32
7.3 Future work	32
8. <i>References</i>.....	33
9. <i>Supplements</i>.....	36
9.1 Question framework for interviews for photovoice elicitation.	36
9.2 VR User Experience Evaluation – External reviewer/Informant*	37

1. Introduction

Social awkwardness is a type of psychological distress that involves the feelings of anxiety, uncertainty, and shame that derive from social situations (Clegg, 2007). It is a phenomenon that persists in the interactions, norms, and rituals of human interaction, which can even result in social alienation (Clegg, 2012). I feel personally connected to awkwardness due to its persisting presence in my life, especially as a Finnish person. While scholars share multiple alternating views on the presence of social awkwardness in the society, quietness and personal space, aspects that social awkwardness is affected by, are something many Finns can relate to (Olbertz-Siitonen, et. al., 2014). This is illustrated by the comic book called “Finnish Nightmares,” also encapsulating Finnish social awkwardness (Korhonen, 2019). On a global scale, the COVID-19 pandemic has shifted social markers and cues. Due to prolonged isolation, reading social cues has become difficult and hard to navigate in the post-pandemic era of the 2020s. As noted by a scholar, Berkers, et. al. (2020, p.1) in their book “never have we been so bodily aware from rejected handshakes to accidental sneezing in public”. As such, its presence in my life, but also in the social and cultural context in society, is something that has fascinated me.



Fig 1. Excerpt from the comic book Finnish Nightmares

Essentially, everyone experiences social awkwardness in some form or another, whether they are a shy introvert or a social extrovert. This created an interest in the phenomenological embodiment aspect of social awkwardness in an anthropological context. When this experience is something so shared, yet we have such individual experiences and reactions, would we be able to record and experience the social awkwardness of another through visual and sensory means, in its social, physical, cultural, and cognitive context?

Conveying and stepping into the shoes of another cannot be directly experienced but can be explored, and using anthropological inquiry is one way to do that. In understanding what happens in communication and interaction within a social situation today, some anthropological scholars have turned to bridging ethnographies, particularly with multimodality. Multimodal anthropology is an emerging subfield of anthropology that circles research and knowledge

production that goes beyond text-based practices, diversifying modes of inquiring and mediating sensorial experiences (Westmoreland, 2022). Multimodal approaches stem from anthropological advancements which have moved anthropology from traditional forms of documentation, with some key findings in this field provided by scholars such as MacDougall (2005), Pink (2006) & (2011), Atkinson et al (2008), and Dicks et al (2011). From ethnographic filmmaking to immersive digital environments, anthropologists have explored how visual and sensorial technologies shape and are shaped by cultural practices, identities, and relations with other people. With recent multimodal advancements in anthropology, new technologies and their potentials have been brought to attention. This takes us to the final dimension of this research, which is *virtual reality*. *Virtual reality* as a multimodal and embodied medium has been developed in an anthropological context as well, but with a limited amount of interest, providing a fascinating underdeveloped field to discover and engage in.

The aim of this research lies in the multimodal opportunities presented by researching through a medium that encompasses the visual and the sensorial, *virtual reality*. It is of interest to explore combining the opportunities that virtual reality as a form of a storytelling medium that can convey subjective experiences, using input from phenomenology of embodiment (Pink, 2011, Csordas 2011), virtual reality research (Smith and Neff, 2018, Martin et. al., 2022 and Kiltner et al, 2022) and multimodal anthropology (Westmoreland 2022, Pink 2006 & 2011, Dicks et al, 2011). Specifically, to examine how and whether phenomenological embodied experience of social awkwardness can be experienced through virtual reality, and what it can potentially bring to an anthropological context. The research and methodology will consist of a practice-led process that combines phenomenologically based data collection through photovoice and interviews that lead to a VR experience as an outcome, contributing to the methodological advancement of interdisciplinary methods to convey, represent, and analyze embodied social phenomena.

Additionally, while not a fundamental aim, by conducting this research, I want to give voice to and contribute to the accessibility, intersectionality, and representation of marginalized communities. This includes those who have disabilities that restrict social interaction and communication, and anyone who feels represented through this research. In this respect, I hope to have a positive impact.

2. Literature Review

This section discusses the dimensions of social awkwardness and its studies, investigating how social phenomena, like awkwardness has been defined in embodied and phenomenological contexts. We then move to the digital applications and research, particularly focusing on VR. Through this turn in focus, we gain insight into the multimodal dimensions offered by social VR research, touching upon anthropology as well. We discuss multimodal anthropology as a dimension of ethnographical research in VR applications and what it can offer us moving forward.

2.1 Social Awkwardness, Embodiment and Virtual Reality

In this section, discussion on related works on social awkwardness is covered. This includes a theoretical inquiry of understanding social awkwardness and phenomenological and embodied experiences of it. The focus will then turn to how social phenomena has been studied in VR, also reflecting back on embodied experiences.

2.1.1 What is social awkwardness?

Awkwardness is hard to define by scholars and after reading countless articles and studies, we sometimes still wonder as well, what indeed is awkward? As detailed by Plakias (2024), “awkwardness” refers to situations that have the property of being awkward. It can be felt but not located, existing as a property, an attribute, of social interactions. It manifests through psychological distress that involves the feelings of anxiety, uncertainty, and shame (Clegg, 2007). It is part of the general human experience, occurring both individually and collectively, straightforwardly or as a result of witnessing something awkward (Plakias, 2024).

A key scholar in defining awkwardness is Plakias (2024), with his book *Awkwardness: A Theory*, where awkwardness is defined by certain phenomenological, or in simple terms felt, components of feeling awkward. These components include uncertainty, discomfort, and self-consciousness. It is part of everyday mundane life, manifesting in social interactions with others and the spaces we occupy. Relying on our learned cultural and social norms, we intend to follow, but then fail, when interpreting social scripts in interactions (Plakias, 2024). Cultural and sociological analyses of awkwardness in general are plenty, provided by other scholars such as Giolo et al. (2023), Kotsko (2010), and particularly Berkers et al. (2025). As described by Berkers et al. (2025) awkwardness comprises of 4 main realms, (1) Social interactions: awkwardness stems from interactions with others and failure of understanding social scripts (2) Emotions and feelings: the feeling of awkward that results in uncomfortability, uncertainty, self-consciousness and other embodied characteristics (3) Culture: social interactions are not simply scripted but are culturally scripted and lastly (4) Time and space: awkwardness is magnified through spatial and temporal factors such as mismatched timings and feeling out of place within a given setting.

Scholars detail awkwardness having three key “states” of how awkwardness starts and ends. As suggested by Clegg (2012), first awkwardness starts with a feeling of a sense of moral or social transgression perceived by informants. Usually, this stems from breaking a “rule” or “norm” that is set in place, the norms of social situations not established, due to the differences in individual perceptions of situations (Berkers, 2025). Second, when awkwardness is experienced, established moral or social boundaries are disobeyed, which presents tension, anxiety, or panic that we feel (Clegg, 2012). Social awkwardness is characterized by feelings of discomfort, uncertainty, and self-consciousness that are embodied and socially and culturally constructed (Berkers, 2025). Thus, awkwardness also affects our feelings in general and how we feel about ourselves, particularly affecting our self-confidence. We feel more conscious of our actions that are temporally magnified and impacted by the space where the awkwardness happens. Third, this *feeling* of awkwardness is tried to resolve or transformed to ameliorate the feeling of discomfort. There are two ways to resolve awkwardness: either through avoidance or ignorance, such as avoiding eye contact, or attempting to resolve it, for example, with humor (Fitzpatrick & Watson, 2003; Clegg, 2012; Giolo et. al., 2012). Clegg (2012) notes that appeasing behavior that displays embarrassment, such as blushing or averting the gaze, signals an awareness of social judgment and thus a desire to appease others. This turns into a temporally conscious effort of social and/ or bodily functions that normally happen automatically (Kadambi, et. al., 2020, Clegg, 2012).

Other research that has tried to define awkwardness includes work on subjects that are directly affected by it, such as embarrassment, communication, shame, and mental disorders that result in atypical mentalizing abilities, including social anxiety disorder or autism (Aho, 2020; Kadambi, et. al., 2020). While research on these contexts is abundant and they provide interesting insights into social awkwardness, the scope of this research cannot cover all the dimensions. We

now move forward to defining social awkwardness further from its embodied dimension and the literature that is lacking in this area.

2.1.2 Embodied experience of social awkwardness

In this section, we would like to discuss how social awkwardness is tied to embodiment, borrowing from phenomenological literature, addressing gaps, and where this study stands.

Embodiment refers to our presence in the world, whether it be physical or digital. It refers to the sensations of being inside, and owning a body and denotes meaning making, enabling individuals to find meaning in the world. These sensations are culturally and socially tied and affect our interaction with other people. One major scholar in embodiment studies is anthropologist E. Goffman, who in his book *Interaction Rituals* (1967), argued that the body is central to human interaction through, for example, glances, gestures, and verbal statements. More recent scholarship similarly underlines that embodied interpretations are shaped by norms set by cultural and social norms (Clegg, 2012; Plakias, 2024; Wang, 2025). While Goffman's research is fascinating, unfortunately, this study cannot cover the scope of it, but what we can gather are his main ideas on embodiment and social interaction.

Embodiment has not been linked to social awkwardness to any great extent in literature; however, studies on embodied shame, embarrassment, and social interaction, themes that link to social awkwardness, are plentiful. One such example is Fitzpatrick & Watson's (2003) study on the lived experience of physical awkwardness. Of particular interest are the feelings and meanings assigned to physical awkwardness using phenomenology by attending to how things (feelings, situations) appear and how they reveal themselves. This leads us to the importance of self-consciousness and feelings when discussing embodiment and awkwardness. As defined by scholars on awkwardness, such as Berkers et al., (2025) and Plakias (2024), emotions and feelings are a major part of it. Vani et al. (2019) support this in their study on body-related embarrassment, which, similarly to social awkwardness, leads to heightened self-consciousness, affective states (such as fear), cognitive (avoidance), and behavioral (changing appearance) changes. Considering that embarrassment cannot be separated from social awkwardness as described by Plakias (2024), in order to describe the entire body-related experience, we cannot put aside feelings and emotions in relation to embodiment (Vani et al., 2019).

Considering the gaps in the literature on the embodied experiences of social awkwardness, it is of interest to ponder how social awkwardness can be portrayed, particularly through a medium that can support embodied states of a lived experience. We turn to virtual reality, which can do just that with the multimodal advantages provided by the medium. Discussion on how we can use VR in studying social phenomena, such as social awkwardness, with the potential of these advantages will follow.

2.1.3 Social awkwardness and VR

Social awkwardness in VR has been studied from the perspective of controlled therapy studies and from social VR perspectives in understanding social interaction and behavior. Both present gaps about representations of social phenomena.

Virtual reality offers unique conditions for studying social interaction through its ability to transcend physical space and location (Han & Bailenson, 2024; Mathysen & Glorieux, 2021; Maples-Keller, 2017). This project specifically investigates how VR enables new forms of social interaction and behavior in controlled environments, focusing on applications in anthropology while referencing insights from education and psychology, but not therapy. While therapy-based

VR research is substantial, our core claim is that such work does not fully address the full realm of social awkwardness as a social, cultural, and embodied phenomenon. Instead, we argue that the study of embodiment in VR can more effectively emphasize how individuals experience and navigate social interactions, particularly in digital spaces (Guy, et. al., 2023). Building on this, our central argument is that understanding VR's impact on social interaction requires moving beyond therapeutic uses to examine social VR. Social VR, defined as the sense of social and self-presence in virtual spaces (Pan & Hamilton, 2018), allows for the replication and observation of social behaviors in environments not bound by physical constraints. Major studies (Smith & Neff, 2018; Liang, 2021; Son et al., 2025) demonstrate how VR supports social presence and embodiment. However, we contend that key questions about the relationship between embodiment and social behavior remain unsettled. While some research connects embodied avatars to more effective communication, others challenge the importance of embodiment relative to factors like spatial presence (Son et al., 2025). In this research, we aim to further contribute to this gap and now discuss embodiment in VR in more detail.

2.1.4 VR and embodied experience

In virtual reality, one's body can be substituted with a virtual one (Guy, et. al., 2023), resulting in a sense of embodiment experienced through a virtual self or avatar. The sense of embodiment, the subjective experience of "having" a body, serves as a crucial component in VR, producing behavioral and perceptual effects that shape how users navigate these environments (Freeman & Acena, 2022; Blanke & Metzinger, 2009; Guy, et. al., 2023). Here, embodiment refers to having sensorial experiences inside the virtual body similar to those in a biological one (Kiltene, et. al., 2012), and this experience can be enhanced through multimodal stimuli.

Kiltene et al. (2012) are widely known for introducing and identifying the three core subcomponents of the Sense of Embodiment (SoE) in VR: (1) Self-location, the perceived spatial location of the self, which may diverge from the biological body, such as in out-of-body experiences. (2) Sense of agency, the feeling of being in control of one's actions and their consequences within the virtual environment. (3) Sense of body ownership, the passive, often unconscious, feeling that the virtual body or body part is part of oneself. The level of involvement, or immersiveness, is also enhanced through communication modalities in VR, both non-verbal (body language) and verbal (voice), heightening the agency of the user. By embodying the virtual body, they are not only transported to the virtual space but their interactions with it are influenced by their offline history, background, and sociocultural experiences (Freeman & Acena, 2022).

Through overlapping and combining multimodal stimuli, namely *visual*, *audio*, *haptic*, or *proprioceptive* manipulation and feedback the embodied components above can be enhanced (Martin et. al., 2022, Maples-Keller et al., 2017). As suggested in research, each of these multimodal dimensions offers a more embodied and coherent experience through having a feeling of being in control of oneself, namely the three subcomponents reported by Kiltene (2012), ultimately leading to a more realistic sense of presence in VR. These mediated sensory and embodied experiences, however, are not only crucial for VR design and user engagement but also reflect anthropological and multimodal concerns. By integrating and synchronizing the multiple modalities, VR not only reinforces embodied states, through presence, and agency (Kiltene et al., 2012) but also enables ethnographic insight into how lived experience is organized across sensory, spatial, temporal, and material dimensions (Butilă et al., 2024). In this way, immersive VR serves as both a research tool and an analytic framework for exploring the social, cognitive, and emotional

facets of human experience while linking sensory embodiment to anthropological multimodal understanding.

2.2 Anthropological research

Anthropology studies humanity from a holistic perspective, in the biological, cultural and social dimensions of life (Butilă et al., 2024). Due to technological advancements together with societal changes such as COVID-19, virtual interactions in life became more prevalent (Butilă et al., 2024; Ceuterick & Ingraham, 2020). One type of such virtual interaction includes virtual reality. Using VR in an anthropological context presents the chance to approach a cultural system or a biological feature in a more profound way, which could potentially help researchers have a clearer picture of the phenomena or artefact they research (Butilă et al., 2024). Some works like *Clouds over Sidra* (2015) and *Out of Exile* (2017), for example intend to shine a light on the lived experiences of marginalized communities by introducing the audience to the shoes of their subjects, with the aim of creating empathetic accounts from the subjective perspective. It is of interest how VR as a medium can, through a “show-don’t-tell” approach, perform forms of anthropological inquiry that are more “evocative”, or in other words, more focused on the emotional and lived experience of a socially situated subject (Ceuterick & Ingraham, 2020). In the following sections, we will discuss the gaps in the literature concerning multimodality for anthropology and virtual reality and the critique of anthropological uses of the medium.

2.2.1 Multimodality in anthropology

While ethnography is not of main interest in this research, it is important to relate it to multimodal anthropology as well. Ethnography as anthropology’s core methodological practice is both a mode of inquiry and a form of intervention. It is distinguished into three categories: doing ethnography, adopting an ethnographic perspective, and using ethnographic tools (Green & Bloome, 1998, in Dicks et al., 2011). For this study, especially the last one, is of interest, utilizing ethnographical tools in the process, but not necessarily creating a comprehensive ethnography.

Some key findings of multimodal anthropology are established by scholars such as MacDougall (2005), Atkinson et al. (2008), Dicks et al. (2011), and Pink (2006) & (2011). Atkinson et al. (2008) argue that ethnography analyzes social and cultural life across multiple modalities, this recognition of lived complexity is not identical to multimodality. While ethnography emphasizes the social orders through which practices are organized and experienced, multimodality focuses more closely on the modes of meaning through which communication and representation are realized (Atkinson et al., 2008). In other words, ethnography situates practices in cultural and relational contexts, whereas multimodality dissects the semiotic resources, such as gesture, gaze, image, sound, and material artefacts, that make those practices meaningful (MacDougall, 2005). Scholar perspectives differ on how far the two approaches should be integrated. Kress and van Leeuwen (2005, mentioned in Dicks et al., 2011) describe multimodality as a theoretical toolkit for pointing out sign-making, but it does not itself provide a framework for understanding social evidence, like ethnography. Pink (2011), on the other hand, sees multimodality and “classic/observational” ethnography as grounded in different theoretical premises completely, her view of ethnography conflicting with the separation of modes, media, data, and the researcher in multimodality. Still, others like Rowsell (2013) suggest that combining them facilitates a more personal way of understanding multimodal practices by embedding them in situated ethnographic accounts of identity and experience (Dicks et. al., 2011). Westmoreland

(2020) pushes the conversation even further by applying multimodality into broader disciplinary reconfiguration, seeing it as a means to remake anthropology itself in epistemological, institutional, and political terms. Multimodality adds analytic precision to ethnography by reorienting the anthropological discipline and expanding understanding beyond textual and visual markers to employ sensory, material, and technological practices. Rather than simply complementing ethnographic perspectives, multimodality experiments with knowledge production, challenging both the infrastructures of anthropology and the forms through which ethnographic knowledge is produced and shared.

To come back to VR, we aim to position this medium as one such multimodal practice through which lived, embodied, and socially situated experiences can be reconfigured and rendered through a layered analysis of meaning-making and reimagining of ethnographic intervention. While not explicitly mentioned by all scholars in the previous paragraph, it is mentioned by Pink (2011) as a visual culture that captures the senses. While Pink (2011) does not describe the medium beyond visual practice, scholars have described its multimodality (Butilă et al., 2024; Martin et. al., 2022). Another particular key factor of VR is that while film and photographs, and other traditional visual culture places viewers outside the action to observe, VR places them *within* it, blurring the lines between observer and participant (Dulin, 2022). VR lets you *construct* and *manipulate* multimodal, embodied states. This creates a fascinating relationship between the audiences, offering a direct interaction with sensory experiences. As an immersive and multisensory medium, it is particularly suited for this approach in ways that align phenomenological view of studying human experience.

2.2.2 VR and Multimodality

Now that multimodality and its relation to virtual reality have been established, we can also discuss some core examples of anthropological interventions using virtual reality as a medium.

Some fascinating examples of anthropological inquiry using VR include *Out of Exile* (Peña, 2017) on the topic of LGBT+ youth, *Clouds over Sidra* (Arora and Milk, 2015) a VR film on Syrian refugees, and most recently *My People, Our Stories* (Al Jazeera, 2019) on homelessness in the United States and *Through the Wardrobe* (Eagle, 2020) which used AR to invite audiences to try on clothes in a store and hear the stories behind their wearers. Apart from Eagle (2020)'s approach, each of these VR films has aimed to communicate an empathetic perspective to the lives of others using the potential of the anthropological “pedagogy” offered by immersion (Dulin, 2022, p.118). Immersion is what gives anthropologists the kind of knowledge and authority that comes from actually being present and involved in the field (Costa, et. al., 2022). The potential of the level of immersion VR provides can offer ethnographical work that strikes a balance between “proximity and distance” (Dulin, 2022).

While this mediation between proximity and distance in VR is often praised for its empathetic potential, such experiences can instead flatten complex subjectivities, as criticized extensively by scholars such as Nakamura (2020). As such, we must also acknowledge the criticism that the medium has faced. Virtual reality has been met with criticism in fostering empathy and addressing social issues, rather than solving problems (Nakamura, 2020). Nakamura (2020) criticizes the use of VR as an “ultimate empathy machine”, particularly used in documentary formats that engage, mostly a white audience, to feel empathetic to the suffering of marginalized groups, setting an example of the work of Dulin (2022). While virtual reality can offer an embodied, immersive experience and a balance between “proximity and distance” that can offer “good ethnography” according to Dulin (2022, p. 118), it cannot ever be a truly shared experience. This perspective

does not consider that when the experience ends, the informants will go on with their lives and thus will not bear or be left with any consequences or effects on their “real” physical bodies.

Considering this critique, it is important to emphasize that the direction of this research lies in phenomenology rather than empathetic approaches. Phenomenology offers a framework for examining these embodied experiences more closely. In psychological science, phenomenology is understood as the study of lived, subjective experience as it appears to consciousness (Boden & Eatough, 2014; Fitzpatrick & Watkinson, 2003). Immersive technologies have demonstrated potential as anthropological tools, for example, in Eagle’s (2020) *Through the Wardrobe*, where augmented reality was used to create emplaced, multisensory encounters that reconfigure how media and objects are engaged within ethnographic practice. Rather than aiming to generate empathy in the audience, Eagle’s work highlights how immersive media can realign anthropology towards the lived and embodied dimensions of phenomenological, felt experience, situating them within material and visual culture. This provides a useful precedent for the present study: the goal is not to evoke empathetic identification but to create an anthropological record of embodied social awkwardness, attending to its physical, emotional, cognitive, and social dimensions, and see how virtual reality can achieve this as the medium. In this way, phenomenology offers a more concise framework than empathetic approaches, as it foregrounds how such experiences are lived and sensed from within, rather than how they are imagined from outside.

3. Research Statement

This research aims to contribute to the technological advancements already being established in multimodal anthropology. While some research exists on social awkwardness and embodiment, less attention has been given to how these experiences can be represented and explored through immersive digital media. The focus of this study lies then in an exploratory approach to VR, investigating how VR might be used to convey and analyze embodied social awkwardness in its physical, emotional, cognitive, and social dimensions. By combining a practice-based method with an academic framework, this research seeks to answer the following research questions:

RQ1: Can a multimodal approach such as virtual reality be used to convey phenomenological embodied experiences of social awkwardness?

RQ2: What can this bring to multimodal anthropology and its methodological advancement?

4. Gathering and informing of experiences

This research follows a qualitative method combining an academic framework, expanded photovoice methodology, and elicitation interviews, leading to practice-based anthropological intervention in the form of a VR experience. Particularly interested in a representation that is not simply an empathetic view but one that also can be experienced on your own, we employ a phenomenological approach. This approach attempts to describe and interpret an experience or phenomenon as it happens, in understanding and conveying the embodied state of social awkwardness. How this is realized is discussed in the chapter ahead as we provide a detailed description of the expanded photovoice methodology and elicitation interviews, informant gathering, data interpretation, and thematic and narrative analysis of the data.

4.1 Informant gathering

Considering the anthropological nature of the research, it was deemed important to bring informants to record their experiences of social awkwardness. These experiences would be used as a basis to create the VR environment to represent social awkwardness that is as close to the subjective perspective as possible. The informants chosen were individuals who had expressed having some sort of experiences with social awkwardness or had resonated with the topic and showed interest in sharing their views on it. The informants were all young adults, aged between 23-28 years old, the limited range of the age of informants stemming from ease of access due to the age and sociocultural background of the researcher. A convenience sampling strategy was employed, whereby informants and users were recruited through existing social ties at work, school, and within friendship circles. Snowballing sampling was also utilized in one case where an informant knew another person who would suit the research. While these approaches provided some room for openness during data collection, they also limited the diversity of the informant group. While this may impact the generalizability of findings across different age cohorts or life stages, nonetheless, focusing on young adults provided depth in exploring how social awkwardness manifests within this demographic, particularly given the digital means of interpersonal interaction and self-expression that this age group particularly uses (Dicks, et. al., 2011).

6 informants were recruited for this project. The number of informants helped to ensure more time dedicated to the encoding and application of the informant's stories while ensuring there is enough variety within the documentation and interviews. Considering the personal nature of the research, all informants were briefed about the project appropriately before participation.

4.2 Experience collection methods

This study adopts a practice-led approach as described by Candy and Edmonds (2018), taking some inspiration from phenomenological research such as Fitzpatrick and Watson (2003), Clegg (2012), and Eagle (2020). In order to gather subjective experiences of social awkwardness, methods were needed that could access these dynamics of body and relations beyond what informants can consciously verbalize. Considering the multimodal dimensions that VR offers, participatory digital and visual methodologies of qualitative and multimodal nature were also crucial (Gubrium & Harper, 2013). As such, to uncover the embodied, social, and cultural dimensions of social awkwardness from a multimodal perspective, this study used photovoice methodology and elicitation interviews to gather subjective experiences from informants (Budig & Conde, 2018; Gubrium & Harper, 2013). These methods were particularly suited for the study of awkwardness because they foreground the nonverbal, sensory, and spatial aspects of informant experiences, dimensions that are often flattened in purely text, survey-based, or simple interview approaches.

4.2.1 Photovoice

Visual methods enrich the data by revealing deeper meanings and offering insights beyond what verbal or written accounts may capture (Glaw et al. 2017). Photovoice, introduced by Gubrium and Harper (2013), is a research methodology that emphasizes visual elicitation by taking photographs. It is particularly used for capturing embodied and lived experiences of individuals (Budig et al., 2018). Following Gunn et al. (2013), this research aims to destabilize researcher-driven narratives by foregrounding the perspective of the informant. Using the photovoice

methodology encourages informant empowerment and communicating lived experiences through visuals captured and chosen by informants themselves (Budig et al. 2018; Switzer & Flicker, 2021).

This research adapted traditional photovoice through an expanded photovoice and photo elicitation methodology (adapted from Gubrium and Harper, 2013; Ritondo et al., 2024). While traditional photovoice focuses on photography, an expanded photovoice methodology was deemed appropriate considering an approach that accommodates comfort, safety, and expressive preferences of informants with various artistic qualities and output. This essentially means that informants were instructed to use any artistic means they were most comfortable with, including photos, notes, or making drawings. The contributions of personal perspectives thus directly shape the interpretation and representation of social phenomena within the VR environment (Glaw et al., 2017). For two weeks, informants were instructed to document their experiences with social awkwardness when they appeared or right after it, as a form of phenomenological approach to the experiences. In case they were instructed to also use past experiences if the informant found them particularly noteworthy. The expanded photovoice method was concluded by an interview where visual elicitation was used to reflect on the documentation.

4.2.2 Elicitation interviews

Interviews were used to refer to the material provided by the informants and the kind of feelings, emotions, and sensorial experiences they evoke in the informants. This is closely related to the photovoice methodology that incorporates elicitation interviews (Harper, 2002; Mortensen & Questiaux, 2024). During this interview, which lasted approximately an hour, informants were invited and encouraged to reflect on what they felt, perceived, and remembered during their documentation. They were asked about their experiences with social awkwardness also in general, and how it affects their life. An interview guide (SHOWeD framework) adapted from Wang et al. (2004), as referenced by Gubrium and Harper (2013: 73) served as the foundation for the structure. The questionnaire can be accessed in the Supplement 9.1.

4.2.3 Transcription and coding

To transcribe the elicitation interviews, the aTrain, an open-source, offline transcription tool was used. All qualitative data, which includes informant-submitted documentation and interview transcripts, were coded using ATLAS.ti software. Each informant's documentation was labeled systematically to ensure traceability and clarity during the analysis. The documentation and transcripts were coded into categories such as “Hesitation,” “Expectations,” and “Being Judged,” which were then further categorized into a coding group such as “Time and Space.” A further discussion on the results follows.

4.3 Results of the photovoice documentation and interviews

A combined thematic and narrative analysis was conducted on the documentation and interviews submitted by informants. This analysis was illustrated by a visual analysis and thematic analysis of the elicitation interviews. Thematic analysis is one of the most widely used methods for analyzing qualitative data, offering a concise yet flexible framework for identifying, analyzing, and finding patterns within datasets, making this an ideal method for analyzing both the photovoice documentation and interviews (Budig et al., 2018; Glaw et al., 2017). Through employing photovoice documentation and elicitation interviews, the aim was to navigate embodied and personal perspectives of social awkwardness. The informants all engaged in a variety of photovoice documentation and took a different approach that suited their personality and capacities.

Creativity was an unexpected driving force: two informants engaged in only notetaking, one gathered photos from the internet to illustrate their notes, two informants sketched their experiences, and only one followed the traditional “photovoice” method by providing photos and notes accompanying their experiences. The themes that emerged include the following: 1. *Cultural and social norms*, 2. *Emotions and feelings*, 3. *Social interactions*, 4. *Time and space*, and 5. *Self and identity*. These findings inform a part of what this approach can bring to multimodal anthropology and its methodological advancement (RQ2). More discussion on the specificities of the emerged themes follows below.

4.3.1 Cultural and social norms

Cultural notions include expectations from their native culture and pauses, silences, or ambiguous social cues that occur during social interactions or miscommunications. Particularly, cultural expectations created awkward tensions between the other counterpart, often resulting in informants feeling awkward about the miscommunication or expectations and not meeting them. One informant expressed their childhood upbringing and native culture in navigating social norms and conformity: “We were educated ... in a way that we have to follow social norms.” However, the informant later clarified that culture was not the main cause of social awkwardness. Rather, native culture served as a basis on which informants navigated social interactions. Other informants showed similarities with their native cultures, reflecting on their upbringing and how culture shaped their perception of norms.

4.3.2 Emotions and feelings

Emotions and feelings were a guiding element in many socially awkward interactions. When feeling down, informants reflected a higher sensitivity to social awkwardness, as illustrated in the drawing made by an informant in Figure 2. The informant felt worried about being perceived by others due to not feeling well that day. Symptoms of depression, anxiety, worry, and sometimes even panic attacks influenced the mental image of the informants and thus made them more self-aware of their actions, bodily functions, interactions, and the space they occupied. Some informants described a heightened sense of their bodily functions, such as feeling their increasing heartbeat, eye twitching, sweating, and involuntary shaking of their hands. Embarrassment was another particularly mentioned feeling. Embarrassment took form through feelings of insecurity, from second-hand embarrassment to embarrassment about mishaps, such as unintentional mistakes or “overdoing” actions.

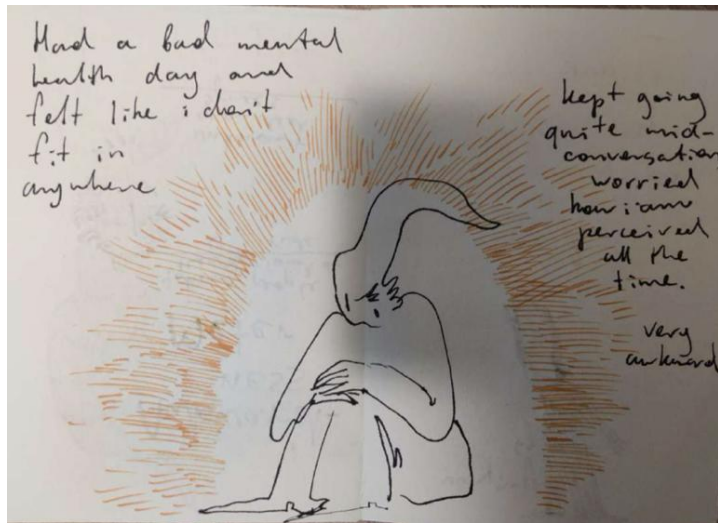


Figure 2. Drawn by informant.

4.3.3 Social interactions

Social interactions were a multifaceted process driven by challenges in communication, including unpredictable situations caused by cultural or social norms, miscommunication, sensitivity to the perceived reactions of peers, and having the freedom to choose when to engage in social interactions. Informants described feelings of uncertainty and frustration when not understanding or being understood. Miscommunication was particularly identified as a central catalyst in generating feelings of social awkwardness. In the accompanying interview of Figure 3, the informant reflected on the moment with discomfort, describing a heightened awareness of their physical presence and a sense of disconnection from the ease of normative interaction. Sensitivity to others can affect feelings of awkwardness, including how informants perceive the reactions of their peers. In contrast, another informant mentioned their need for the freedom to choose when and how to engage in social interaction as follows: “But, with a relationship ... the person says... I wanna call every day. I'm like, hell no!” This indicates how social discomfort can also arise from perceived obligations or expectations, emphasizing the need for autonomy in maintaining comfort and agency in different relations with other people.



Figure 3. Taken by informant.

4.3.4 Time and space

All the informants related their socially awkward experiences to situational examples, expressing detailed accounts of the event, including time, place, and other people present. Many participants provided details about the exact order of the events that unfolded, mentioning the feelings they associated with the events and the possible reactions of the other people in the scenarios. Specific places also heightened social awareness, with an emphasis on places associated with cultural and social expectations and authoritative figures, including jobs and schools. As one of the informants explicitly mentions, “When it comes to social awkwardness... the place where it becomes most apparent, for some reason, is always at work.” Another informant also mentioned, “...especially a setting that's a bit conservative, like in a church or at school.” When being at these places, informants felt heightened emotions, self-awareness of their position and others, and pressure from the expectations of their role.

4.3.5 Self and identity

Self and identity emerged as an additional theme to accompany the existing themes that came across in Berkers et al. (2025). Self and identity reflect the image of the self, illustrated by concerns such as being perceived, performativity, insecurities, confidence, and identity that informants feel connected to. The theme of “being perceived,” and particularly “performativity,” emerged as a central concern in informants' reflections on social awkwardness, highlighting a constant yet deeply internalized tension between self-image and external judgment. Rather than simply acting and engaging in social settings, informants described a heightened awareness of how they might be seen by others, often without knowing exactly how they were being seen. This uncertainty led to a form of self-monitoring rooted in both the desire to present a “mask” or a coherent, impressionable image to the world, with the fear of that image being disrupted or misunderstood. As one informant expressed, “I have no idea how people view me,” encapsulating the dissonance between intention and interpretation. When the performance that the informants were upkeeping “fails,” social awkwardness would follow. Similarly, insecurities about self-image also stemmed from not having “strong values,” as described by another informant. The informant described their awkwardness as “insecurity” rather than awkwardness, due to not having something they are “proud of.”

Social awkwardness, then, was not solely about overt social mistakes, but about the fragility of self-presentation in environments where perception feels inescapable, such as crowded parties or unfamiliar group settings. This tension was especially evident when informants felt their self-image was threatened, for example, by not behaving “appropriately” or by being emotionally off-balance. Figure 2 encapsulates the embodied feeling of being off-balance, which impacted the informant’s worry about being judged. Figure 3, on the other hand, describes the informant’s shame about not looking “excited” enough to other people when they receive something that they should be appropriately reacting to, such as receiving gifts or getting tattoos. In the interview, they further described feeling perceived as “unserious” to others in relation to this. Ultimately, the informants’ descriptions suggest that being perceived is not just a social reality but something that affects their self and cognition, shaping how they navigate world.

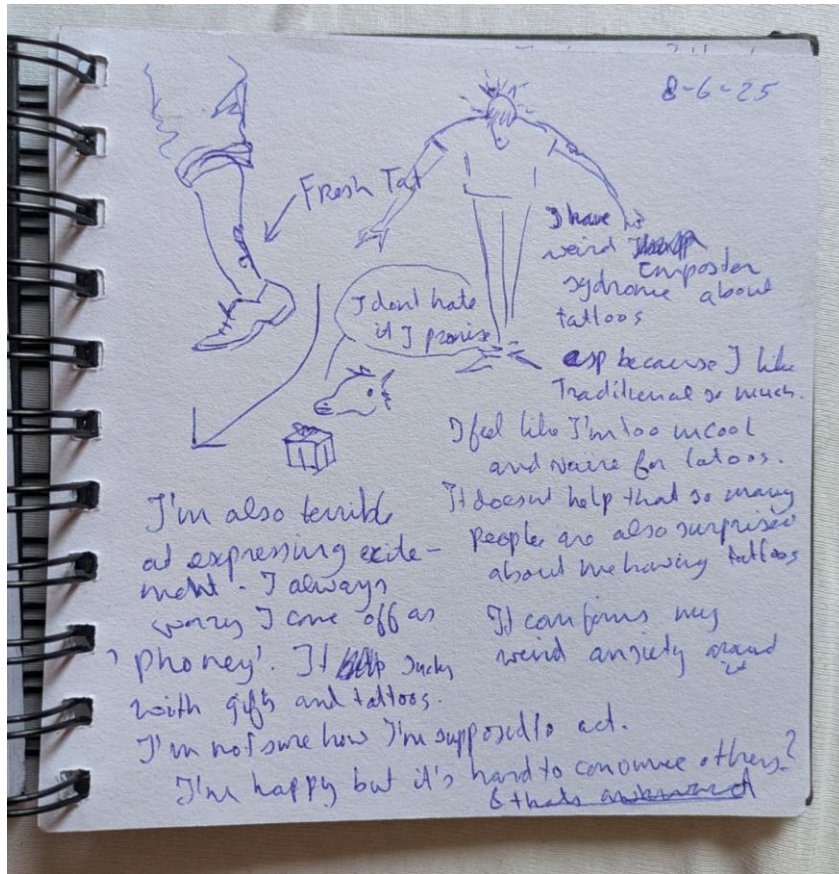


Figure 3. Drawn and handed in by informant.

4.4 Summary of findings and moving towards VR

Thus, it can be summarized that the findings of the photovoice documentation and elicitation interviews suggest that informants felt social awkwardness was situationally tied, stemming from social interactions that were driven by (mis)interpreting cultural and social norms. Changing personal circumstances, such as emotions, well-being, and identity, resulted in the image they were performing breaking. When the performance was broken, informants felt heightened perceptions of their own feelings and self-image, time, space, and sensitivity to the emotions of the counterpart. These findings suggest a strong relation to the awkwardness described by Plakias (2024), Clegg (2012), and Berkers et al. (2025).

Commenting on the virtual reality perspective, informants felt it was crucial to be able to perceive and be judged by other individuals for an experience that feels more authentic and awkward in a social context. Informants also emphasized simulating physical reactions, such as shaking or having an increasing heart rate. One informant also envisioned a gelatin-like, unstable environment with various corridors and pillars, symbolizing uncertainty and balance.

5 Designing the VR implementation

In this chapter we discuss the design of the VR experience that stems from the experiences provided by the informant documentation.

5.1 Insights and reflection from photovoice documentation and interviews

The thematic analysis from the previous section summarizes the findings and analysis of the themes that emerged from the documentation and interviews. The five themes, (1) Cultural and social norms, (2) Emotions and feelings, (3) Social interactions, (4) Time and space, and (5) Self and identity were integrated into the experience. Driven by documentation provided by the informants in their various formats, their experiences were to be translated into different multimodal elements. For the structure of the VR experience, it was also necessary to have a “scenario” to be followed like a story. As came across in the informants’ documentation: socially awkward experiences are situationally tied. For this, a few examples of the stories were chosen to be “experienced” in the VR project. In the end, only one key story was implemented fully, with other stories supporting the main narrative.

The story that was chosen as the main experience involved an awkward encounter that occurred while ordering bubble tea, as described by one of the informants. They felt pressured by the perceived social expectation of efficiency, specifically, the fear of “holding up the line”, which took form from cultural expectations of conformity but also from feelings of social awkwardness. Reflecting on the pressure of choosing an order and not having interacted with anyone for a certain period resulted in them mispronouncing their drink order in a way that unintentionally resembled the name of an awkward body part. This led to an exchange in which the informant became acutely self-conscious, particularly regarding their body and voice. In the interview, the informant reflected on feeling an intense self-awareness of the social awkwardness and on their bodily responses, including a rapid heartbeat and shaking hands. This experience was chosen due to its ability to summarize all the themes that emerged in the participants’ responses. Other stories were included in the scenario as side material and introductory visual material before the participant engaged in the main storyline.

5.2 Theoretical grounding for the design

The design was based on the findings discussed in Section 4.3. After identifying key themes, the next phase involved translating these abstract experiences into design elements that could be implemented in the VR environment. Considering the overlapping and combination of multimodal stimuli, namely visual, audio, haptic, or proprioceptive manipulation and feedback, the embodied components in VR can be enhanced (Martin et al., 2022; Maples-Keller et al., 2017). The visual dimension can be altered through the viewpoint, color, or brightness of lights. Audio can be manipulated through spatial audio, sound cues, or ambient soundscapes. These two modalities can be combined for a more coherent experience by adding audio feedback to interactions with visual elements (Martin et al., 2022). Similarly, haptic feedback provides a sense of touch through interaction with virtual objects, helping to reinforce spatial awareness. Vibrations and wearable devices can also simulate pressure on the physical body. On the other hand, proprioceptive input can be “altered by modifying the virtual avatar (i.e., distorting the position or length of the virtual arms and hands) while retaining body ownership” (Martin et al., 2022, p. 15). Each of these multimodal dimensions offers a more embodied and coherent experience by fostering a feeling of being in control of oneself, namely the three subcomponents reported by Kilteni (2012). These ultimately lead to a more realistic sense of presence in VR. The manipulations were combined with a similar approach used by Eagle (2020), which also fostered phenomenological embodied

experiences. It was crucial that users could engage with an interactive virtual environment that follows a narrative translating multimodal components such as audio, visual cues, bodily functions, and haptic feedback, as described by informants in the photovoice documentation. Rather than offering a singular, semiotically fixed interpretation, the space should invite users into a dialogue between the physical body, virtual object, and environment.

5.3 VR experience design and user interaction

The VR experience was built using Godot, a cross-platform game engine designed for creating 3D and interactive environments. Godot was selected due to its accessible interface and flexibility, making it particularly suitable for an iterative, research-led creative process. The decision to create a 3D interactive environment is due to the ability of 3D to foster an adaptive implementation and interaction as a part of a built environment as opposed to a static, non-interactive 360 video. Interaction plays a critical role in both the user experience and the methodological framing of the project, as it allows users to connect with the stories and materials of the informants in a participatory manner. This participatory dimension is further enhanced by multimodal elements that can be directly interacted with in the VR experience. These include visual elements such as a 3D model of a bubble tea shop populated with avatars for dialogue interactions, as well as objects that trigger voice narrations. All interactable objects, except for the informant drawings presented at the beginning, were sourced online. It is noteworthy to mention that the bubble tea model used in the VR space replicates the exact brand and tea documented by the informant. Interaction within the environment is partially guided by narration and story structure, though users also have the wander, experiment and engage, or awkwardly fail to engage, however they please. For example, dialogue with avatars is not tied directly to the main storyline.

When the experience begins, users are introduced to the VR controllers and headset. They can move around by physically turning or walking short distances, with all interaction initiated through the controllers. Headphones are used for full immersion. After familiarizing themselves with the controls and proprioception, users are invited to interact with an introductory text and an accompanying voice narration. This narration draws from the informants' interviews and documentation, explaining what social awkwardness means to them. Once the narration ends, users can explore the photovoice documentation, presented as posters, before proceeding to the main scenario. When users choose to enter the socially awkward scenario, they approach a bubble tea shop visible from a distance (Figure 4). The movement of the user is intentionally slow and slightly constrained to emphasize the perception of magnified time and space, as discussed in Section 4.3.4. The bubble tea shop itself was modeled to resemble a real store, featuring an order counter, a pick-up counter, and a waiting area with several interactable characters (Figure 5). The ordering of the bubble tea includes loud ambient sound mimicking a bubble tea store and multiple choices to pick from but only one that can be chosen on the main screen. As the user approaches the counter, an accelerating sound of a heartbeat can also be heard. When the user is done ordering, they will hear another voice narrative explaining the awkward story behind the scenario.



Figure 4. Far away café seen from the introduction site.



Figure 5. Order counter in the café.

When the voice narration is over the user is instructed to wait until their order is ready to be picked up. During this time, the user can walk around the space and interact with the other avatars in a dialogue. Entering a dialogue would require the user to approach the avatar, but the conversation quickly breaks off, as the avatar fails to respond, mimicking socially awkward interactions (Figure 6). When the order is finished, a voice asks the user to approach the pick-up counter. During picking up the order, the user has to reach far to grab the bubble tea. The user's hands are also shaking visibly, prior to the grabbing, reflecting the hand shaking experienced by the informant behind the story. When the bubble tea is grabbed, the user will hear the last voice narration that aims to guide the user out of the bubble tea store, ending the narration.

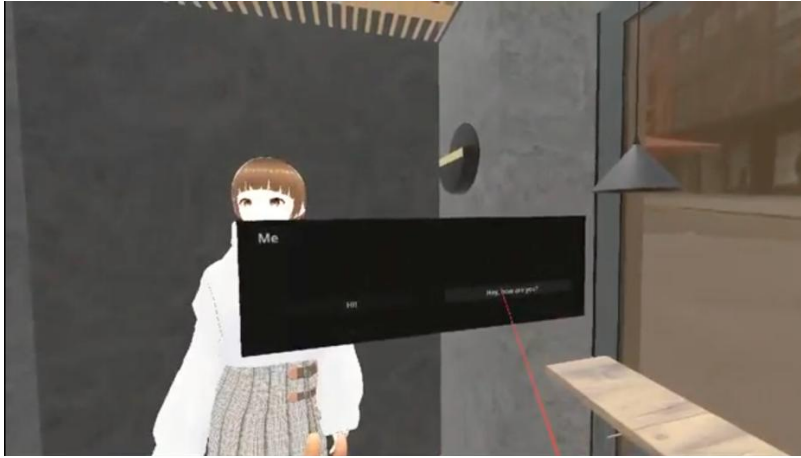


Figure 6. Avatar dialogue interaction. Options to interact are either “Hi!” or “Hey, how are you?”



Figure 7. Grabbing the drink after the order was completed.

Various multimodal elements were manipulated to support the representation of social awkwardness. Visual elements are fully interactive and respond directly to user actions, such as ordering or grabbing the bubble tea. The sense of awkwardness is conveyed through the perception of both self and others, particularly through the avatars’ implied observation of the user. Bodily functions, such as the simulated heartbeat and shaking hands, were incorporated to strengthen the user’s sense of body ownership, self-location, and agency, as proposed by Kilteni et al. (2012). The project was also framed as an anthropological intervention. The voice narrations which were generated entirely using offline text-to-speech software to protect the privacy of the informants, emphasizing the stories of real people who formed the foundation of the narrative. Sound played a dual role as both an atmospheric and narrative device. Ambient sounds, murmured conversations, heartbeat effects, and voice narrations that function as an “inner voice” were layered to evoke the heightened sensory awareness characteristic of awkward moments. Together, the sound design, visual elements, proprioception, and interactive feedback created an immersive sensory environment.

5.4 Challenges in VR development

Coding and analysis of the informant data proved to be more demanding than expected. Many of the stories shared during the elicitation interviews were highly personal, which complicated their implementation in the VR experience. As a researcher, it was necessary to handle this data with care and respect, maintaining an anthropological perspective. Additionally, due to technical limitations, haptic feedback (controller vibrations) could not be implemented.

In the following section, user feedback will guide improvements to the scenario described above and provide insights into how it was perceived by participants who do not necessarily have extensive experience with social awkwardness.

6 Reviewing experiences

In this section, the results are discussed, including user feedback and the final modifications made to the VR experience. The themes identified by Rubio-Tamayo et al. (2017), are highlighted as key elements for creating virtual experiences of an “appealing nature.” Accordingly, these dimensions serve as an analytical framework for evaluating and reflecting on the effectiveness of the approach taken in the design and development of the VR experience. The effectiveness of each theme collectively informs how a multimodal medium such as virtual reality can be used to convey phenomenological, embodied experiences of social awkwardness (RQ1) and what such an approach can contribute to multimodal anthropology and its methodological advancement (RQ2).

6.1 Reviewer gathering

After the creation of the VR experience, reviewers were invited to test the prototype. Around ten reviewers participated, and prior experience with social awkwardness was not required. Their external perspectives provided valuable feedback on how effectively the experience conveyed phenomenological and embodied aspects of social awkwardness across a range of experiences and expertise. In addition to feedback from external reviewers, some informants were also invited back to review the VR experience to reflect on how accurately and effectively their experiences had been implemented. All reviewers were briefed appropriately about the review process ahead of participation, with making sure to all of them about the potential discomfort they could face due to the nature of the research.

6.2 Operationalizing the evaluation framework: VR-assisted interview and questionnaire design

A semi-structured interview, or “VR-assisted interview” format, as described by Mathysen and Glorieux (2021), was used as the most suitable qualitative method for analyzing the effectiveness of the VR experience. First participants were instructed to openly interact with the experience, and give comments if they felt so. After completion, participants filled out a short questionnaire about their experience. The questionnaire created on the basis of existing frameworks for analyzing embodied interaction experience, and multimodal engagement in virtual environments introduced by Rubio-Tamayo et al. (2017), immersive. Four core aspects were evaluated: *gameplay/technical aspects, interactivity, narrative, and representation*.

In this study, the original HTC VIVE headset was used, providing full audio and visual feedback but limited haptic feedback. Consequently, proprioceptive and haptic manipulations were

minimal, and olfactory and gustatory feedback were absent. While technical aspects were not the primary focus of this research, gameplay was included as an evaluative dimension due to VR's technological nature. The gameplay was simplified to minimize technical complexity for users unfamiliar with VR technology. Research on the representation and expressive power of VR emphasizes the need to understand how this medium can communicate effectively (Rubio-Tamayo et al., 2017). On the other hand, interaction is the potential to “receive information from the ensemble of our senses and to construct and configure an alternate reality or to simulate reality” (Steuer 1992, mentioned in Rubio-Tamayo et al., 2017, p. 11). It is the potential to influence (in real time) in the digital environments; the objects and the narrative framed in it. Storytelling and narrative, as noted by Rubio-Tamayo et al. (2017), involve the account of the virtual environment and the user's ability to articulate and co-create the story through interaction with the virtual world. This encompasses the events included, the elements used to convey them, and the representational approach that is wanted to achieve. Representation in VR depends on multiple factors, including cognitive approaches to space and the ways users navigate and interact with elements within it. The complete questionnaire is available in Supplements 9.2.

Multimodal Dimensions (Rubio-Tamayo et. al. (2017))	Definition
Gameplay/technical aspects	The usability and intuitiveness of controls, navigation, and orientation within the VR environment.
Interactivity	The extent and responsiveness of the user's ability to interact with elements of the VR environment.
Narrative	The storyline and progression experienced by the user, with attention to clarity, coherence, and relevance to the theme of social awkwardness.
Representation	The degree to which the VR experience conveys embodied and subjective sensations of social awkwardness.

6.3 Results of the reviewer evaluation

In this section we discuss the results of the reviewer evaluations in detail, according to the 4 parameters: *gameplay/technical aspects*, *interactivity*, *narrative*, and *representation*.

6.3.1 Gameplay/Technical aspects

Gameplay and technical constraints were rated on their ease of use on a scale of 0 to 100. As indicated by the reviewers, the camera controllers were easy to use, with an average rating of 87 on a 0–100 scale for external reviewers and informant reviewers, exhibiting relatively low variation across participants for both. By comparison, the hand controls were evaluated less favorably, averaging around 61, and with a substantially higher standard deviation. During the experience, many struggled with remembering the functions of the buttons by using the wrong button or mistakenly pressing something they did not intend to press. In some cases, reviewers also had to restart the experience due to the functions' failures that were caused by the reviewer, such as accidentally pressing something and then missing a feature, or by technological failures.

Immersion was also measured on a Likert scale, the results seen on figure 9. Both groups experienced immersion, at least to a moderate amount. This suggests that immersion was generally strong, and participants felt engaged and present in the virtual environment. Considering these results, we can conclude that the environmental design of the experience was received quite well.

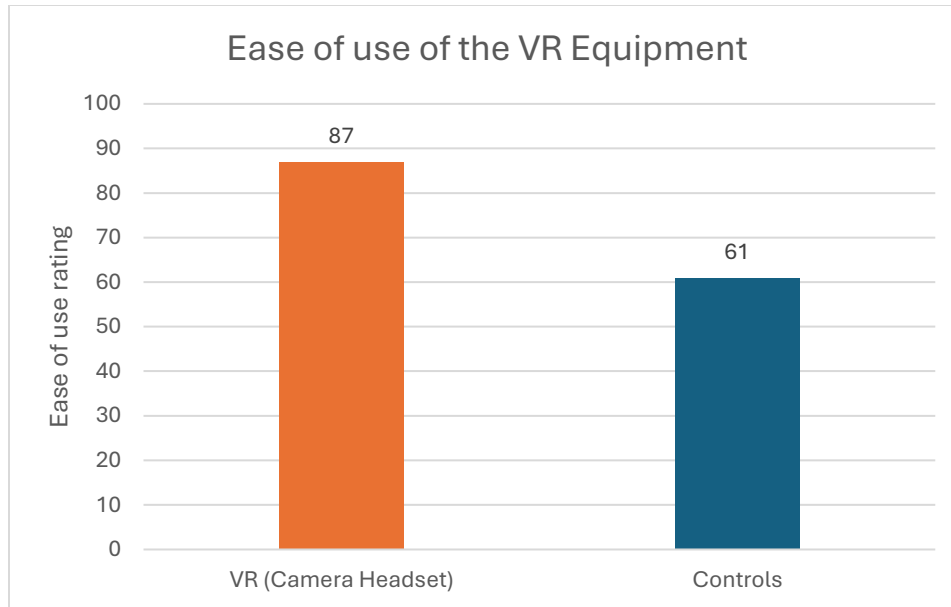


Figure 8. Results of the ease of equipment use for all reviewers.

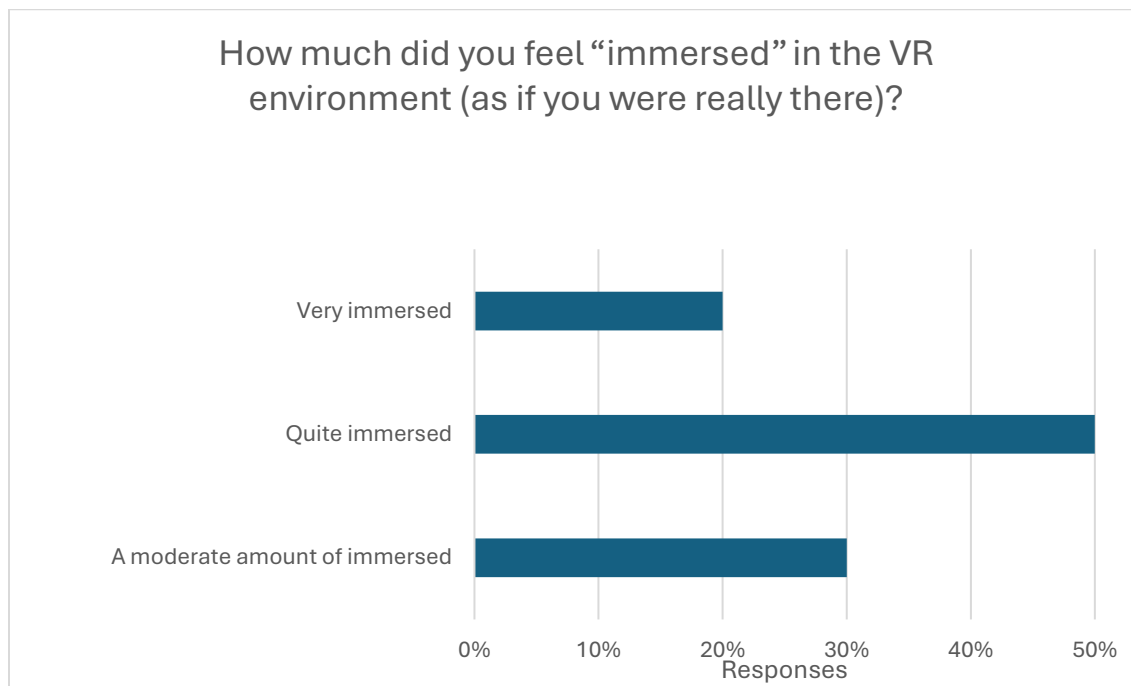


Figure 9. Felt immersion scale of all reviewers.

6.3.2 Interactivity

Interactivity was measured through naming the objects or elements in the VR experience that the reviewers interacted with, whether they were unsure what to do next, and what kind of physical responses, if any, they felt for themselves during the experience.

Interaction was met with various feedback. In the survey, the reviewers had no difficulty naming the objects to interact with and could reflect on the various visual elements, such as the bubble tea, text boxes, and avatars. Some reviewers also remembered the posters with informative drawings, as well as suggesting a relation with understanding the background behind the creation of the experience. However, both outside and informant reviewers were unsure of the steps to be taken after each interaction. Most external reviewers described moments of confusion or hesitation related to interaction design and task clarity, suggesting a need to include more hints and tips to guide the experience. Common themes included uncertainty about which controls to use (“I misremembered the controls”), unclear interaction cues (“I was not sure how I should order my drink”), and confusion after completing an action (“I wasn’t exactly sure if I just had to head out or not”). One participant noted accidentally re-ordering after dropping the drink, reflecting how minor technical misunderstandings could intensify the sense of awkwardness. Informant reviewers similarly mentioned uncertainty, but their descriptions were less about misunderstanding controls and more about navigating social or spatial norms within the virtual environment. For instance, they hesitated at the door (“I was trying to open it, when you need to just go through”) or were unsure about expected actions during waiting periods (“I wasn’t sure what to do while waiting... after the boba, wasn’t sure if I should leave or stay”). While observing the reviewers, some also missed the posters or other features, such as dialogue with one of the avatars in the café. While this was unavoidable due to the open environment design of the experience, this feedback indicates that more guidance is needed for improving the experience and making it accessible to a larger audience.

6.3.3 Narrative

For evaluating the narrative, the reviewers were asked to detail what the VR experience was about in their own words. The narrative of the work was received well but pointed out a crucial change to the outcome and interpretation of this research. There were no difficulties in understanding the narrative or the theme of the research, as both groups understood that the VR experience was a simulation of social awkwardness. However, their approaches differ significantly. External reviewers focused more on the structural design of the café interaction, the repeated ordering process, and its capacity to heighten feelings of embarrassment or discomfort. Informant reviewers, by contrast, mentioned the subjective and emotional dimension of awkwardness, directing the focus on their introspective responses and how awkwardness is felt daily as a regular phenomenon. Taken together, the responses suggest that while the VR environment did convey awkwardness well, participants interpreted it either as an externally structured situation or as an internally heightened emotional response. Considering the personal connection to the experience, it is expected of the informants to feel closer to the narrative.

These responses, while totally valid, bring forward a change to how we expected the reviewers to approach the VR experience. While both reviewers knew that the story was based on someone’s experience, their connection to the story was developed through their own anxieties and social awkwardness. Some reviewers approached the awkwardness with humor, perceiving it from avatars and moments of silence, while others felt awkward due to their own actions. These

varied interpretations enriched the experience, as each participant's phenomenologically embodied sense of awkwardness became integrated into the interpretive process of the work.

6.3.4 Representation

Considering the above response to the narrative, representation followed a similar pattern. The questions in this part of the evaluation reflected on how well the VR experience represents the reviewer's own socially awkward experiences, the bodily sensations of social awkwardness that the reviewer might experience, how well it might help feel what social awkwardness might be like for someone else, and how someone else might experience it in their body. These questions were slightly modified for the informants by directing the questions towards their documented experiences.

As experienced overall, most reviewers felt social awkwardness at an average of 3,60 on a Likert scale (figure 10). Considering this result, we can further peer into how social awkwardness was perceived and felt.

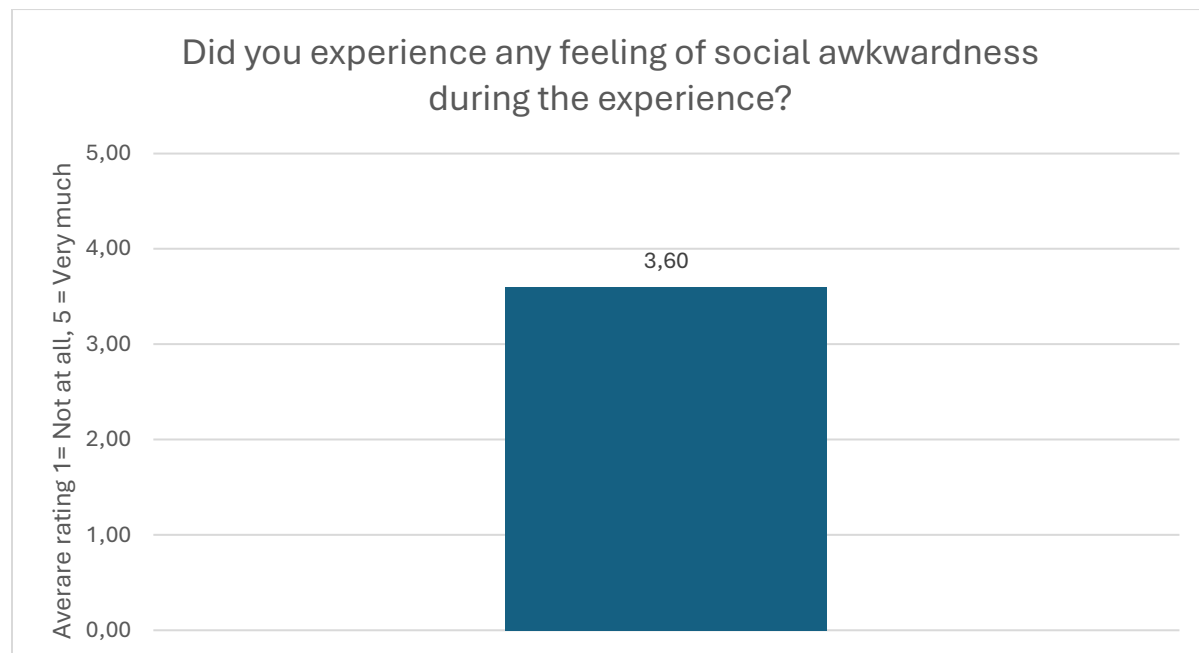


Figure 10. Rating of the experience of social awkwardness for both reviewers.

Figure 11 illustrates external reviewers who reported moderate agreement on how well the representation of social awkwardness was conveyed. Average ratings ranged from 3,29 to 3,86 on a 5-point scale across different aspects, including representing bodily sensations, helping understand someone else's experience, and reflecting their own feelings of awkwardness. Standard deviations were relatively high (0,83–1,39) as well, leaving some participants feeling the VR effectively simulated social awkwardness, while some were less convinced.

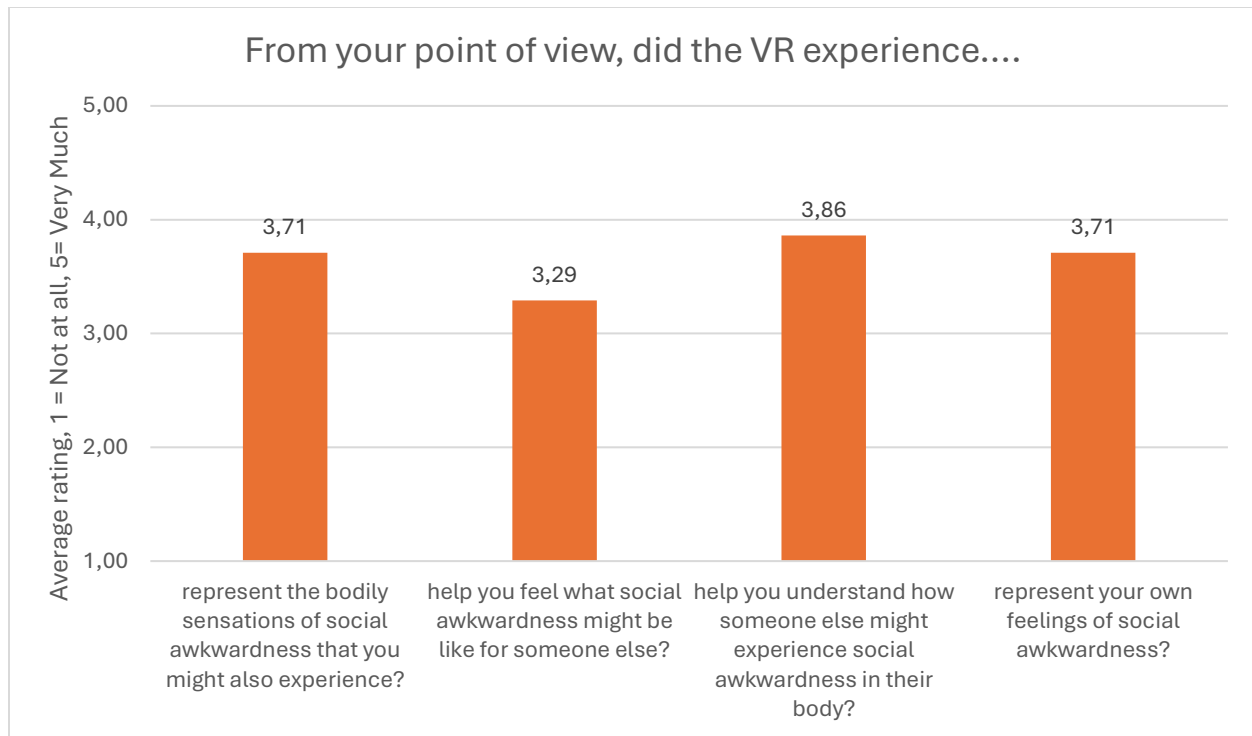


Figure 11. Scale of the representation of awkwardness, external reviewers.

Figure 12 illustrates informant reviewers' connection to representation. Informant reviewers reported higher and more consistent ratings across the same questions. They rated the experience between 4 and 5 on representing bodily sensations and consistently gave 5 out of 5 for understanding how someone else might experience social awkwardness. Ratings for representing their own feelings were slightly lower (average 3,67) but still indicated moderate agreement. Standard deviations were very low (0–0,94), showing strong consensus within this reviewer group. Considering representation, the findings indicate that the VR environment can convey social awkwardness, but participants' background or prior experiences may influence how strongly they relate to the work or feel connected to it.

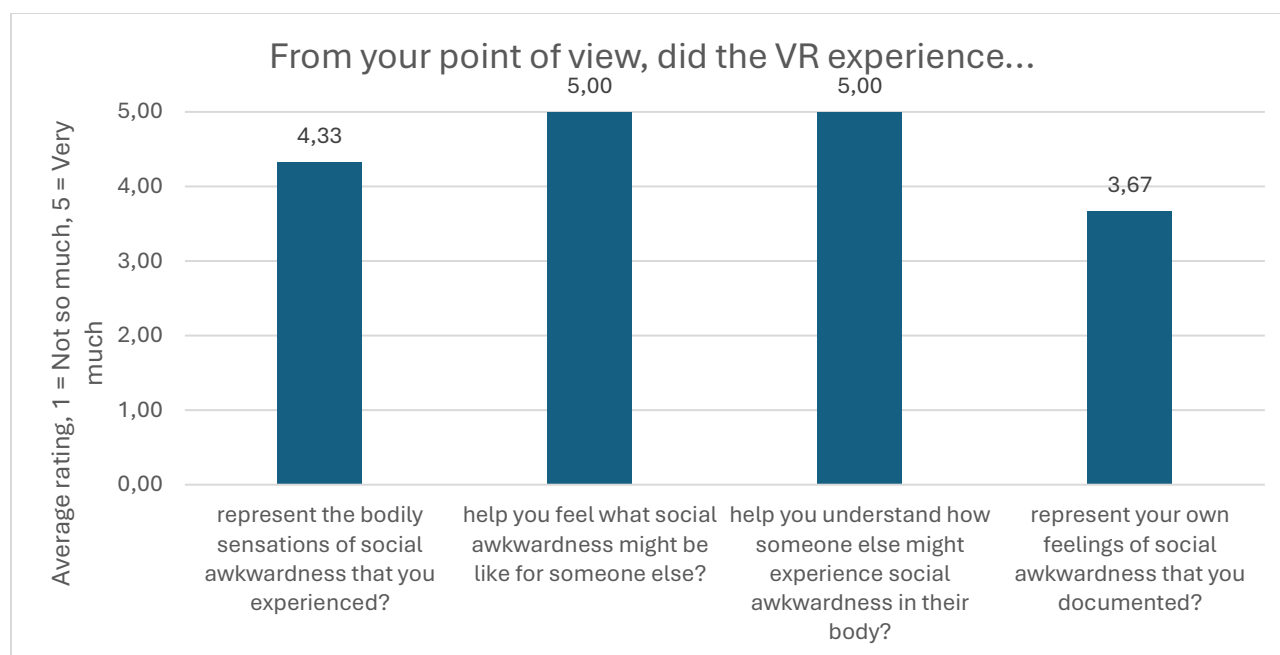


Figure 12. Scale of the representation of awkwardness, informant reviewers.

6.4 Summary of the feedback

Overall, both reviewer groups felt connected to experiences of social awkwardness, but from different standpoints. Discussions with reviewers during and after the experiences indicated personal relation to the experience of social awkwardness, not through the narrative but through their own interaction and actions during the experience. The experiences varied greatly. A fascinating addition to the experience was brought on through most reviewers dropping the bubble tea at the end. While not intentionally included as a feature, this interaction felt most relatable to social awkwardness for the participants, as the narratives were someone else's experience, while dropping the drink was their own. To a considerable extent, reviewers felt awkward between interactions, for example, standing in the hallway waiting for the drink or messing up the drink order and having to order again. While not exactly an expected result, each individual had a varied approach to the experience, ultimately contributing to the anthropological inquiry this study has aimed to reach.

7. Discussion and conclusion

This study explored the potential of using virtual reality (VR) to convey and represent social awkwardness. Based on the subjective perspectives provided by informants a VR experience was created utilizing the multimodal dimensions the medium offers. The curation and staging of the experience relate a sense of personal and subjective experience communicated through the physical experience of the user, a sense of non-verbal, non-visual, spatial knowledge that a cinematic film or written text cannot represent. Through the combination of visuals, sound, and proprioception and haptic manipulation facilitated by a VR headset and controllers, the medium offered a layered sensory experience. Similarly to how traditional visual and audible media can convey visual and auditory ethnographic knowledge, VR can communicate forms of bodily and spatial knowledge through physical engagement and immersive environments.

Multimodal anthropology seeks to advance an expanding array of tools, practices, and concepts to share understanding of human experience and how to attend to the diverse ways of knowing it. This research seeks to position itself within that aim. This approach aims to extend beyond observational or textual analysis through research contributed by scholars such as Plakias (2024), Clegg (2012), and Berkers et al. (2025) by using an expanded photovoice as a data gathering method that provided a phenomenological understanding of embodied social awkwardness. Informants documented their experiences as situational and relational, influenced by social expectations and relations, supporting the perspective of Plakias (2024). The social expectations were highly tied to social performance that resulted in self-consciousness, self-monitoring, and performativity, magnified by temporality and spatiality, similar to the findings of Berkers et al. (2025) and Clegg (2012). For a social phenomenon that is difficult to define and does not have clear boundaries, this approach proved both engaging and insightful.

Furthermore, this research extended the findings by emphasizing the role of immersive and interactive environments. The VR experience was created on the basis of this documentation as a virtual interactive 3D environment that comprised these subjective experiences in their emotionally driven form as they could be represented in VR. The installation created from this data was intended to simulate awkwardness through manipulation of multimodal stimuli, as described by Martin et al. (2022). The question, *“Can a multimodal approach such as virtual reality convey phenomenological, embodied experiences of social awkwardness?”* then depends on several factors. As a medium, VR allows fascinating tools to navigate and create representations of social awkwardness, yet some aspects are still lacking. While VR does offer significant potential for inquiry into social phenomena, it also risks oversimplifying complex emotional states. Reflected in literature as well, the use of VR in anthropology has been critiqued for fostering false empathy or being adopted uncritically as a novel tool. The findings of this study also support this notion that not all forms of knowledge translate seamlessly into immersive environments, especially subtle and ambiguous emotions. As such, someone else’s perspective, cannot be fully experienced least not yet. While the story behind the experience and the multimodal elements supporting are present, own interpretation and interaction are more relevant. The results of the feedback on the VR experience highlight that it is the user’s own interaction and emotional engagement that completes the phenomenological embodied experience. User interaction that resulted in bodily awareness and physical tensions from awkwardness felt by the reviewers arguably reflected the sense of embodiment (SoE), namely, body ownership, self-location, and sense of agency, described by Kilteni et al. (2012). Taken together, the findings contribute to and extend several theoretical perspectives on social awkwardness and embodiment, particularly from a digital immersive perspective. In doing so, the project connects theories of awkwardness with embodied interaction frameworks, showing how sensory manipulation and proprioceptive engagement can evoke the feeling of “being awkward.” The multimodal components of VR enabled the simulation of self-perception, temporal distortion, and bodily tension. We can then answer the first research question very briefly with: yes, VR can convey embodied experiences of social awkwardness, though not as straightforwardly as expected. When used critically and in combination with other multimodal methods rather than as a replacement, multimodal VR can offer valuable insights into anthropological ways of knowing.

This brings us to the second question: “What can this bring to multimodal anthropology and its methodological advancement?” This project contributes to ongoing discussions about how anthropologists can move beyond text, engaging affective and embodied dimensions through digital and sensorial media. It demonstrates the value of combining ethnographic research with

technological experimentation while maintaining a critical awareness of the tool's limitations. In doing so, the research supports the development of multimodal anthropology, one that embraces the complexity of subjective human experiences, formulating the many ways they can be shared.

7.1 Current outlook

Now we discuss, where does this research stand as of now? Where does it sit within the academic realm and how does it differ or contribute to existing immersive works such as *Clouds over Sidra* (Milk, Arora 2015), *My People, Our Stories* (Al Jazeera, 2019) or *Through the Wardrobe* (Eagle, 2020)? How this research adds to the existing immersive works is with the approach taken that bridges multiple disciplines. The research started as an investigation into how to navigate social awkwardness, investigating an alternative way to record that captures the lived and phenomenological experience, how it manifests itself. Through this effort, we have aimed to bridge a gap with multiple disciplines, contributing not only to multimodal anthropology but ultimately also to computer science, psychology and philosophy. Through engaging the senses and navigating the representation of phenomenological experiences by figuring ways to represent embodied states in an immersive environment, we have presented a bodily knowledge that differs from what traditional visual or text-based practices can offer. With this in mind, hopefully audiences feel more connected to their own social awkwardness and the embodied dimensions of it.

7.2 Limitations

Limitations of this research concern methodological, technical, and epistemological aspects that shaped both the process and the outcomes of this project. The methods taken during this research are highly specific to the convenience of certain conditions, such as the informants who took part and the reviewers. The small number of informants and their sociocultural backgrounds make it hard to generalize these findings. While the aim of this research was to provide subjective and situated experiences, this focus on individual perspectives also means that certain cultural, social, or contextual nuances of awkwardness may remain unexplored. Cultural context is relevant for reviewers as well, and their sociocultural backgrounds ground the interpretation of the VR experience as well. On the other hand, an issue of the reliability of the data collection method arises due to the informants having the freedom to pick and choose to share, offering a stylized version of their experiences. While the interview elicitation method tries to eliminate some forms of this stylization by directly assessing the feelings and context behind the documentation, the interview elicitation might also affect the data in the same way. Informants might share details that were not there or emphasize certain feelings or details due to participation bias, altering their responses.

Technical limitations in creating the VR experience itself also have some constraints, mainly due to the availability of the hardware, software, and the researcher's technical skills. Thus, some sensory dimensions, particularly haptic manipulation of the experience were lacking. Another important factor of the technological constraints is also enabled by accessibility of the hardware. This poses a larger issue with inclusivity and reproducibility of VR-based anthropological methods, highlighting the importance of perhaps offering alternatives or combining VR with other multimodal approaches.

7.3 Future work

The future brings forward many exciting research opportunities. More work should be developed in bridging the academic understanding of awkwardness with embodiment. Photovoice, among

many other methods, could bring new, fascinating insights to the lived experience of this social phenomenon. It would be of particular interest to also investigate the power relations, philosophical or technological tensions that manifest through and in social awkwardness. This opens doors for investigating other social phenomena as well, and what potential VR or other immersive environments could bring. More research is necessary, particularly on haptic proprioceptive or even olfactory stimuli, something that was not possible in this study.

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9. Supplements

9.1 Question framework for interviews for photovoice elicitation.

The original SHOWeD framework was rephrased to better align with the aims of this study;

- Can you tell me a little about yourself and your background?
- How does social awkwardness appear in your life?
- What happened during a socially awkward situation?
- Please describe the emotions and reactions you felt during that moment. What made it awkward for you?
- Are there certain spaces, situations, or people that tend to amplify this feeling?
- How do you imagine these awkward experiences could be recreated in a digital or VR environment?

9.2 VR User Experience Evaluation – External reviewer/Informant*

* Parts only mentioned in Informant survey are highlighted.

Q1 Have you had experiences with social awkwardness before?

- ☐ Definitely not (1)
 - ☐ Probably not (2)
 - ☐ Might or might not (3)
 - ☐ Probably yes (4)
 - ☐ Definitely yes (5)
-

Q2 Have you ever had experiences with VR before?

- ☐ Definitely not (1)
 - ☐ Probably not (2)
 - ☐ Might or might not (3)
 - ☐ Probably yes (4)
 - ☐ Definitely yes (5)
-

Q3 What is your expertise in anthropology?

- ☐ I have no background in anthropology (1)
- ☐ I have a basic interest / general knowledge (e.g., from media, casual reading) (3)
- ☐ I have taken some anthropology courses / workshops (4)
- ☐ I hold or am pursuing a degree in anthropology or related field (5)
- ☐ I have professional/research experience in anthropology (6)

Q4 Please use the slider to indicate the ease of use of the equipment in moving around the VR environment (0 not easy - 100 very easy)

Not Applicable

0 10 20 30 40 50 60 70 80 90 100

VR headset (Camera) ()	
Hand controls ()	

Q5 What objects or elements in the VR experience did you interact with? (please list them)

Q6 How much did you feel “immersed” in the VR environment (as if you were really there)?

- ☐ Not at all immersed (1)
- ☐ A little immersed (2)
- ☐ A moderate amount of immersed (3)
- ☐ Quite immersed (6)
- ☐ Very immersed (5)

Q7 Was there any moment where you felt unsure about what to do next? If yes, describe it.

Q8 Did you notice any physical or emotional reactions for yourself during the experience? (e.g., tension, discomfort, wanting to look away) Please describe it.

Q9 Please give overall feedback about your experience with the VR.

Q10 In your own words, what was the VR experience about?

Q11 Did you experience any feeling of social awkwardness during the experience?

- ☐ Not at all (2)
- ☐ A little (10)
- ☐ Somewhat (11)
- ☐ Quite a bit (12)
- ☐ Very much (13)

Q12 What parts of the VR Experience, if any, best reflected social awkwardness for you?

Q13 From your point of view, did the VR experience...

	Not at all (1)	Moderately (3)	Quite a bit (4)	Very much (5)
represent your own feelings of social awkwardness that you documented? (9)	☐	☐	☐	☐
represent the bodily sensations of social awkwardness that you experienced/that you might also experience? (10)	☐	☐	☐	☐
help you feel what social awkwardness might be like for someone else? (7)	☐	☐	☐	☐
help you understand how someone else might experience social awkwardness in their body? (8)	☐	☐	☐	☐

Q14 Do you have any suggestions or anything else to add?
