

# **A Sociotechnical Conjecture about the Context and Development of Multiplayer Online Game Experiences**

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## **ABSTRACT**

The advent of multiplayer online games brings new actors into the development scene and redefines traditional roles and interactions. Anchored on studies of the role of context in human interaction we argue for a view of multiplayer online games as sociotechnical constructs, and of their “development” as an ongoing process of context engineering. By recognizing the new interplay of actors that extends from design time well into play time we attempt to transcend the technological determinism of approaches that focus on technological devices as determinants of the game experience. Using Actor-Network Theory constructs we propose an alternative perspective that takes context as the development object and technical artifacts, social and game rules, roles, playing and organizational strategies and practices as media designed to influence the emergence of the heterogeneous sociotechnical networks governing online game experiences. Finally, we outline challenges for the innovation of designer and player roles.

## **Keywords**

Multiplayer Online Games, Context Engineering, Actor-Network Theory, Sociotechnical Development Approach

## **INTRODUCTION**

By reflecting on the complex network of factors involved in game design and production, financing, marketing and distribution, and associated interests vested in hardware, software and marketing infrastructures, we can begin to understand the creative grips in single multiplayer games. Current drivers and general conceptual infrastructure underlying the game production communities nurture dogmas about technical achievement and aesthetics of realism. Recent proposals mainly reify older game ideas or attempt to translate other work (such as cinematic) into game format. Yet, the advent of multiplayer online games brings new actors into the development scene and redefines roles and interactions, especially if we think of the variety of behaviors that can influence the course of events in online game experiences and the very notion of the gaming experience. The new interplay can extend what was generally understood as development from design and construction time and well into play time. In this article we intend to reflect on these issues and build foresight into the emergence and constitution of game experiences by means of an inquiry based on the notion of context, its making and its role in the emergence of these experiences.

**Proceedings of DiGRA 2005 Conference: Changing Views – Worlds in Play.**

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To this effect we will be exploring a contextual perspective based on Actor-Network analysis. Actor-Networks are sociological constructions that attempt to translate and explain socio-technical phenomena, their historical origin and evolution. This is done by looking into the interactions between *actants* as networks of heterogeneous actors, human and non-human constructs. Actants (or simply actors) represent inscribed interests and their actions or reactions are translated through network alignments, favoring or opposing programs of action. With these and other constructs we will attempt to reveal some of the forces underlying the unfolding of multiplayer online gaming experiences and justify conjectures about their development through considering context as, both, the designer's and the player's media.

Following our lead on context next we will begin by a short brief on studies of context mainly from anthropology and linguistics. Then we will situate our problem on interpreting the context of multiplayer online games by using the Actor-Network framework and then we will present some conjectures for game development from the acquired perspective.

## THE PROBLEM OF CONTEXT

### Context in Human Activity

In a seminal essay on "The Problem of Meaning in Primitive Languages", Bronislaw Malinowski (1923) elaborated two important themes that were to figure prominently in the study of context: 1) that language is embedded within a context of situation; 2) that language must be conceptualized as a mode of practical action. Such a perspective on language as "an indispensable element of concerted human action" led him at a later date to articulate a view of meaning as something embedded within trajectories of action, and the word as a means of bringing things about, a handle to acts and objects. He also told us that "Meaning [...] does not come [...] from contemplation of things, or analysis of occurrences, but in practical and active acquaintance with relevant situations. The real knowledge of a word comes through the practice of appropriately using it within a certain situation." What we think this anthropological text means for the study of game development and of the play experience is a need for a firm grasp of the role and uses of context, or the lack of it, in play activities.

The concept of context resists a single technical definition and poses significant challenges as one proceeds from one research area to another. Sharfstein tells us about his working definition as that which envelops the object of interest and that by its relevance helps explaining it [Sharfstein 1989]. And adds that by definition context is what is relevant for what we aim to explain and excludes all other however near it may be found but that does not offer the required explaining power. The author proceeds explaining, making a difference between contextualism, relativism and skepticism in terms of the degree of argument and elaborates on what he calls the problem of context. A purely philosophical approach would be caught between an illusion that full knowledge of circumstances would enable perfect explanations, but, on the other, such omniscience would be logically inconceivable, since knowledge itself depends on limiting conditions that make it worth, and as such omniscience seems humanly improbable.

From the Latin *contexere* [Dilley 1999], which means weaving or joining together, alluding to a process of weaving words to produce elaborated speech, the search for context would be the establishing of connections between elements enabling the construction of explanations for a situation. Dilley tells us that context has long been a key concept in studies of language and anthropology. And adds that for a time its use remained mostly tacit and, in the attempt to produce contextualized versions of their knowledge, several authors from cultural anthropology forgot about the nature of context itself and considered it static, clear and self-

sufficient, even self-evident, requiring no extra dueling. Fabian, in [Dilley 1999] says those studies reveal the underlying positive view of context. Yet, context is itself an apprehension subject to interpretation prior or after that of the contextualized object. The context is itself a choice and, when explicit, a human construction. Context is thus part of the problem in the way that we chose to interpret our own rules. There are thus, at least, two approaches to context in anthropology: thinking about it as connections to be established by the interpretative act; and thinking about it as object of study, itself subject to analysis. To this respect, Dilley cites Wittgenstein's word of advice, not to seek for the meaning of context, but for the uses of the concept.

### **Approaches to Context**

Introducing a set of studies of the role of context [Goodwin, Duranti 1992], Goodwin and Duranti refer to several understandings of context and its use. The most common would be the dichotomy between focal event and context, focal event being the object or event of interest to be explained and context the environment that is brought into the explanation. The context is thus a frame that surrounds the event being examined and provides resources for its interpretation. The notion of context thus involves a juxtaposition of two entities, a focal event and a field of action within which that event is embedded. A relationship between two orders of phenomena that mutually inform each other to comprise a larger whole is absolutely central to the notion of context. From a comparison with the relationship between organism and environment, from cybernetic theory, a parallel is drawn on the problem of delineating where the system ends and where the environment begins, that is, what is the context that informs a certain behavior.

Making use of a Bateson's metaphor (1972) of a blind man with a stick crossing the street, the authors expose a number of issues central to the analysis of context. First, the importance of taking as a point of departure for the analysis of context the perspective of the participant(s) whose behavior is being analyzed. What analysts seek to describe is not what they consider context, but rather how the subject himself attends to and organizes his/her perception of the events and situations that he is navigating through. Second, the metaphor illustrates how what a participant treats as relevant context is shaped by the specific activities being performed at that moment. Continuing, Goodwin and Duranti, explain how "one of the great difficulties posed in the analysis of context is describing the sociohistorical knowledge that a participant employs to act within the environment of the moment". Moreover, "in so far as participant's articulation of their environment is shaped by the activities of the moment, the context that is relevant to what they are doing changes radically when they move from one activity to another". "The dynamic mutability of context is complicated further by the ability of participants to rapidly invoke within the talk of the moment alternative contextual frames". This is one of the key insights from Gumperz notion of contextualization cues.

Concluding, such phenomena demonstrate the importance of, "first, approaching context from the perspective of an actor actively operating on the world within which he or she finds him- or herself embedded; second tying the analysis of context to study of the indigenous activities that participants use to constitute the culturally and historically organized social worlds that they inhabit; and third, recognizing that participants are situated within multiple contexts which are capable of rapid and dynamic change as the events they are engaged in unfold". Within social situations a key constituent of the environment are other human beings, who are active agents with their own plans and agendas. People become environments for each other. Of the themes being addressed in [Duranti, Goodwin 1992] is the capacity for human beings to dynamically reshape the context that provides organization for their actions within the interaction itself. The dynamic and socially constitutive properties of context are inescapable. "Each additional move within the interaction modifies the existing

context while creating a new arena for subsequent interaction". Moreover, as strategic actors, individual participants can actively attempt to shape context in ways that further their own interests. In so far as the processes to which context is relevant are social and interactive, one party's proposals as to what should constitute operative context might fail to achieve ratification by others. Miscommunication and active challenges to a proposed redefinition of the situation are possibilities. In brief, context is viewed as a socially constituted, interactively sustained, time bound phenomenon.

### **Context and Play**

Why we should care for context in the analysis of the multiplayer game experience? As a phenomenon fundamentally sustained by human interaction we must try and understand the role of context and the uses of contextualization in the regulation of such mediated play activities. Such insight could potentially prove useful in the design of media for such interactive purposes. As we understand it the creation of a game means the creation of a special kind of context. This context is populated with contextual elements of both a technical and social nature. We have tools that favor specific interactions in time and place while discouraging or impeding others. These tools are part of an ecology of other artifacts such as the game rules and accepted practices, but also of unspoken or cultural elements and language itself. Each player engages in the game by dwelling within a context (a story or other abstract device) that permits her to make sense of interactions and decide on future courses of action. In the process context is rewritten to an extent frequently predetermined in the design of the game system. These limits can be seen as imposed by the game definition or voluntarily accepted by players and are intended to keep the game within semantically consistent grounds. If, for instance, a game permits such gameplay as to require social interactions to be undertaken by players in order to form teams or guilds, to compete or collaborate, to achieve certain goals then it provides a certain layer of context for the human interaction but the players retain the ability to largely influence the unfolding of the context or activities they engage in. In some cases this may go beyond tactics, to mean the proposal and decision on the goals themselves. In this respect, the design of the game can be directly related to the design of the context for play and of the instruments to interact in that context, which will anticipate, further or counter specific programs of action. Playing is thus an activity pervaded with acts of contextualization as players seek to influence each others actions and their results, and even the shared frame of reference for their interpretation.

## **THE CONTEXT OF MULTIPLAYER GAMES**

### **A Brief on Actor-Network Theory**

A perspective of context as social network offers the ability to build understandings of the context based on interactions between actors. Actor-Network Theory (ANT) offers a language base for those wishing to exercise explanations of social phenomena supported on relationships between actors as the constitution of the actors themselves. ANT enables the exploration of both micro- and macro-sociologies of the actor as network and of network of actors, as a minimal ontology for an ethno-methodological approach [Latour 1999]. ANT enables the analysis of sociotechnical contexts that views technology not as neutral to human values and interests but as influencing the relations of power and of the people with their environment [Callon 1991]. Latour [1991] explains the use of the sociotechnical network as a model of the ensemble of relations that influence but do not determine a program of action.

The ANT body of knowledge grew from diverse sociological studies of science and technology in diverse domains and fits a basic terminology that have enabled the construction of elaborate explanations of sociotechnical development trajectories. We will only make here a brief review of the concepts that we will use. The central concept is that of the actor or

author of inscriptions that get translated by other actors. By considering the actor as a network or center for translations that get influenced by the relationships established with that node and their direction, this "theory" opens the ground for heterogeneity. Both human and non-human actors may influence a program of action by their translations of each other's inscriptions. Neither pure human voluntarism nor technological determinism is assumed, but only the interplay between actor's wills and/or inscribed interests will be brought into account for the emergence of complex social reality. The force and interpretative flexibility of newer inscriptions, within previous alignments, influence their translations by other actors. Alignments of relationships may provide stability regions or translation regimes that foster specific translations and programs of action.

Akrich talks about inscriptions and translations in the context of design [1992]. Inscriptions refer to the way designed artifacts carry with them patterns of use that foster specific programs of action. From the standpoint of the designer, these instruments are vehicles of his/her expression that will intervene socially when inserted in sociotechnical networks. An engineer becomes also a sociologist, moralist and politician, although apparently involved in mere technical matters. Latour [1991] tells us that trajectories of development can not be viewed in a single social context. One must try to understand the simultaneous production of "text" and "context". Any division between a social component and a technical or scientific production is necessarily arbitrary. The same author argues that the only non-arbitrary division should be between successive versions of statements (i.e. technical objects) more or less loaded with inscriptions and translations. And that we should learn to follow and document them.

For each technical trajectory there is a symmetric trajectory in context, corresponding to the transformations on the relationships from diverse actors with the focal object. Such an exercise would consider a set of relationships of variable geometry in interaction with an object also of variable geometry. Both suffer transformations in a historical process. Against visions of society or object as immutable, ANT proposes a view of a path of innovations where all actors co-evolve. This dissolution between what changes and the environment in which it changes makes more flexible what can and can not be done, realizable. That difference becomes a matter of positioning on a developmental trajectory. Irreversibility becomes a matter of alignment of interests between human actors and intermediaries. Nothing is intrinsically realistic or unrealistic because social reality is not a finite state but a phenomenon always requiring maintenance.

### **A Sociotechnical Perspective on MOG through ANT**

Multiplayer online games, whatever genre, possess interesting contextual characteristics that make them unique interactive phenomena. In fact, we may argue that if these characteristics are not present then we are not before an event of this kind. From the outset, multiplayer games are interactive systems that: have certain intended enabling and limiting conditions for action, ascribe a set of roles and expected behaviors, and propose a legitimized basis for the interpretation of players actions, frequently a story or a metaphor. In addition, the course of the game implies, to a lesser or greater degree, that players interactively maintain the context of gameplay. Some genres (like with some Role Playing Games) may even consider that players negotiate goals and coordinate action as part of the definition of the game context. In this case the context of the gaming experience accumulates all gaming history from the beginning of the game. Other game genres provide a strict game system, where the players rewritten part of the context can be essentially described by the current game state – who is where and has what, etc. But even in this case a history of each player's tactics and collective strategies is also part of the game experience, as may influence this and other player's attitudes and behaviors towards each other, competition and cooperation.

A significant part of the multiplayer game experience is the ability a player has to proactively attempt to rewrite the context of the game for further action. Only a part of the context is prescribed in software. A player wishing to convince others to jointly go on a quest must strive to convince them to do so and in that argument will make use of the context of the game, possibly by proposing a specific interpretation, e.g., by persuading others of the benefit of that quest for getting out a currently dangerous situation. Current game context is as with other forms of human interaction (such as the simpler forms of dialog) a socially constituted, time-bound and interactively sustained phenomenon.

When interpreting the context of multiplayer online games through the ANT lenses, initial or ongoing storytelling can be understood as a device that is being mobilized by making a series of coordinated inscriptions, to attempt to establish a translation regime for player's motives and subsequent actions. Through these inscriptions, the designer attempts to establish the basic actor-network that will govern the game and interpretation. In this network she will inscribe actor-networks such as the arena, game rules, player roles, game devices and other mediators that will enable a player's interpretation and interaction within the game system. This network will constitute media for the designer's expression and later be the media for the players' expression.

Game rules and the game arena – as actors – influence players' actions by favoring specific programs of actions while limiting anti-programs. From a utilitarian perspective, it is the game designer's prime interest to produce a network of rules and other mediator devices (setup story, concepts, roles, actions, instruments, etc) that enable action programs that players will find interesting to pursue, i.e., that make a good game. Together the mediators must form an aligned network, or infrastructure, that enables certain interpretations while inhibiting others. Diverse media have diverse influencing forces. E.g., spoken and software enforced rules are inscriptions with diverse forces. Spoken rules may present a greater interpretative flexibility – they can be bent or forgotten, on occasion. Software enforced rules might be impossible for the player to circumvent. At the time the game system gets “deployed”, the designer may still be unaware of “design holes” or weaknesses that may subsist in this network which may enable player's actions to tilt the intended fairness or gameplay, by mobilizing other actors from or into the network. This behaviour, when legitimized by a broader community of players, may become a dominant interpretation within the game, redesigning the game itself.

Roles also act as mediators for they are concepts that network with specific kinds of interactions and expected player behaviors. By defining roles and appealing to common cultural icons and relationships the designer weaves a network with the players own cultural network. That, in turn, enables the players' interpretation of the game context and formulation of purposes and action goals within that context. Thus, to an extent, the designer's role is that of setting up a context for action, by weaving a network of heterogeneous actors that can mobilize related networks to form the interactive context. A designer's game is a network that models the context for the game and gets translated to a concrete instance as players take over and interpret their roles.

A player's actions (the play-time production of “text”) are inscriptions contributing to the ongoing, interactively sustained, reformulation of the game context for subsequent actions. Our notion of interactivity depends directly on the player's ability to change the context for action through action itself, and not through some other meta-device. Each player's actions then get translated by other players – accepted, ignored, undone, legitimized or not. Thus common context will be a collective emergence through negotiation. Changes in context are

contextualized by the previous negotiated context and thus rewriting context is also required to be an act of sensemaking.

At this point, we can identify to simultaneous dimensions to game context, the individual and the social. On one hand, the idea of the game experience results from the subjective perception and interpretation of the emergent interaction patterns, from each player's specific contextual standpoint. Each player has a partial view of the game experience contextualized by his/her individual motives and beliefs and it is in that context that they refer to, or report on, their multiplayer gaming experience. On another hand, aligned actions reinforce each other and the influence of the actors involved, the force of their inscriptions, and through them their version of the game context. A version, if legitimized – either enforced by a legitimizing actor (e.g. the gamemaster) or collectively adhered to, becomes the infrastructure for further interpretation and the collective construction of meanings.

This discussion put the Game Designer's role in a new light. There is a design-before-the-game and there is a design-in-play-time. A designer's actions could be extended to include managing the running game experience itself. A gamemaster's action during the game may be more than arbiter, and can assume the role of author of the gameplay. A reinterpretation of player actions is also in order. A player's actions are part of the experience for other players. To that extent each player is actively contributing to the reinterpretation of the game design and decisively influencing the emergent experience. As such, the players are authors in their own right, which may be easily illustrated by citing examples of situations when you loved to play with someone or of situations when someone chooses to annoy everybody else with irritating online behaviors or simply by being unable to act their part at some given moment. As such, playing is authoring and play-time design a competence that can possibly be mastered to the point of becoming a professional role by itself.

### **MOG as Context as Media**

From this discussion we arrive at a perspective of the multiplayer online game as a specific kind of context which presents the full range of contextualizing opportunities common to other interactive human enterprises. It can also be understood as a medium for expression that may beget a reformulation of designer and player roles and even newer roles. The game as it is commonly referred to is no longer a final state but a proposed context model underlying further interpretation. Player's reinterpretation may be unavoidable and might as well be productively channeled to the benefit of the overall game experience. We will now outline some of the themes and challenges that come to the fore with the previous discussion on the context of the multiplayer game experience.

## **CONJECTURES ON THE MAKING OF GAME EXPERIENCES**

### **Games as sociotechnical phenomena**

We must begin to consider a perspective of game design that includes the social interaction between human actors and of their interaction with mediating artifacts (physical, mental, social). Such a perspective must consider this interaction's influence on the emerging organizational patterns of behavior, and the ongoing social construction of the game experience and context. For this we should consider the perspective of the heterogeneous sociotechnical constitution and genesis of those collective patterns of behavior, which we can choose to understand as the ultimate object of game design efforts.

### **Gameplay as emancipatory movement**

Departing from a critical and subjective perspective of the game experience, but not restricted to it, e.g. recognizing the materiality in mediation by physical and mental artifacts (such as in

software), game development could be guided by an emancipatory role. Games can be understood as contexts for player recreation and learning that further an essential emancipatory motive: to safely experience an alternate otherwise complex or impossible context and maybe become a good performer in it. This context may be entirely fictitious or model a real situation, which from this standpoint seems irrelevant, only presenting different kinds of emancipatory opportunities. But "designer as emancipator" may be contradictory. A participatory exercise, such as with play-time design, difficult as it may be, could become key to player self-development as true emancipation. Gaming could be viewed as an instrument and not an end in itself. E.g. play for learning, for self-awareness, for self-esteem, etc.

### **Human and non-human actors – heterogeneous symmetrical interactionism**

If we recognize the materiality in the diverse forms of mediation, in helping shape human action, we will be driven to consider a middle ground between human voluntarism and technological determinism. Neither human action is the expression of free will, independent from their technological infrastructure, nor will the artifacts fully determine the outcome of human actions. Both carry action programs with them but also some degree of flexibility to translations in actual circumstances. In the human social dimension, mediators (culture and values, social rules, rituals and practices) are a constant design challenge and even their utilitarian adoption usually requires some sort of negotiation. As yet, the social competence dimension seems a broad avenue for game design conjectures and can become a central aspect of multiplayer games. Especially, if not left for chance but considered in integration with the other mediators supporting the game experience. E.g., the formation of game communities and the development of social competences can become a goal in the game, relieving the common view of gamers as anti-social.

### **A contingent view of development as flux and improvisation**

The engineering view that proposes a strict separation between the design stage and the exploration stage of a game experience requires reforming and innovation in methods. If we consider the adaptations that may go on during game instances we may begin to consider different designer and player roles. Designers may wish to engage their own creations at play-time and consider what next move they wish to take to further their development goals, contingently. Since we understand development to be a complex phenomenon its result could be understood as an emergence and our actions only attempt to influence what emergence we would like. Not to design emergence, but what we guess to be its underlying or influencing conditions. That's one reason to think of design as producing the context for the game experience to unfold and of the player to unfold it as interpreter.

### **Models can support expressions of intersubjective understandings**

If we want to pursue the goal of emancipation through democratizing game development, then we will have to find ways for the diverse actors, conceptors, effectors and users of technology to materially express their views and build their own relationships with the media and the process. To achieve that, we will need to model the context of game experiences as expressions of intersubjective understandings: the common ground that enables the collective constitution of meanings and interpretations. As common natural language is generally ineffective to the technical endeavor, we think a common disciplinary language for game modeling remains a challenge. Currently the previous sharing of technical languages is still a requirement for game construction, and there can be barriers between disciplinary traditions, such as media, arts and computer science.

Models make intersubjective constructions explicit and debatable. We think of models as expressions of past, present or future realities, as currently accessible referents to absent social localities, as shrink-wrapped versions of the "real phenomena", but as yet possessing

the relevant relationships and dynamics we wish to acknowledge and reason with. When built on top of shared languages, models enable the construction of intersubjective, explicit and debatable understandings. Then we can collectively think of game experiences whatever our positioning may be. Through the development of languages for game modeling we could work towards a more collaborative trans-disciplinary game design community.

### **Evaluate transformations, not just artifacts**

If we can think of game development as a way to achieve transformations – individual and social – and if we can find a way to value those transformations in relation to what they enable further, then we will have more reasons to rethink development beyond simply designing and building technical artifacts. E.g., if we consider the value associated with learning to perform in some complex setting or use some technology then new development paths may open before us. Those possibilities can motivate bigger transformations of the general attitude towards games.

### **CONCLUSIONS**

We have considered the impact of the role of context in understanding the multiplayer game experience and multiplayer game design, especially from a sociotechnical perspective based on the Actor-Network language. Based on that discussion we guided the reader to consider a notion of player as author and of play as play-time design in the multiplayer game scenario. We then proposed an understanding of the multiplayer game experience as an emergence from the interaction patterns between players and the role of design as that of setting up the conditions for action. As such, social interactions become a central part of the game, as they can significantly influence the outcome. Some design challenges are drawn from this point onwards that we are now trying to consider on our current research efforts.

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