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# Understanding Virtuality

*Contributions from Goffman's* Frame Analysis

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**Abstract**. Although virtual interactions are often assumed to be separate and distinct from the "real world," they are ultimately situated in material reality. In this paper I propose that a situated approach to understanding virtuality can be drawn from Goffman's *Frame Analysis* (1974/1986). I explain how Goffman's terminology and concepts afford a powerful way of integrating the study of virtual action and interaction with the study of social action and interaction more generally. His frame analysis provides language and concepts for distinguishing virtual worlds from each other and from real worlds in a way that is consonant with significant aspects of human-computer interaction. It helps to account for the phenomenon of immersion in virtual worlds, while at the same time, it is better suited for understanding both co-present and mediated social interaction. I conclude by discussing some limitations of this approach and suggestions for further research.

## 1 Introduction

RW, an acronym for the 'Real World' and commonly used inside virtual spaces to refer to the non-virtual world, implies that the material world is separate and distinct from virtual worlds. Yet, people engaged in virtual action, whether virtual work, online games, or simply electronic communication, are *situated* in the real world and using material technology. Woolgar has stressed the importance of the

local and the "real," relative to virtuality, in a chapter on "rules of virtuality" [1].[1] Such a local, material perspective is consistent with the tradition of situated approaches to research on how information and communication technology (ICT) is used—stretching back at least as far as Suchman's *Plans and Situated Action* [2].

In fact, most virtual activity is grounded in real-world actions such as tapping fingers on a keyboard, directing gaze at a monitor, and moving a computer mouse (or other physical instrument). And, as the rarified forms of virtual experience such as 'virtual reality caves' become outnumbered by situated instances of virtual teams, virtual organizations, and virtual workplaces for business, virtual spaces and interactions are becoming even more tightly integrated with the "real world."

And yet, although virtual action is situated at least partially in the local, material world, something else is also going on. Users interact with technology acting as *if* distant or abstract resources are local. The question then is, "How is it that participants situated in a local material environment are able to think and act as if they're working in a team or organization or other simulation with others who are not physically co-located?" More succinctly the question might be, "How do people, and researchers, understand what is going on in their virtual environments?"

Phenomenological approaches applied to virtuality, such as Heidegger's [3] "ready-to-hand" and "present-at-hand" and Polanyi's [4] proximal and distal aspects of the tacit dimension can explain individual experience but remain essentially individualistic and offer little explanation of the interface between virtual activity and situated social interaction.

In this paper, I propose that important aspects of virtuality can be understood and explained using Erving Goffman's *Frame Analysis: An Essay on the Organization of Experience* [5] in a way that supports a broader understanding of the relation between virtuality and social interaction. Goffman's research examines situated interaction: how people interact with each other in co-present situations. Since virtual experience entails situated action – including human-computer interaction and mediated social interaction – Goffman's work on situated social interaction seems a likely place to start for shedding light on situated aspects of virtual/mediated social interaction.

*Frame Analysis* is one of Goffman's most relevant works for understanding virtuality because it readily addresses 'frames of reference' more generally. Such perspectives are well developed in social science (where they are often referred to as "interpretive frames") and are reflected in the information systems literature at least as far back as Orlikowski & Gash's [6] work on "technological frames." Orlikowski & Gash provide an extensive review of the socio-cognitive literature on frames and define technological frame as "a core set of assumptions, expectations, and knowledge of technology collectively held by a group or community" [6, p. 199].

[1]Four of Woolgar's [1] five rules reference "real" or "local" (emphasis added): (1) The uptake and use of the new technologies depend crucially on local social context (3) Virtual technologies supplement rather than substitute for real activities (4) The more virtual the more real (5) The more global the more local.

They also note how 'congruence', or alignment of frames on key elements across stakeholders, is correlated with shared expectations across these same groups.

Therefore, Goffman's *Frame Analysis* is relevant to understanding virtuality because he uses a situated perspective, he is concerned with interaction—especially social interaction—and frame is a convenient way of understanding virtual perspectives. In this paper, I therefore start with an overview of Goffman's [5] work on *frames* and then demonstrate how several important aspects of virtuality can be well-accounted-for by this approach: the non-virtual "Real World," the meaning of simulated images and processes, immersion in simulated images and processes, and virtual social interaction. I then discuss how this approach fits in with a larger perspective on virtuality. I conclude with suggestions for further research.

## 2 Goffman's *Frame Analysis*

In *Frame Analysis*, Goffman sets out a bold and ambitious agenda, "My aim is to try to isolate some of the basic frameworks of understanding available in our society for making sense out of events and to analyze the special vulnerabilities to which these frames of reference are subject." (10)[2] The phrase 'framework of understanding' refers to psychological schemata of interpretation that an individual brings to a situation, based on prior experience/learning that normally enable the individual to come to terms with that situation. It also refers to the way that people understand and describe *what it is that is going on* in social interaction (8).

Goffman posits that in any human, and especially social, activity, a correspondence exists between the organization of the activity and how that activity is perceived (the current frame of understanding).[3] For this, he draws from the work of Gregory Bateson [7] highlighting the role of psychological frames in perception and linking them to Gestalt psychology. Bateson notes:

> Psychological frames are exclusive . . . . [and] inclusive. From the point of view of set theory these two functions are synonymous, but from the point of view of psychology it is necessary to list them separately. The frame around a picture, if we consider this frame as a message intended to order or organize the perception of the viewer, says, 'Attend to what is within and do not attend to what is outside.' Figure and ground, as these terms are used by Gestalt psychologists, are not symmetrically related as are the set and nonset of set theory. Perception of the ground must be positively inhibited and perception of the figure (in this case the picture) must be positively enhanced. [7, p.187]

In other words, perception highlights some aspects of an activity while it de-emphasizes or even ignores others. Bateson also notes that psychological frames are

[2] Page numbers without references are to Goffman's Frame Analysis [5].

[3] Whether the correspondence is "accurate" or not is another matter; suffice it for now to consider that some correspondence exists. The possibility of totally random perception and activity is unlikely enough in most work environments.

related to "premises" that tell the viewer what kind of thinking to use; where *premise* "denote[s] a dependency of one idea or message upon another" [7, p. 186].[4]

Building on Bateson's concept of frame and his identification of premises as dependencies, Goffman posits that, despite "the fact that there are likely to be many valid principles of organization that could but don't inform perception" (26), at any single moment one set of correspondences informs perception and other possible mappings do not. He refers to the specific correspondences or dependencies in effect as *organizational premises*. These organizational premises, or "principles of organization which govern events—at least social ones—and our subjective involvement in them" constitute Goffman's definition of the "frame" of an activity (10-11).[5] He notes that these organizational premises are "sustained both in the mind and in activity" and something that human cognition "arrives at, not something cognition creates or generates" (247). [6]

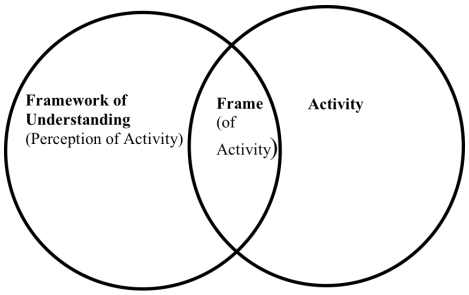


**Figure 1**: Relationship between Framework of Understanding, Frame, and Activity

[4] Noting, however, "that the 'premise' relation in psychology is likely to be intransitive" [7: 186]: dependencies between A and B, and between B and C, do not necessarily imply dependency between A and C.

[5] Although in at least one case he hedges slightly stating, "frame is the word I use to refer to such of these basic elements *as I am able to identify*. That is my definition of frame" (11; emphasis added).

[6] "It has been argued that a strip of activity will be perceived by its participants in terms of the rules or premises of a primary framework. These frameworks are not merely a matter of mind but correspond in some sense to the way in which an aspect of the activity itself is organized–especially activity directly involving social agents. Organizational premises [dependencies] are involved, and these are something cognition arrives at, not something cognition creates or generates. Given their understanding of what it is that is going on, individuals fit their actions to this understanding and ordinarily find that the ongoing world supports this fitting. These organizational premises–sustained both in the mind and in activity–I call the frame of the activity." (247)

Following Goffman therefore, the 'frame' of an activity is the set of correspondences between the organization of the activity and the organization of the framework of understanding, as in Figure 1.

To review:

- A *framework of understanding* (interpretive frame) shapes the meaning of an activity or event, enabling description of it, and informing/regulating the person's activity.
- A *frame* is comprised of the *organizational premises* (dependencies) between the organization of activity or an event, and the organization of subjective experience.

Having initially clarified these differences, Goffman proceeds to employ 'frame' as synonymous with 'framework of understanding' elsewhere in his book; nevertheless, the distinction is useful and I retain it.

Take a simple case of virtuality–'flying' a flight simulator–Goffman's concept 'frame' highlights the visual perception of what is displayed on the screen and de-emphasizes perception of other bodily movements (including and perhaps especially manipulating controls). In this example, the organizational premises are the correlations (resemblances) between aspects of the visual display and aspects of real world geographic terrain and airspace.

## 3 The Non-Virtual "Real World"

As Giddens [8] notes, in discussing social integration and system integration, technologically-mediated relationships presuppose co-present relationships. Relative to the topic at hand, "virtuality" has meaning only in contrast to that which is non-virtual; we therefore need to be able to describe the material world and co-present interaction in a grounded situated way that still supports distinctions between virtual worlds and the real world. Consequently I next focus on how Goffman's *Frame Analysis* approach can be used to distinguish "real world" (non-virtual) frames of reference, grounding the ensuing discussion of virtuality.

While innumerable frameworks or interpretive frames can exist for understanding any set of events, Goffman distinguishes "primary frameworks" as the interpretive schemata that people rely on for understanding what is "really" going on: "Actions framed entirely in terms of a primary framework are said to be real or actual, to be really or actually or literally occurring" (47). This is in contrast to other interpretations of a situation that are more layered and thereby removed from 'reality,' such as the enactment of a story in the staging of a play, or in the deception practiced by a con artist. Thus, relative to understanding the situated use of computer technology for engaging in a virtual environment, Goffman's construct of primary framework is useful for denoting that which is non-virtual.

He further notes that recognizing a situation implies the application of a primary framework, normally enabling its user to "come to terms with all events in that activity" (347). Thus, descriptions such as 'tapping one's fingers on a keyboard', 'directing one's gaze at a video monitor screen', and 'moving a computer mouse

with one's wrist' are generally accepted as descriptions of what is "actually" happening in RW while one is otherwise immersed in a virtual world. Goffman also theorizes that as the primary framework imparts a sense of what is going on, it also guides that person's actions, "informing and regulating many of them" (347). Thus an individual participating a virtual world would gear their actions to the appropriate specific operating system (for example, Mac vs. MS Windows) that they were using, even while their attention was focused on what was going on inside a virtual space. A primary framework is nevertheless relative. To a human factors engineer concerned with force of keystrokes, an ophthalmologist conducting an eye exam, or a mechanical engineer testing mouse performance the frameworks mentioned above are likely superseded by other primary frameworks. Thus Goffman's *Frame Analysis* offers a way of distinguishing RW from 'virtual worlds' at the same time as supporting explanation of activity in each.

## 4 Simulated Images and Processes

Simulated images and processes enabled by technology comprise the "environments" of virtual worlds as in the case of the flight simulator. Yet to participants in virtual worlds, they are more often viewed as virtual objects and activities resembling real world objects and activities. Goffman's *Frame Analysis* approach also offers a way to understand and explain these. To keep things simple, I start with an elementary case of a computer user working with virtual "folders" and "documents" on a virtual "desktop." Such simulated images and processes are so common today that it is easy to forget that historically, mapping between "real" desktop, folders and documents on the one hand, and virtual desktop, folders and documents of graphical user interfaces on the other, was a major innovation,[7] and that understanding how to employ the analogic mapping was something of an exercise initially.

### 4. 1 Meaning in/of Simulated Images and Processes

Goffman's concepts of 'key' and 'keying' are quite useful for understanding the relation of simulated images and processes of on-screen 'desktop,' 'folders' and 'documents,' to situated action. He describes these concepts as:

> a central concept in frame analysis: the *key*. I refer here to the set of conventions by which a given activity, one already meaningful in terms of some primary frameworks, is transformed into something patterned on this activity but seen by the participants to be

[7] First invented by Doug Engelbart at SRI, the innovation was developed at Xerox PARC and then moved into production by Apple Computer, Inc.

> something quite else. The process of transcription can be called *keying*. (43-44, emphasis added). [8]

The distinction between primary framework and keying is significant in terms of meaning and how the activity is described. Compared to a primary framework in which an activity is considered "real or actual, to be really or actually or literally occurring", a keying of that activity is considered "not literal or real or actually occurring" (47). The examples that Goffman offers include, threat, deceit, ritual, staging, fantasizing, analyzing, etc.

Thus in the example of a virtual desktop with iconic folders and electronic documents, the set of conventions for representing "actual" desktop, folders and documents via iconic images can be understood as a *key*. The frame (organizational premises) may even be explicitly represented in Human-Computer Interaction (HCI) design principles linking a bitmap image of a folder and its associated functionality with a subjective experience or belief associated with 'opening' a folder to find 'documents' 'inside.'[9] Rather than typing on a keyboard as in the previous section, the typist could now be understood/explained as relying on a specific key to perceive herself as "typing a quarterly report"; the screen gazer (employing a different key) as watching a live video cam stream; and the mouse user could describe his behavior as "formatting a marketing presentation."

Goffman notes that concomitant change in activity between a primary framework and a keying may be quite minor, but its effect on the descriptions that participants would offer relative to "what's going on" can still be vast:

> the systematic transformation that a particular keying introduces may alter only slightly the activity thus transformed, but it utterly changes what it is a participant would say was going on . . . . A keying, then, when there is one, performs a crucial role in determining what it is we think is really going on. (45)

The keying concept provides a useful way of underscoring the distinctions in perception and intent accompanying similar sets of actions in different virtual worlds, as for example between a claims processing clerk and a tech support engineer both pressing the same keys while gazing at the same simulated images and processes on the same machine. Applying different keys, one is enacting the "paying claims" key, while the other would be invoking the key of "debugging a software glitch." Goffman's approach also highlights how selection of a key is closely related to social conventions. Thus the virtuality literature includes numerous cases where

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[8] Goffman derives the term "keying" from an analogy to music—i.e. transcribing music from one key to another, although he acknowledges that musical "mode" rather than "key" might actually be more accurate (44).

[9] This is sometimes explained in HCI via reference to a 'mental model'; I avoid that term because it implies the model resides within the subject, whereas Goffman's frame and organizational premises connote a more coherent bridging between organization of subjective experience and organization of (external) activity.

members of a virtual team interpret simulated images and processes in ways consistent with their locally situated community or occupational group rather than consistent with other members of their virtual team [9-11].

### 4.2 Immersion in Simulated Images and Processes

The experience of feeling "immersed" in a virtual world is another common aspect of virtuality. For this, Goffman's term '*involvement*', which is a second aspect of frame, serves well. It denotes the extent to which an individual's attention and emotions are focused on and engrossed in an activity.

> Frame, however, organizes more than meaning; it also organizes involvement. During any spate of activity, participants will ordinarily not only obtain a sense of what is going on but will also (in some degree) become spontaneously engrossed, caught up, enthralled. (345)

Involvement in simulated images and processes, paired with keyings closely correlated with material reality, enables situated activity to seem convincingly real in a virtual sense. The more 'involved' the user becomes in the simulated images and processes, the more believable the transformational keying is.

Goffman notes also that frames normally include normative upper and lower bounds on involvement: "All frames involve expectations of a normative kind as to how deeply and fully the individual is to be carried into the activity organized by the frames" (345). Such norms associated with appropriate intensity of attention in virtual worlds are revealed in frustration over "slow response time" when degraded technological capabilities do not support normal involvement. Similarly, people who frequently transgress the upper bounds on normative involvement may be labeled as "addicted to computers," while those who operate below the lower bound are more likely to be considered "Luddites" or "computer illiterate." Taking this approach one step further, another common attribute of virtuality is that simulated images and processes are often designed specifically to intensify involvement, as in the case of computer games.[10]

## 5 Virtual Interaction

Having described Goffman's terminology of frames, keying, and involvement as providing powerful tools for understanding virtuality in terms of the relationship between situated action and simulated images and processes on the one hand, and perceptions of "virtual activity" in "virtual worlds" as distinct from the "real world" on the other, I now discuss how Goffman's *Frame Analysis* is useful for understanding virtual social interaction, as in computer-mediated interaction of a virtual team.

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[10] Goffman terms artifacts designed with this quality "engrossables" (345).

First though, a necessary digression into the basics of interaction is required. Interaction, co-present or mediated, involves alternating turns of action with attention directed toward a common focus of activity. In the co-present case, interaction also involves mutual monitoring and awareness by participants of each other and their alternating actions. Each participant responds (or reacts) to the actions of the other in turn, and involvement in the interaction is thus mutually sustained. This is essentially the same set of dynamics with which HCI is concerned albeit with person and computer rather than person and person, face-to-face.

However, the flip side of interaction, as Goffman points out, is that if one participant's attention wanders to something outside the mutual focus, the other will detect this deviation and not be able to sustain the interaction one-sidedly. That is, if one participant fails to express proper involvement in the shared interaction, the other consequently/ necessarily also becomes less involved in the formerly mutually-constructed and sustained activity.[11] Highlighting this effect, Goffman posits that mutual involvement in co-present (co-located social) interaction is thus an "*interlocking obligation*" (346, emphasis added).

How and why such an 'obligation' is manifested and experienced in face-to-face interaction is a significant issue. According to Goffman scholar Anne Rawls:

> Goffman's contribution to social theory consists in the idea of an interaction order sui generis which derives its order from constraints imposed by the needs of a presentational self rather than by social structure. . . . He argued carefully over the course of his career that there were interactional prerequisites and needs of self which places constraints on interaction. . . . Persons conformed with these because if they did not their social selves would cease to exist. [12]

Goffman presents numerous cases in which participants' encounters with such constraints are marked by "embarrassment" or loss of 'face'. Scheff [13,14] further extends this perspective, positing a continuum of moral emotions ranging between pride and shame as the regulatory mechanism. In face-to-face interaction, bodily expressions of such feelings are usually evident in body language and facial expressions visible to other interactants.

In virtual interaction, team members usually cannot directly monitor bodily expressions of each other's involvement. Nevertheless, consistent with Goffman's emphasis on *observable* action/expression of involvement, participants are often cognizant of external evidence of the other's involvement as it is expressed through recognizable action, for example, whether the person at the other end has responded to email or contributed expected deliverables. Even though the interaction is mediated, an attenuated version of interlocking obligation, contingent on electronic signs of involvement, still applies. Examples of interactional constraints, based on needs of presentational self in a virtual team, include the guilt experienced when delaying a response to an urgent email or the concern felt when seeing one's work forwarded by others to a broader audience. Repeated occurrences of interlocking

[11] No surprise to HCI professionals.

obligation build trust for continuing interactions in the future and are especially significant for supporting virtual interaction over longer time periods.

Goffman's terminology and concepts also support viewing ICT as reducing the dimensions of expressed involvement to digital images and processes in the virtual case, making it more difficult to ascertain whether the 'other' participant is indeed genuinely involved. Interlocking obligation is attenuated through technological mediation because of the inability to observe bodily expressions of involvement. This can help explain characteristic phenomena in virtual worlds such as spam, junk mail, "gaming," phishing, and online predators. The mediating technology acts as an "involvement shield" obscuring one participant's false 'evidence' of involvement, with the interaction eventually breaking down as failures in interlocking obligation become evident.

## 6 Discussion

As described above, aspects of Goffman's *Frame Analysis* provide coherent explanations for important aspects of virtuality. These include contrast with the "real world," meaning of simulated images and processes, immersion in them, and virtual interaction. Here I briefly consider a higher-level view of how this approach might contribute to understanding the broader interaction of interdependent social and technological phenomena using virtual teams as an illustrative example.

For virtual teams it seems reasonable to assume that congruence [6] across team members' frames is important. This entails isomorphic organizational premises—or linkages between their frameworks of understanding and their external activities—that ultimately require some version of parallelism in the material aspects of their ICT. This suggests the possibility of viewing two separate layers of interaction, one social and one technological, each with its own (separate) logic of interaction, and also interacting with each other at numerous points. The two layers can be understood as two sides of a coin. One side is technological interoperability; the other side involves social practices effecting 'translation' of keyings. Both layers or sides are distributed geographically, and joined together at various points (locations) in various ways.

On the technological side, interoperability (of ICT) is important because it affords a material basis for congruence across organizational premises of team members' frames. On the human/social side, frame congruence across dispersed team members can be understood as achieved via translations shaped by a transitive set of interlocking obligations across locations. This view highlights the importance of complementarity between social practices that shape meaning (frames of understanding) and individuals' involvement in these practices.

How congruence between frames of understanding and frames is actually achieved when team members are dispersed, and how this congruence is maintained or repeatedly reconstructed in parallel across space and time, are issues that Goffman's *Frame Analysis* does not address. One of the prime limitations of his approach is that it relies heavily on conceptual typifications [15] and provides little

explanation (apart from references to ritual and social convention) of how people ascertain which frame is appropriate to use in any specific situation. That virtual teams actually work as well as they do testifies to the diligence and creativity of individual virtual team members who are willing to initiate the phone calls and the face-to-face meetings required to bring their frames into congruence and create/restore interlocking obligation, compensating for its attenuation via mediated technology.

One promising approach for explaining how *Frame Analysis* is integrated with practices is the ethnomethodological approach. Originating in work by Harold Garfinkel, who helped to inspire Goffman's development of *frame analysis*,[12] the ethnomethodological approach has been identified as a good complement to it [15]. Furthermore, the ethnomethodological approach has already shown promise in the study of computer-supported cooperative work [16,17]. The combination, therefore, may well afford a fruitful way ahead.

## 7 Conclusion

In this paper I have argued that Goffman's *Frame Analysis* offers a powerful approach (or in Goffman's terminology a "key") for understanding important aspects of virtuality from a situated perspective. Goffman's terminology and concepts afford considerable potential for integrating the study of virtual action and interaction with much of what is already known about social action and interaction more generally.[13] His frame analysis provides language and concepts for distinguishing virtual worlds from each other and from real worlds, in a way that is consonant with important aspects of human-computer interaction. It also helps to account for the phenomenon of immersion in virtual worlds while at the same time it is better suited for understanding both co-present and mediated social interaction.

Specifically, the contrast between the "real world" and virtual worlds can be understood through Goffman's concept of *primary framework*. How people interact with simulated images and processes can be explained via Goffman's notions of key and keying. The phenomenal experience of immersion while using ICT (especially ICT "engrossables") is well characterized by Goffman's description of *involvement*—including both cognitive and affective components. And virtual interaction (as in a virtual team) can be accounted for with Goffman's notions of *interlocking obligation* and parallel or complementary *organizational premises*.

Possibilities for further research utilizing these and other aspects of Goffman's frame approach are significant. First, more thorough analyses of the relation(s) between co-present (social) interaction, human-computer interaction, and computer-mediated (social) interaction should be carried out. Such research may lead to clearer categorization of similarities and differences between these alternate forms of

[12] Anne Rawls, personal communication, March 6, 2007.

[13] Goffman's work underlies and informs much of contemporary sociological and social theory [18].

interaction. If this much proves valuable, the approach could then be further extended to clarify how these different kinds of interaction can be portrayed in work on organizing practices involving ICT such as Yates and Orlikowski's [19-21] genre approach and Orlikowski's [22] work on scaffolding, as well as in Actor Network Theory [23,24]. While the road ahead is challenging, selected aspects of Goffman's *Frame Analysis* offer an approach worth pursuing.

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