Using Goffman's Frameworks to Explain Presence and Reality

Ruth Rettie
Kingston University
RM.Rettie@Kingston.ac.uk

Abstract

This paper defines presence in terms of frames and involvement [1]. The value of this analysis of presence is demonstrated by applying it to several issues that have been raised about presence: residual awareness of non-mediation, imaginary presence, presence as categorical or continuum, and presence breaks.

The paper goes on to explore the relationship between presence and reality. Goffman introduced frames to try to answer the question, "Under what circumstances do we think things real?" Under frame analysis there are three different conditions under which things are considered unreal, these are explained and related to the experience of presence. Frame analysis is used to show why virtual environments are not usually considered to be part of reality, although the virtual spaces of phone interaction are considered real. The analysis also yields practical suggestions for extending presence within virtual environments.

Keywords--- **presence, frames, virtual environments, mobile phones, Goffman.**

1. Introduction

The conventional conceptualization of (tele)presence is 'being there' [2]. This creates a paradox because one cannot be in two places at once; to avoid this paradox the virtual environment is seen as unreal, however realistic the experience [3]. Goffman [1] recognized that different 'worlds' compete for our attention, and that there is a relationship between focus of attention and our experience of a world as 'real'. His frame analysis is designed to explain the circumstances in which we consider an environment real. Its application to virtual environments is useful in two ways: firstly, it helps to conceptualize the experience of presence in a virtual world, and secondly, it provides practical guidelines for increasing the perceived reality of virtual environments.

This paper extends Goffman's framework theory to presence, in two different ways. Firstly, presence is defined in terms of two concepts: frames and involvement. This analysis of presence is applied to the literature on presence, comparing it to other definitions and applying it to several contentious issues of presence.

The second part of this paper uses frame analysis to explore the relationship between presence and reality. Frame analysis attempts to explain why certain experiences are considered real and others are not. Two different contexts, virtual reality environments and phone interaction, are used to clarify the relationship between presence and reality.

2. Frameworks

Goffman [1, p. 21] introduces the concept of frames as follows: *"When an individual in our Western society recognizes a particular event, he tends, whatever else he does, to imply in this response (and in effect employ) one or more frameworks or schemata of interpretation ...[which] is seen as rendering what would otherwise be a meaningless aspect of the scene into something that is meaningful."* In other words, we use frames to interpret our experience. Frames answer the question, *"What is going on here?"* [p. 46]. Frames are socially shared and culture specific.

Frames organize experiences; they provide assumptions about what is going on. Frames are not mental objects, but concepts used to decipher what is happening around us, *"observers actively project their frames of reference on the world immediately around them"* [1, p. 39]. Frames provide contexts which enable our interpretation of events. The same section or 'strip' of experience can take different frames. For instance, something taken at first as a marriage ceremony may be reframed as a rehearsal. What is perceived to be 'going on' depends on the frame applied.

This analysis is related to Sheridan's view of a virtual environment as a *"mental model"* that represents a physical environment [4,5]. Lackner and Dizio [cited by Schuemie et al., 6] suggest that when people have difficulty forming a mental model of a space, they report a loss of a sense of presence. However, 'mental model' suggests a mental picture; frames are not additional mental entities but just the way that experience is conceptualized. Goffman's concept of frame was derived from the work of Bateson [7]. The concept is related to, but is less prescriptive than, Minsky's concept of frame [8] and Schank and Abelson's concept of script [9].

3. Presence

Presence is the phenomenological experience of being in a situation or environment, the sensation of *"being there"* [10, p. 3959]; telepresence is the experience of being somewhere other than where one physically is. Presence can be analyzed in terms of two concepts used by Goffman [1], involvement and frame: presence is engrossing involvement in a spatial frame. If presence is 'being there', involvement relates to 'being' and the frame explains what is meant by 'there', it defines the situation or environment. The term 'involvement' is not used in the sense of interest in the content of an experience, but to describe the allocation of attention. For example, the experience of presence in a theatrical performance means that one is focused on an experience that is framed as being a play. When someone is engrossed in a situation or experience they feel present; frames define the nature of this presence.

This does not mean that the frame is predominant, as one becomes more engrossed there is *less* awareness of the frame. However, the frame continues to define *how* the experience is interpreted, for instance, seeing a murder on stage one does not feel an obligation to call the police, as one might if the same experience is seen on the street. One may be present in the ordinary world, a daydream, an imaginary world, or a mediated experience, etc. The extent of involvement in the frame relates to the degree of presence experienced.

3.1. Presence as framed experience

Frames explain what is meant by 'being in' a mediated environment. The mediated environment may be framed as a space or a place. Through the use of a physical metaphor or frame, the virtual environment becomes a space where presence is experienced. The frame both constructs and makes sense of the experience. The frame provides the context, as Heeter notes, *"presence requires a context"* [11, p. 339]. Schroeder [12, p. 10] uses frames in his analysis of virtual environments , *"...VEs have a different kind of 'bandwidth' from real world frames for presenting the self to the other. When we enter a VE, a shift in the 'frame' takes place..."* In a shared virtual environment the frame is shared by the participants in the interaction.

Following Giddens [13] it is useful to distinguish places from spaces. Places are physical settings for social interaction, they contain social norms; we are located in space but we act in place. Places are spaces, but not all spaces are places. Electronic mediation enables interaction without being in the same physical place; mediated action and interaction occur in spaces, but not in places. Virtual reality environments may be framed as 'places' or 'spaces'. Participants in a phone call frame their interaction as occurring in a separate 'space', not a place. This helps to explain the common practice of holding private conversations in public places, the participants are 'on the phone', which is perceived as a private space. In a mediated environment, the frame allows one to feel as if one is 'there' and/or to feel as if one is 'meeting with' the other interactant(s). If the environment is framed as a space rather than a place, the paradox of being in two places at one time is avoided.

3.2. Presence as involvement

Involvement [1, p. 346] is a *"psychobiological process in which the subject becomes at least partly unaware of the direction of his feeling and his cognitive attention."* For Goffman attention or 'involvement' is shared between the ordinary world and 'aways' such as day dreams, hallucinations, self involvements [14, p. 243]. Involvement or attention is divided between these different 'involvements', resulting in different degrees of involvement in each 'realm'. Updating this theory, it is clear that mediated communication can engage our cognitive attention, reducing our presence in the immediate environment. Furthermore, attention is focused on the experience per se rather than on the *mediation* of the experience: *"Speaking to someone on the telephone, is so natural, that we almost forget about the intervening medium"* [15, p. 109].

"Engrossables" are experiences that are so involving that one can be *"caught up in or carried away by [them]"*,[1, p. 46]. This paper contends that this creates a feeling of presence in the environment; presence is engrossing involvement in a spatial frame. This is involvement in the framed experience as a whole, not on the contents of the frame, or in the frame itself. In fact, when one is 'carried away' by the experience the frame becomes *less* apparent Being involved in an experience means that a considerable share of mental awareness or attention is devoted to this experience, this does not imply a focus on the direction of attention. [1].

Involvement here is about allocation of attention to the experience as a whole, and is neither about involvement in some element of the experience nor about involvement *in* the framing concept. As Slater [17] points out, one can be present even if the content of an experience is uninteresting and un-involving. He comments that it is possible to listen to a quadraphonic sound system and feel present as in a theater before an orchestra, despite feeling uninvolved in the music played. Slater argues that what is relevant is the 'form' of the experience, not the content. Frame analysis suggests that form and content interact and are not independent: the content, or what is understood as 'going on', depends on the frame applied. Using Slater's example, if the music is not consistent with the frame of being in the theater, in front of an orchestra, the frame will break, consequently the illusion and the feeling of presence will be lost. In addition, if the music is so uninteresting that engrossment is lost and attention is reallocated to the physical environment, then the illusion, and the feeling of presence, will be lost. However, the experience as a whole, rather than the just the music, may be sufficiently absorbing to retain involvement, so that presence can be experienced despite boring music.

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[1] In the extreme case of flow [16] almost *all* attention is focused on a single frame.

In the frame analysis developed here, what is important is engrossment in the experience itself *and* the conceptualization of the experience within a spatial frame, as a coherent space. The 'form' of the experience is given by the nature of the frame used to conceptualize the experience. The involvement is in an experience framed as being in a theater; not in the music per se, *nor in the idea of being in the theater, but in the experience as a whole.*

The concepts of involvement and frame are related. Frames organize involvement; involvement is never total, it is restrained by *"a measure of cognitive reserve ...a wisp of doubt concerning framework"* [pp. 379-80]. Frames can break, because of sudden awareness of incoherence; the frame is no longer relevant to the experience, 'flooding out' occurs and there is an immediate loss of involvement in the frame. Conversely, 'flooding in' occurs when someone suddenly becomes involved in a frame, e.g. someone may become suddenly engrossed in a television program. The transfer of involvement between frames can also be a gradual shift of attention, and consequently of presence, between different worlds.

There is some empirical evidence of a relationship between the experience of presence and allocation of attention. Hoffman et al. [18, p. 1245] subjected research participants to moderate pain while exposing them to a virtual reality environment and found that *"the more attention drawn into virtual reality, ...the less pain patients experience."*. Attention to pain (measured by subjective reports of the time spent thinking about pain) was significantly reduced when participants were exposed to a virtual reality environment. Moreover, magnetic brain imaging showed a reduction of pain-related brain activity of over 50% during exposure to a virtual reality environment.

4. Presence as framed involvement

In this section the analysis of presence in terms of framed involvement is related to the literature on presence, comparing it to other definitions and applying it to contentious areas of presence. The concept of presence is ill defined, as Waterworth and Waterworth [19, abs.] comment, *"Progress in understanding presence is inhibited by the fact that we are unable to agree what it is we are talking about."*

4.1 Presence as non-mediation

Lombard and Ditton [20, para. 33] define presence as *"the perceptual illusion of nonmediation"*. This corresponds with deep involvement, one is so *"caught up in or carried away by"* the mediated environment that there is an illusion of non-mediation, i.e. loss of awareness of the 'mediation' frame.

Although this definition of presence is helpful in identifying the engrossment of presence, there are several problems with it. Firstly, it only applies to presence in mediated environments; this prevents its application to physical and imaginary environments. Secondly, the illusion of non-mediation either occurs or does not occur; this implies that presence is not a matter of degree. The

authors explain the subjective experience of degrees of presence in terms of the number of instants during which the illusion of nonmediation occurs. This suggests a perpetual mental assessment of which one is unaware, which is epistemologically problematic. A further problem with this definition is that even if the feeling of presence in the mediated environment is very strong, at some level one is aware of mediation and misperception.

This mental equivocacy is reflected in the definition, which was refined in the Presence-L Listserv [quoted by 6, p. 185]. *"Presence (a shortened version of the term "telepresence") is a psychological state or subjective perception in which even though part or all of an individual's current experience is generated by and/or filtered through human-made technology, part or all of the individual's perception fails to accurately acknowledge the role of the technology in the experience. Except in the most extreme cases, the individual can indicate correctly that s/he is using the technology, but at *some level* and to *some degree*, her/his perceptions overlook that knowledge and objects, events, entities, and environments are perceived as if the technology was not involved in the experience."*

There are two reasons for this residual awareness of non-mediation. Firstly, involvement is allocated between different realms; there is always some residual involvement with the physical body and with the physical world. Secondly, engrossment is never total, it is restrained by *"a measure of cognitive reserve ...a wisp of doubt concerning framework and transformations"* [1, p. 379-80]. This is because we are aware that the application of a frame is contingent, there is always the chance that the frame will no longer fit the experience. When this happens, involvement changes suddenly, there is a frame break, which results in a break in presence.

4.2 Elements of presence

Lombard and Ditton [20] review the literature and distinguish six related concepts of presence: realism; transportation; immersion; social richness; social actor within medium, medium as social actor. The last three relate more to social presence rather than locational presence [10], but the first three are key elements of presence: realism, is the extent to which the experience is realistic and like the real world, transportation is the sensation of being in a remote physical environment and immersion is the extent to which the senses are engaged in the mediated communication. Slater [21, p. 261] adds dominance, response and memory. *"The extent to which the VE becomes the dominant one i.e., that participants will tend to respond to events in the VE rather than in the 'real world'...The extent to which participants, after the VE experience, remember it as having visited a 'place' rather than just having seen images generated by a computer."* Draper, Kaber and Usher [22, p. 366] emphasize attention, *"The more attentional resources that a user devotes to stimuli presented by the displays, the greater the identification with the computer-mediated environment and the stronger the sense of telepresence."* Witmer and Singer

[23] also relate presence to attention allocation, dividing this into involvement (focus of attention) and immersion or engagement with the environment.

These elements can all be covered using the analysis of presence in terms of frame and involvement. If the virtual environment is framed as a place, this explains the feeling of transportation (movement to a different place), *located* memories and response to an environment. The remaining elements of presence, that is, immersion, engagement, dominant focus, and attention, are all aspects of involvement or engrossment. This indicates the robustness of the analysis of presence as framed involvement. The analysis can also be applied to several areas of interest in this field: the experience of presence in imaginary environments, presence as a continuum or categorical concept, and presence breaks.

4. 3. Presence in imaginary environments

Biocca [24, para. 6.1] claims that *"at one point in time, users can be said to feel as if they are physically present in only one of three places …: the physical environment, the virtual environment, or the imaginal environment. Presence oscillates among these three poles."* Heeter [11] and Blascovich [25] also refer to presence in imaginary environments. However, Slater [17], restricts presence to physical and virtual environments, arguing that, while we may be engaged or involved with imaginary worlds, this is not presence. Waterworth and Waterworth [19, para. 1.4], also dispute presence in imaginary environments, arguing that presence involves a focus on *external* stimuli, and that imaginary environments do not occur in real time.

Analysis of presence as involvement and frame extends the experience of presence to imaginary worlds; they are engrossing, and they deflect attention from the everyday world. However, although couched in terms of presence, the underlying issue here is the question of reality. Whether or not we choose to apply the word 'presence' to imaginary worlds, the question highlights two underlying distinctions: that between reality and fictitious realms, and that between shared and private worlds. This former is discussed in section 5, which discusses the relationship between presence and reality, and explains how we can feel present in realms that we do not consider to be real.

4.4. Presence as a Continuum

Draper, Kaber and Usher [22] claim that presence is a scale of varying intensity, but Biocca's three poles model assumes that presence in the different modes is exclusive. Slater and Steed [26, p. 419] attempt to resolve the conflict between presence as a continuum, and presence as categorically physical *or* virtual. *"We can think of presence as a selector amongst environments to which to respond, which operates dynamically from moment to moment. If it were possible to 'freeze time' at a specific instant, then the individual would be paying attention and responding to a set of stimuli corresponding to one environment, not paying attention to all the other stimuli … the set of stimuli of the 'present environment' forms an overall gestalt, providing a* consistent believable world in itself." This conceptualizes presence rather like the editing suite of a live TV feed; the 'live' camera corresponds to presence; it relates to Goffman's 'engrossables' and the way one is 'carried away'. However, it is problematic in its suggestion of mental processes of which we are unaware. The approach also conflicts with the residual awareness of mediation experienced in a mediated environment. Ijsselsteijn [27, p. 253] makes this point, arguing that unlike the familiar duck/rabbit gestalt, *"Both medium and physical environment are distinct entities which may be perceived at the same time. … Rather, a break in presence may be conceived of as an attentional shift away from the mediated environment and towards the physical environment, but with the possibility to still feel a sense of presence in the mediated environment, albeit to a lesser extent."*

The analysis of presence as framed involvement portrays presence as a continuum rather than an all-or-none concept of presence. However, frame breaks help to explain the attraction of the categorical interpretation. When a frame breaks, *"...the individual's situation can collapse, disintegrate, go up in smoke…"* [1, p. 302]; involvement changes suddenly rather than gradually, creating the impression that presence in different environments is exclusive.

4.4. Breaks in presence

The concept of 'breaks in presence' was operationalized by Slater and Steed [26]. Breaks in presence are transitions between absorption in different spheres, e.g. between the virtual and everyday world. Slater and Stead note that reporting breaks in presence is not possible on transition into the virtual world: *"The reporting of transitions into the state of absorption is impossible without undermining the absorbed state itself."* [p. 14]. However, transition to the physical world can be reported, and they developed a 'virtual presence counter'; this enables research respondents to signal when the laboratory, rather than the virtual environment, is dominant. The authors report a significant negative correlation between presence breaks and reported presence in the virtual environment.

If presence is construed as framed involvement, a break in presence may consist simply of a reallocation of involvement and a focus on a different frame, or it may reflect the dissolution of a frame. Return to the ordinary world may involve a sudden transition, when absorption in a virtual or imaginary frame is suddenly fractured. Schutz describes these as 'shock experiences' as we move from one world to another [cited by 1, p. 4]. Goffman [1] writes of 'containment' within a frame, this is disrupted by inconsistencies between the frame and the experience. Social interaction in a shared frame can reinforce containment within the frame, but if one person loses involvement this may break the involvement for others. When frames break, involvement and presence is dissipated. This relates to the claim by Walker and Davide [28] that it is breaks in presence that are experienced, rather than presence itself; they define presence as the *"absence of breaks in presence"*.

The preceding analysis demonstrates how presence defined as engrossing involvement in a spatial frame relates to some areas of the presence literature. In the next section frame analysis is used to explain the circumstances under which we consider things to be real, and to elucidate the relationship between presence and reality.

5. Presence and reality

Brandt and Metzger [29] distinguish four meanings of reality. Reality**1** is the objective world that is presumed to exist beyond our subjective experience. The subjective, phenomenal experience of the world is reality**2.** Reality**3** is that which we directly encounter as opposed to that which is merely represented in the mind (e.g. thoughts). Reality**4** is the extent to which something is *experienced as real*.

Reality**1** and reality**2** relate to the positivist and phenomenological ideologies. Positivists believe that there is an objective knowable reality (reality**1**), while phenomenalists focus on the world of subjective experience or reality**2**. Different philosophies pertain to the relationship between reality**1** and reality**2**; social constructionists [30] contend that reality is constructed and there is no reality**1**, social constructivists [31] merely contend that reality**1** is unknowable. Mantovani and Riva [3] claim that most scientists take the rationalist position of 'ingenuous realism'. This involves a concept of reality as both external and knowable; that is, knowledge relates to reality**1,** which is knowable through reality**2**. Mantovani and Riva maintain that this ontological position creates a problem for virtual reality, but not for teleoperations systems. The latter involves remote control using robotic controls, i.e. it involves remote presence in the ordinary physical world. However, virtual reality is problematic under ingenious realism because it relates to things which do not exist, but which create sensory experience; it is therefore akin to hallucination. This dilemma, they contend, is created by ingenuous realism, which assumes a dichotomy between mediated and unmediated experience, whereas all experience is mediated. The authors adopt a social constructionist view, where reality is defined within a cultural framework by negotiation of action and meaning. Under this perspective, presence depends not on fidelity but *"on the capacity of simulation to produce a context in which social actors may communicate and cooperate."* [p 538]. This social constructionist view of reality distinguishes shared worlds, such as virtual environments and the physical world, from imaginary private worlds, such as day dreams and hallucinations, where there is no collaborative construction.

Reality**3** is concerned with distinguishing things in themselves from their representations e.g. the physical world is contrasted with what is imagined or thought. Applying Brandt and Metzger's definition, Heeter [11] concludes that reality**3** applies to virtual environments because they impinge directly on the senses, as opposed to simply being represented in the mind. However, the definition of reality3 is unsatisfactory; using the authors' example, under this definition one's liver is not real

because it is not encountered, whereas dreams and hallucinations are real.

Frame analysis is also a form of social constuctionism, in that frames are culturally relative and confer meaning; the theory means that reality**2** does not correspond directly with reality**1**. However, this paper, and Goffman's frame analysis, is more concerned with reality**4**, the extent to which we consider our experiences real or genuine. This philosophy of language approach explores the use of the word 'real', rather than the metaphysical question of what is reality. This approach has practical application and can be applied to the design of virtual environments, encouraging participants to consider them real. This is discussed in Section 5.5. Frame analysis also introduces a further meaning of reality, analogous to reality**3**, which usefully distinguishes between experiences in different realms, e.g. between the ordinary world and hallucinations.

5.1. Immersion and reality

Slater defines 'immersion' [17,32] as the extent to which a virtual reality environment shuts out the 'real world', and has rich representational capability. This use of immersion contrasts with that of Lombard and Ditton discussed in Section 4.2. For Slater immersion is an objective quality of the environment corresponding to its fidelity to the real-world sensory experience. Immersion is not the same as presence, which is a subjective, conscious experience that can occur in unrealistic fantasy worlds. However, Slater [17] states that there is probably a strong empirical correlation between immersion and presence. Immersive environments are likely to be more engrossing, promoting the experience of presence. More immersive environments are more realistic or more 'real', but to say that something is more, or less real, is actually to deny that it is real. Immersion makes an environment more realistic, but it does not make it real.

5.2. Reality and frame analysis

In his introduction to Frame Analysis [1, p.2] Goffman positions this work as an ontological enquiry, in the tradition of William James; it is an attempt to answer James' question, *"Under what circumstances do we think things are real?"* Frame analysis attempts to identify the elements of situations that convince us they are genuine.

The concept of frame introduced in Section 2 is a simplified version of Goffman's frameworks; it ignores the difference between primary frames and their transformations. To accommodate imaginary and illusionary experiences, Goffman uses two frame 'transformations': keyings and fabrications. Fantasy, daydreaming and various forms of drama are 'make-believe' keyings. On the other hand, hallucinations and dreams are fabrications because they involve (self) deception. Transformations are cues that something is not real. Transformations can relate to whole realms, e.g. an imaginary world, or to experience within the ordinary physical world, which is not real in the sense that it is not what it appears to be, e.g. a play fight. Recognition of a

transformed frame is *one* way of deciding that something is not real. Goffman did not specifically consider mediated environments as a category; most virtual reality environments have the special status Goffman gives to theatrical performances, where we are willingly *"transformed into collaborators in unreality"*, these are *"voluntarily supported benign fabrication(s)"* [p. 136].

For Goffman, what makes something real relates to both involvement and frame. He notes that it is their potential for inducing engrossment that makes other worlds seem 'real' [1, p. 347]. Worlds where we become engrossed or carried away seem real; it is this same involvement which induces a sense of presence in that world. Engrossment or involvement is therefore one aspect that makes things seem real. The reality of an experience also depends on how it is framed.

There are two ways in which an experience may be deemed unreal in virtue of the frame applied. Firstly, the type of frame is relevant, whether something is real or unreal depends on the frame used, under one frame it may be real and under another not real; without a frame it is meaningless. If the frame is a keying or fabrication the experience framed is deemed unreal. For example, a theatrical play is not real because drama is keyed as make believe. In other words, application of a transformed frame automatically implies that the experience is not considered real. Secondly, an experience may be unreal because the frame applied does not fit the experience. So an event framed as murder is shown to be unreal when the victim gets up. When we perceive that the frame does not 'contain' the experience, the frame 'breaks', we realize that the experience is not real. *"Experience … finds no form and is therefore no experience. Reality anomically flutters."* [1, p. 302]. If the scene is framed as street theater, the recovery of the victim does not disrupt the frame; both involvement and presence are sustained. However, the event would still not be real because the frame, 'street theater' is a 'make believe' frame; this makes the framed experience unreal.

Imaginary worlds are not part of the ordinary world; framed as imaginary they are unreal because of the transformed frame, framed as part of the physical world they are not real because the experience does not match the frame. Frames and transformations thus help to distinguish what we can call real.

The concepts of presence and appearance of reality are related in that both are induced by engrossment, and disrupted by frame breaks. However, presence can occur in worlds recognized as unreal, for instance, in the theater or in a day dream.

5.3. Reality and mediated communication

Zhao [4] distinguishes remote from virtual presence, he claims the former extends sensory information, creating an experience of 'being' there or 'being' in a remote location; the latter simulates sensory information, creating an experience of being 'there' or being in a virtual space. In the first case, it is the existence or 'being' that is not literal, in the second it is the place that is not 'real'.

In phone calls there is both remote presence and virtual presence. Phone conversation occurs simultaneously in two physical locations, remote presence of the other person is experienced at each location. In addition, there is the shared virtual space, the participants meet 'on the phone'. In phone calls sound is produced sequentially and is transient, so that interpretation requires continuous attention, furthermore, silence is not socially acceptable. Consequently, phone calls require a large allocation of attention. A phone call is a frame in which we become engrossed, but phone calls are not framed as places. This may be because they are not visual and have few spatial cues. A phone call is conceptualized as a space where people meet, the meeting is real but there is no meeting place. This avoids disruption of the frame; it is perfectly possible to feel present in the phone call and in a physical location at the same time. Videophones show the physical location of each participant; there are actually three spaces, that of each participant and the phone space. However, there is no inherent inconsistency because each participant is only deemed to be in one *place* at a time.

Virtual reality environments are often framed as places. They may include visual sensory experience and incorporate three dimensional locational cues, with separate areas and movement between different locations. These increase immersion (representational fidelity) and presumably presence. However, this encourages use of a 'place' frame which creates problems. The physical location of a person is given by that of his physical body, and it is impossible to be in two places at the same time. The frame 'place' therefore includes an inherent incoherence, which reduces containment in the frame. There are various 'self-involvements' such as stomach rumblings which automatically refocus attention on the body creating awareness of conflicting locations.

5.4. Staying in the frame

Containment in the frame depends on coherence between the experience and the frame, but this coherence, in turn, depends on the frame employed. For example, if a make believe frame is applied, for example, 'theater', then coherence between frame and experience is easier to achieve. This is because the frame includes a convention of 'suspension of disbelief' and imposes fewer constraints on the types of experience that are consistent with the frame. On the other hand, if a 'real world' frame is applied this requires 'real world' fidelity to prevent dissolution of the frame. The frame applied is not completely dependent on the participant, because it is cued by the experience itself. For instance, in the theater the stage and curtains signal the relevance of the theater frame.

Frame theory can be applied to the design of virtual environments and used to facilitate containment in the frame, thus reducing frame breaks and prolonging presence in the environment. There are a number of factors that encourage containment within the frame. These include consistency between frame and experience, social interaction with others who appear to apply the same frame, emotional involvement in the framed experience, and

consistency with other frames. Goffman also describes how the Shakespearian device of a play within a play has the effect of increasing involvement and containment in the theater frame. The actors and audience share the play-within-a-play frame; this makes the actors seem more real and encourages engrossment.

Locational cues that promote the use of a place frame create potential inconsistency between the physical location of the participant and his apparent location in the virtual world. This conflict may be exacerbated by a virtual reality helmet; ideally participants should be physically comfortable to minimize self-involvements, which draw attention to the physical world.

The phone space in a phone call illustrates how a virtual *space* allows participants to be comfortable in two spaces at one time. Alternatively, the virtual element may be seamlessly integrated within the physical environment, e.g. in augmented reality. On the other hand, locational cues encourage action within the virtual environment, this may promote presence, especially if the action is cooperative, in that it reinforces the frame.

Involvement and containment in a theater frame is supported by conventions which clearly signal the 'make believe' frame, for instance the use of a narrator, and the conventions of dramatic discourse, etc. In addition, the stage and curtains separate the performance place from the audience, preventing conflict between the two spaces. Adopting a frame that signals unreality may reduce conflict and *increase* presence. Virtual environments can develop and adopt conventions which signal virtuality, for example, the use of avatars. While this also signals that the environment is unreal or fabricated, it may nevertheless promote involvement and containment in the frame, and therefore prolong presence. Perversely, in this way, a lack of fidelity may improve presence by signaling the virtual frame, presence is extended at the expense of reality.

6. Conclusions

Frame analysis helps to clarify the concept of presence and its relationship to reality. Experience, contents and frame interact in the construction of the perceived experience. Presence in the virtual environment occurs when the experience is engrossing but is lost when there is inconsistency between the frame applied and the contents. Paradoxically this can mean that if the contents are *too* realistic they may conflict with the *virtual* frame. Locational cues which suggest that the user is physically in the environment are particularly liable to create conflict with awareness of actual physical location. For some applications of virtual environments unreality may be a benefit, for example, in the treatment of phobias the patient's awareness of the *virtual* frame enables a controlled level of engagement with the object of his phobia.

Presence is engrossing involvement in a spatial frame or transformed frame. Frames explain what is meant by being *in* a mediated environment. They resolve the paradox of how one can experience different environments or realms at the same time, without being in two places at one

time. Involvement allocation explains the degree of presence experienced. The flexibility of framework theory accommodates imaginary, virtual and physical worlds and the many nuances of these basic modes. The theory can also be used to elucidate the concept of reality, and its relationship to presence.

There are three different grounds for considering an experience real: engrossment, containment within a frame, and use of an untransformed frame. The first two also promote presence, but the unreality of a transformed frame does not prevent the experience of presence, and may extend containment.

In terms of mediated communication, a phone call is clearly part of reality; although the phone environment where the interactants meet is a virtual space, it is considered real. On the other hand, while playing a virtual reality game is a real activity, the game environment, however engaging, is not. This is because it is framed as a *place*, when it is clearly not physical; the place frame conflicts with residual awareness of their *actual* physical location undermining containment in the frame.

What makes something seem real is engrossment, the relationship between the frame and the content of the experience, and the type of frame applied. Frame analysis identifies as unreal both experiences which are misframed and those where although the correct frame is applied, the type of frame indicates that, in some sense, they are not real. Goffman's use of 'real' is rather extreme, because although daydreams and virtual environments are not part of the ordinary everyday world, they are real experiences. Similarly, if I watch street theater this is a real experience, but it consists of two different frames, 'being in the street' and 'street drama'; the keyed frame of the latter indicates that what is seen cannot be taken at face value. In both these situations there is an element of unreality, things are not quite what they seem, and in this way they are 'unreal'; paradoxically this makes reality consistent with a degree of unreality.

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