

# Ritual Co-location: Play, Consciousness and Reality in Artificial Environments

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**Abstract.** It is argued that consciousness is an illusion of coherence arising from massively parallel processing in the brain, in response to distal attribution arising from perception, and reference to prior bodily states. Presence is a key aspect of consciousness, as it establishes the self as a concept in relation to the environment. Virtual realities operate by enabling an artificially reduced set of environmental stimuli to be fed into conscious experience, whilst conflicting stimuli and prior knowledge are disregarded. It is argued that virtual realities therefore have much in common with ritual states. Immersive games, as a type of virtual reality, share many common features with liminal phases of ritual, and it is further argued that they also share the functional ability to manipulate the rules by which consciousness is formed.

## 1 Consciousness and World-Rules

Consciousness is a linear experience. Dennett has described it variously as a “centre of narrative gravity” and “fame in the brain” [1]. His functionalist model draws from a history of parallelism in artificial intelligence that originates in such programs as Selfridge’s Pandemonium [2]. In a similar vein to Minsky’s “Society of Mind” [3], Dennett argues that consciousness is an illusion of coherency and permanence formed by massively parallel competing processes in the brain, each of which is formed by the combination of a vast number of very simple functions. Thus, an apparently cohesive and linear experience is constructed from a huge number of parallel processes. The model stands in opposition to those philosophers of mind that Dennett and others have dubbed the Mysterians, who argue that mind and consciousness cannot be considered as anything other than either biologically unique or the result of a yet undiscovered, even mystical energy. Parallelism, which finds its contemporary incarnation as connectionism, demonstrates with ease that designs and mechanisms which initially appear irreducible, or even outside the capacity of scientific investigation to tackle, in fact break down into a number of definable parts, albeit a very large number. Our failure to understand how all of these processes operate and interact is in no way a catastrophic blow to the conceptual model.

Once consciousness is considered as a necessary illusion of unification, a linear stream that enables a particular kind of higher order thinking - a means to

an end, rather than a priori evidence of a higher order of being - the relationship between the exterior world and the interior one becomes more interesting. Consciousness is the result of a highly complex, ongoing set of information transactions between a nervous system and the environmental systems it is embedded in. These transactions do not stop at the confines of the organism, but rely upon the traffic of information about the wider environment inferred by the nervous system through the act of perception. This second source of information has been described as distal attribution. So, not only does consciousness arise from neurological processes that occur as a result of homeostatic and proprioceptual monitoring; but it is deeply reliant upon the inferred, external world. To form a sense of self, one of the central tenets of consciousness, a distinction must be made between the organism and the environment. It could be argued that consciousness is a profoundly successful evolutionary means of creating a greater degree of survivability within an environment, by enabling a coherent and lasting concept of self to emerge.

Thus, consciousness and the subjective location of the self within an environment may very well be codependent. This identification, and the subjective sense it yields is generally referred to as presence. The argument outlined above, however, suggests that rather than accepting the standard definition of presence as “the observer’s subjective sensation of ‘being there’ in a remote environment” [4], perhaps the very formation of a concept of ‘there’ as somewhere exterior to the nervous system, a result of the process of distal attribution, is actually a necessary constituent part of consciousness. If this is the case, we are, to appropriate Derrida’s phrase, always already somewhere else. Presence and consciousness are therefore linked at the very root, something accepted by many working at the juncture of virtual reality and neuroscience [5]

If distal attribution and presence enable consciousness to exist in the moment, mechanisms to provide the coherence equally vital to a sense of self must be identified and added to the mix. Edelman [6] proposes that a key neurological feature of consciousness is reentry, the parallel distribution of information simultaneously and reciprocally across diverse brain regions. His Theory of Neuronal Group Selection (TNGS) provides intriguing support to Dennett’s model, describing how distinct mappings of reference yield more formalized architectures for future neural activity. Damasio [7] proposes a Somatic Marker Hypothesis which anchors thought and consciousness within emotion, particularly in a network of formalised somatic networks describing bodily states in reference to particular interactions with the external environment, Although the choice of evidence used to support the hypothesis has been questioned recently [8], it nevertheless lends important support to the parallelist, emergent model of consciousness. Both Edelman and Damasio reiterate the importance of homeostasis and internal reference to previous states to any coherent system of consciousness. To be conscious, specifically to be operating with higher consciousness, one must be both present and engaged. This is more than simple attention; it is a dynamic relationship of reference to prior states and inferred environmental affordances and invariants the requires managing structures and processes.

Returning to a specific discussion of consciousness in relation to artificial environments, this suggests an interesting line of enquiry. Presence research has provided evidence that beyond a point, increasing signal fidelity does not increase sense of presence [9]. Perhaps more important is the mix of sensory signals, coupled with an effective mapping between supported action within the environment and subject expectations, in other words, that there is projected coherence and acceptability of the constraints of the system on the part of the subject. It is also generally accepted within the presence community, though with perhaps less rigorous empirical data, that compelling, emotionally involving content will enhance presence considerably, something which finds a great deal of folk support in the arts - a comprehensive survey of empirical presence studies can be found in [10]. Given that presence and empathy are so important to managing or taxonomising prior states and, thus, reasoning and consciousness, it could be questioned whether consciousness is indirectly affected and manipulated when experiencing highly immersive systems. One could come at this from a slightly different angle: given the capacity and history of modern humans to seek altered states of consciousness, even to artificially create new mental architectures and schema which may have permanent repercussions upon both prior states and distal attribution, is the process of creating virtual and mixed realities one of attempting to artificially manipulate the structures of consciousness, culturally as well as individually?

Huizinga [11] speaks of the child “quite literally beside himself” when immersed in the act of play. Schema have long been recognised as organising principles in memory and sit quite comfortably alongside Damasio, Minsky, Edelman and Dennett [12]. As dynamic mechanisms, they are malleable yet persistent and are perfectly amenable to being artificially imposed. Highly formalised schema are at the heart of ritual behaviour. We learn how the rules of the inferred world operate: what money means, what faith or science is, the role of ethics in interorganism relations. Makers of cultural artifacts and symbolic environments are in the business of manipulating the ‘world-rules’, shaping the schema that impact directly and indirectly upon distal attribution and empathic memory: the creation of successful artificial realities is a means of changing the rules by which consciousness is formed.

## 2 Virtual Reality as Ritual Experience

A virtual reality, according to Steuer’s influential definition [13], is an artificial system which generates a sense of presence. Not only does this position the study of virtual reality squarely within the domain of cognitive science alongside anthropology, but it illustrates the close ties between understanding the psychology of the user in a computer generated environment and consciousness as a wider issue. In other words, understanding both the nature of a synthetic immersive system and the psychological, neurological and behavioural response of a user to it, should provide important perspectives upon the relationship between an

individual's subjective reality and its relation to objective and communal reality in general.

What is perhaps most evident about computer generated virtual realities is that they are systems of reduction: sensory stimuli and supported actions are vastly reduced in scope and number. Even with advances in their capabilities, for example, the paucity of visual complexity is a defining characteristic. Yet, as we have seen, visual fidelity - along with any other form of realism - is not necessarily a critical factor in inducing presence, a fact that is also likely to find support from gamers and audiences. Equally, realism does not necessarily imply emotional engagement or empathy; it is entirely possible to invoke high levels of empathy with very crude stimuli. An important question to ask then, is of the willingness of participants to accept such massively reduced fields of inferred stimuli.

One simple answer would be to suggest a natural pre-disposition towards reduced systems. In order to do this, let us make some further definitions. To constitute a system, we would expect multiple units to form a cohesive whole. Additionally, some form of repeat applicability or permanence seems fair to expect, to avoid the definition including coincidence or post-rationalisation. Given that consciousness appears to be made up of only a percentage of the vastly larger system of parallel processing going on in the brain, and, forms a cohesive whole from many parts, the idea that consciousness itself could be defined as a reduced system makes logical sense. In fact, one could even argue that it is the process of massive reduction that enables the holism of consciousness to emerge in the first place. To put this another way, let us reconsider presence. Two primary conceptualisations of presence are apparent. In the first, presence is the "subjective sense of being there", which is another way of saying it is "where consciousness appears to be located at this moment". Conflicting stimuli are filtered out and do not make it through the reduced set of consciousness; presence, according to this definition is about the reduction of information to a set of coherent world-rules, implying a singular environment, rather than multiple co-existent realities. Alternatively, one can base a definition of presence at a neural level and define it as a neural state where the nervous system, potentially including higher cognitive functions and consciousness, is dominated by the vastly reduced rules of an imposed system. According to this second model, although one may expect subjects to be present consciously, it is neither necessary nor fundamental to the process. In other words, a subject may not even feel particularly present, whilst their body reacts to the artificial environment as if it were the real one. Presence is therefore to do with which prior states are triggered by distal attribution, suggesting that this triggering process can be manipulated artificially. In both cases, presence is the outcome of a process of reduction, of filtering, of ensuring that a cohesive endstate is reached by disregarding conflicting information.

Evidence such as the comparative ease with which presence can be induced or memories manipulated, alongside studies in selective attention and inattentive blindness [14], all support the idea of a pre-disposition towards reduction.

It should come as no surprise, therefore, that specifically constructed reduced systems are ubiquitous in human culture. Rituals are a particular type of reduced system. As a relatively fixed sequence of actions and event, yielding a perceived (but not necessarily physically apparent) and pre-ordained result, they are a highly effective means of controlling conscious reality. As Schieffelin [15] has suggested, this is not simply due to their symbolic content, but the establishment of a performative filter, an artificial set of supported behaviours, expectations and explanations. This creates a template for causality and coherence that both forces and aids participants in filtering out conflicting information to create a specifically constructed version of reality. A robust ritual is one that manages the process of reduction effectively, manipulating and concentrating information filtering until it fits the required mould. By restricting the allowed interchange between self and environment, often through the superimposition of symbolic, artificial personae and objects, rituals enable information superfluous or conflicting with the aims and functions of the event to be disregarded. In other words, ritual is the imposition of artificial world-rules upon subjective or conscious reality. Reducing the supported behaviour and adjusting explanations for events, directly manipulating distal attribution and emotional memory, through codified behaviour is a critical part of this effective functioning.

This approach offers an alternative perspective to the issue of virtual reality that highlights the correlations between computer generated environments and cultural practices that can be argued to be a hallmark of modern humans. If, as the evidence from anthropology and ritual suggest, it is entirely possible to layer artificial filtering systems into reality, through both the establishment of symbolic landscapes and a reduced field of supported actions, then the issue of virtual reality, presence and empathic proximity becomes one of control of filtering mechanisms in the flow of information through ever smaller subsets of significance. When we discount the notion of presence as transportation, a subjective sense of being somewhere else, and conceptualise it instead as the effective imposition of world-rules refining a manipulated subset of significance and supported actions, we do not require the subject to be transported anywhere. The misleading notion of distinct, multiple realities can be abandoned: rather than relocating the subject, it is a question of, in Dennett's terms, shifting their centre of gravity and adjust their perceptions of the inferred environment accordingly [16]

It is suggested, therefore, that there are a number of interesting commonalities between rituals and virtual realities. Both are defined by a reduction in supported actions and inferred stimuli. Computer generated environments operate at a different level of filtration, attempting to direct attention away from the system generating the experience towards the experience itself. Non-technological rituals operate in essentially the same manner, but manipulate the filters around the physiological act of perception by manipulating schema that direct perception and process the information picked up from it. Additionally, if psychotropic drugs are involved, it could be argued that the distinction is blurred further, as a direct physiological manipulation is also in place.

There is a caveat, however. In order to qualify as a ritual, we would expect virtual environments to encompass a fixed sequence of actions and preferably see these actions enacted culturally, not just individually. A single individual undergoing an isolated experience with a virtual environment may not qualify under such a definition, although we would still argue that conceptualising it as a reduced system remains advantageous. However, if we follow Steuer's definition as those systems which induce presence, thereby avoiding the self-defeating taxonomy of technological thresholds, there are very clearly types of virtual realities which lend themselves to a ritual definition much more easily. Games, in particular first-person perspective games, induce presence, are highly engaging, exhibit classic reductive structures and enable a mass experience of symbolic, pre-ordained, fixed, repeated sequence experiences.

### 3 Liminality, Avatars and Games

Turner [17, 18] writes extensively on the concept of liminality, that is "any condition outside or on the periphery of everyday life", a ritual state of threshold. In liminal phases, symbolic and performative actions, events and personae are ambiguous and shifting, enabling a transition between two distinct states. There are a number of features of the liminal state that pertain directly to this discussion and enable us to draw ritual, virtual reality and consciousness more tightly together.

The liminal state is chiefly characterised by detachment; it follows a process of separation from the existing state or rules. During the state, these normative rules are suspended and indeterminacy is paramount. Turner notes how liminal personae in particular are ambiguous in personality, attitude and classification; how they occupy a lowly position within the system and are usually submissive to the embedded authority symbols and figures. This does not necessarily mean passivity, but more a state of malleability, a readiness to be inscribed with the rules and operating systems of the emerging end-state. There are clear and evident links to conceptualisations of character within drama, of the 'hero's journey' which nearly always involves such a liminal period of transformation. Classically, drama explodes the initial state, resulting in a new system with attendant, reduced, rules being implemented as a liminal phase. Ordinary social rules, and frequently rules of reality, are suspended or rendered ambiguous, whilst supported behaviour is reduced to highly symbolic and highly constrained sequences, focussed upon the resolution of the conflict along with the transformation of the protagonist. There are intriguing points of similarity with experience of immersion in virtual realities: normal rules of environment and action are suspended, placing the subject in a state of ambiguity between sets of inferred environments, in which all objects are symbolic and all actions codified according to an artificial and reduced set. A more explicit dramatic structure is found in games, where the experience of immersion is coupled with a highly structured narrative and set of goals, usually based around conflict.

Consider first-person perspective action games such as *Doom3*, *Deus Ex2* or *Half Life2*. The avatar has a character, but is also the player. It is the player's actions, manifested in the environment through the avatar, that enables the avatar to progress through the drama, resolve the crisis and become transformed. Two interesting points arise from this. Firstly, there is the question of whether games contain, or indeed are, liminal states. Secondly, there is the question of the relationship between the transformation of the avatar and the player which, in turns, leads to the question of the relationship between the avatar and the player in general. These discussions lead us back to the issue of reduced systems of reality and their impact upon the rules that influence consciousness, and finally to question the idea of games and virtual realities as codified systems of consciousness alteration.

Putting presence and conscious location aside for the moment, let us build on the claim that games are ritual activities and consider them as liminal systems. As has been noted, immersive games are reductive, codified, open to multiple application, culturally repeatable, and require a performative interaction that is defined by both system constraints and steered by the symbolism within the game environment. As such, they appear to fit the conditions required to be defined as ritual. Liminality and drama are naturally related [19]; it is easy to argue that the avatars in games that utilise dramatic structures undergo liminal processes. It could be further argued that, in fact, the entire action of many first-person games takes place within a liminal phase. Conflict is usually initiated very early on, within a few minutes of play, if not from the outset. In the cases of games such as *Doom3* or *Half Life2*, the world is rendered explicitly ambiguous and adrift from reality by virtue of invasion of otherworldly entities. Thus, the entire purpose of play in these games is to progress through the liminal state, resolve the conflict and enable the end-state to occur, usually a transformed version of the initial state of normality. In *Deus Ex2*, the transformation of the avatar is centralised, rather than being simply a case of the accumulation of power and capabilities, the avatar is literally transformed into a living god. During game play, however, the same avatar is a submissive pawn in a wide and ambiguous plot that is only revealed as the transformation unfolds. In fact, the internal liminality of a first-person world could be argued to be a powerful tool in enabling players to engage with the highly reduced system: the effective combination of dramatic impetus with the removal of normal rules and initiation of an ambiguous state that has to be engaged with on its terms, not the player's, enables designers to focus behaviour specifically towards a limited set of possible activities. Liminality, as a type of ritual instance, when successfully implemented, should be expected to strengthen the ritual experience, as it draws the participants further into the artificial filtering system.

Given that it is relatively easy to make the case that avatars in game dramas can occupy and move through liminal phases, it naturally follows to consider the players. The relationship between avatar and player is complex: does the player, for example, reduce the empathic distance between themselves and the avatar when highly present, in a manner similar to the actor falling headlong into a role;

or does the avatar's character recede, decreasing in importance as it is displaced by the player's projection of themselves in the experience? For a player to be fully present in a game world, we would expect them to be operating according to the rules of the reduced system, not considering conflicts between prior states and current distal attribution, for example. The avatar focuses attention and enables this dismissal of contradiction to occur; the player's range of supported actions are not reduced directly, but filtered through the avatar. Reductions to supported actions are thus applied at the avatar level, creating a codified set of actions that the player engages with, much as Scheffelin suggests. On one level, this is simple expectation management, subtly steering the player away from demands the system cannot meet. But it is not unreasonable to also consider this in terms of ritual, liminal systems. It is not a case of disabling the player, but of creating an ambiguous, liminal state where the line between avatar and player is blurred, thus enabling behavioural constrictions to be integrated with player expectations at a pre-conscious level. As has been noted, this does not require distinguishing between realities, or environmental systems, but constitutes a successful manipulation of the rules by which consciousness is experienced. The avatar is a conduit, a performance tool to enable action to operate seamlessly within the reduced system.

## 4 Conclusion

The reality experienced as consciousness exists as an oscillation between affordances and invariants distally inferred from the surrounding environment, and markers and rules embedded as representations of prior bodily states in reaction to past interactions. From this massively parallel system of brain states, a linear, cohesive experience is formed. Vital to this state is the defining of an organism's boundaries and coherence within the distal environment and this emergence of the self is fundamentally linked to the notion of presence. Crucially, without what Loomis [20] describes as a "lapse into naive realism", conscious experience of reality is created through a filtering process that, according to rules that may be evolutionary, biological, cultural or schematic in nature, reduces overall information to a subset determined to be significant. As such, it may be argued that humans have a natural pre-disposition towards reduction, as it forms a principle tenet of consciousness. This certainly makes sense of the ubiquity of cultural reduction systems, such as ritual. In such reduced systems, world-rules are further schematically manipulated in order to create an additional, artificial layer of reality. It is not unusual for participants in rituals to describe actions, objects or personae that are physically impossible, disregarding the conflict information from prior distal attribution and markers. Liminal states, defined performance actions and symbolism assist in the integration of these impossibilities, by manipulating the filter systems used to reduce parallel information to linear consciousness.

Computer generated environments, it is argued, have much in common with ritual spaces. Virtual realities, defined as presence generating systems, share with

rituals a highly structured, formalised and symbolic reduction of cues from mass parallelism to consciousness, albeit by blocking, replacing or drawing focus away from the cues arising from the physiological act of perception. Games, especially first-person perspective games, are highly ritual in nature, as they make full use of symbolic and schematic manipulation to filter the information stream further. It is also argued that such games are frequently liminal in nature, where normal world-rules are deliberately separated out and the notion of self manipulated to render an artificial state that aids the removal of expectations of normality. It is suggested that players experiencing high levels of presence may be considered to be in liminal states themselves, rather than objectively experiencing liminality-by-proxy. The avatar is a device to enable and enhance direct liminality.

Rituals, especially transformative rituals, play a key role in society, enabling transitions between states, reinforcing social conditioning and acting as conduits for conflict. If virtual environments, with games as the most common and most dramatic manifestation of the medium, share structural factors with ritual, particularly rituals with high levels of liminality, their importance culturally is leant further weight. Ritual activities are designed to layer additional filters into the act of consciousness, to literally change the world and the self's relation to it. This transformation may be limited to the period of the ritual activity, or may have permanent repercussions for the individual and the society. This raises the question of whether virtual environments or games can be used for similar purposes - indeed, whether they already are. Certainly, the importance of understanding the implications of the consciousness changing aspects of presence and its relationship to notions of permanence leaps to the fore.

A final point. The relationship between games, virtual reality and ritual is significant because of their current separation. The majority of gaming and virtual reality experiences are well-defined, bookended by the interaction with a complex and highly visible technological system. The liminal phase is constrained by the monitor and the mouse. The rise of mixed reality, particularly mixed reality gaming, is another matter. As it stands, we can distinguish non-technological ritual from virtual reality by the lack of direct manipulation upon physiology, that the artificial realities that are created are done so directly within the filtration systems of the participants. Mixed reality gaming has the capacity to operate upon the participant physiologically as well as schematically; it also can embed artificial manipulation devices directly into the environment prior to the act of distal attribution. If ritual, and virtual realities are artifacts for the manipulation of the rules by which consciousness is generated, then their combinatory form of mixed reality is potentially potent indeed.

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