THE GAME IN THE MARGINS: Possibility Space Between Research and Practice

Cole Wrampelmeier
American University
4400 Massachusetts Ave
Washington, DC 20016
(202) 885-3947
wrampelm@american.edu

ABSTRACT
The field of game studies is an established field of some decades but young enough for scholarly opinion to push the frontiers of the field further. In this exploratory discourse common threads of debate continue to appear in the efforts to define unique traits and elements of games, particularly video games. This paper examines the methods of discourse in the field of game studies, drawing attention to the methods by which claims about games are defined. Using previous models of categorization and a nominal approach to defining elements, this paper seeks to create a tools that allows for critical analysis across opposing views of game studies. This paper proposes changes to current methods of scholarship, eschewing static definitions for fluid understandings of game elements that can be understood, not only by their action, but also by context.

KEYWORDS
Nominal, definition, hermeneutic, procedural, play, mechanic

INTRODUCTION

This paper will review the previous studies that categorize and identify core elements of video games, from proceduralist and formal design perspectives to performative and play centric arguments. The divide between these perspectives leaves a rich space to explore with new methods for evaluating how the designed elements of games influence, or are influenced by, the play experience.

Indeed this divide appears to be local to the academic study of games rather than any design or consumer practice. Yet design begins with basic assumptions and this paper seeks to critically bridge the difference in systems and play thinking by using their arguments not as discrete opposing views but as components of understanding. As will be reviewed below, claims on core elements of game tend

to be narrowly defined but cannot exist as isolated elements. Games are complex multidisciplinary efforts that ask designers, players, and scholars to accommodate multiple modes of thinking. Unlike the subject matter, scholarship within game studies remains scattered and isolated in exploratory efforts to define new boundaries (Järvinen, 2007).

Accommodation is a cognitive state that players experience when they engage with games. Also known as **cognitive disequilibrium**, accommodation is a process where an existing model of the world must shift in order to accommodate information that directly contradicts or does not fit within the previous model (Van Eck 2006). This player phenomenon provides an example for game scholarship, theories and models serve as useful frames for discussion but the academic study of games must be able to accommodate multiple, often conflicting, models of understanding.

The process of accommodation is not meant to be a call for scholars to simply expand their writings to consider the entire possibility space of games. There are many times when a specific element of game design, culture, and play must be studied in isolation. However, the broader discourse in game studies can gain from fluid definitions of game elements as the context for each element can radically affect the understanding. This paper calls upon the work of Jonne Arjoranta to frame an alternative method for defining game elements, one that uses nominal definitions of game elements, definitions meant to be recycled and re-defined as needed for their context.

Ultimately this paper is an attempt to synthesize the conflicting scholarship with a methodology for studying games in a critical and adaptable manner. The tool created at the end of this paper is used as a case study of two similar games to explore how the mechanics and aesthetic experience are related. Games are ultimately created by the designers, how they are played is an open question but the methods for studying the design elements can be formalized and understood. As with any formal categorization, this tool is inherently problematic as it seeks to define game elements without being able to capture every contextual and mechanical consideration. The goal of this paper is to supplement game studies with a tool fluid enough to accommodate an examination of games which both deconstructs the mechanical structure and highlights the context of play.

DEFINING DEBATE IN GAME STUDIES

The debates discussed in this section are claims and dissents that shape the common language of design practice and academic discourse. This is not meant to be an exhaustive literature review of all pertinent works in game studies.

Rather these are specific arguments that are held in opposition, thus they provide a case study for attempting to bridge gaps in discourse. Contextualizing, instead of confronting, claims in scholarship is the goal of this paper.

Before discussing the arguments it is necessary to note that interactivity is the common denominator across all the game studies works referenced. Indeed the unique interactive nature of games is a widely, though not universally, agreed upon trait of the field. The question put forward in the examination of these works is how do the distinct focused studies of games interact? As will be shown below, many authors follow up their claim with the concession that games are complex systems with many important moving pieces.

Structure and Procedure

Commonly understood definitions are crucial to establishing a field of study; as a young field game studies has the unique prospect of staking claims on terminology. An early task in game studies has been to define games, their elements, and thus their boundaries. There are many examples of how the border between game, play, and the 'real' world is ill defined and porous[1].

There are design concerns attached to rigid structures that define games and game elements. The term "magic circle" has found itself lined up in the crosshairs of many academic papers. The target painted on this term prompted response from Eric Zimmerman, where he questions criticism not as invalid but as symptomatic of the binary thinking in game studies' intellectual responses. Zimmerman notes that research in the interdisciplinary field of games studies adopts a limited point of view to deconstruct arguments and specific elements of an argument. His response to criticism highlights a need for methods of discourse in game scholarship rather than claims and counterclaims about specific elements of games studies (Zimmerman 2012).

Within the borders, whatever they may be, of a game the structured approach to defining games provides structured examination of the individual game elements. Entirely within a game we have constructed methods for defining how behaviours and representations interact. Defining games and their elements are necessary for advanced study yet the debates in the field highlight the academic disconnect over how to proceed with this study. A focus on rules and mechanics empower designers to "add meaning and enable actions" as Jesper Juul claims (2003). Designing from the systems perspective leaves the designer adrift from the experience of the player. Elements such as music and imagery of a game are

[1] See Fig. 3 Juul's conveniently formatted table for a timeline of games' definitions

powerful tools for evoking emotions in a player and are not "subordinate" to the rules of a game (Wilson 2012).

Claims about games as representations are a key foundation of the proceduralist position. In *Persuasive Games*, Bogost writes "computation is representation, and procedurality in the computational sense is a means to produce expression"(2007). Claims about the computational power driving the expression of a game inherently draw the focus away from the player and toward the process with which the player must engage. However, this focus on process in games allows for the development of what Bogost calls **procedural rhetoric**, "the practice of using processes persuasively...its arguments are made not through the construction of words or images, but through the authorship of rules of behavior" (Bogost 2009). Decisions in design are made with a purpose towards leveraging the power of video games to deliver a message, through the authorship of procedural - computer simulated - behaviours. Such a focus is not without criticism but this systematic design draws attention to the ways in which a game's systems frame the possibility space of play.

Play Not Procedure

Criticism over the proceduralist position reveals shortcomings in an absence of player agency and a lack of consideration for that agency to break out of the system. Broadly, the criticisms of proceduralist positions are a critique of over designing the play experience and creating a tightly controlled system that limits the player. Discussed below are considerations specific to the development of this paper's tool set.

Douglas Wilson critiques the proceduralist position as one that ignores the possibility that games are a context for play rather than an object of play. He makes the claim that the "systems-centric" perspective is reductive to the design process as the claims about digital interactivity forget that humans are interactive agents as well (2012).

Wilson's play centric approach raises the question, what is the level of interaction allowed by a given mechanic? What is an acceptable level of system constraint on the player? This is a critical question as the interactivity of a game is not only unique to the game but also a defining trait of the player, who must interact with the mechanic. This interaction moves between the game as a structure and the game as a player but is not the only way in which game as structure interacts with the player.

Another perspective from Wilson is the idea that games serve as an alibi or an excuse to act out, a convenient reason to behave irrationally and break out of

social norms. This is an early idea explored by many other scholars but is presented as a design tool here by Wilson (Calleja, 2010; Huizinga, 1955; Sutton-Smith, 1997).

Common to most play experiences are the moments when a player disregards rules, narrative, or any 'rational-actor' motivation and just acts for the purpose of enjoying the action. Wilson finds that games need not merely be representations but can also be festive occasions of play.

Miguel Sicart offers a direct and pointed critique of Bogost's proceduralism in his article *Against Procedurality*. Sicart's argument looks at games as providing space that affords play, similar to Wilson's ideas that games should offer a context for play. Second, Sicart argues that proceduralism forgets the player or outright works against the player:

> Proceduralism often disregards the importance of play and players as activities that have creative, performative properties. In this sense, the meaning of a game, of any game, lies in its rules, as presented to players who experience them (2011).

Such criticism directly targets the exploration of mechanical expression, for Sicart the mechanics are most certainly not the message and authorial intent to say otherwise limits the expressive power of the player. But similar to the question raised by Wilson's play centered approach, what amount of control over play should the designer exert upon the player? Should mechanics serve as structure to guide play or a bare minimum to facilitate play?

What the examination of this debate reveals is a need for critical conversation that links the play experience in games with the methods and techniques for crafting these experiences. In film we have highly technical productions that focus on delivering an aesthetic experience for the viewer. Like games, film contains common techniques repeated in various contexts to deliver, or attempt to deliver, the desired experience. Bogost notes that his claims of games as procedure is as much an aesthetic view as that of the play focused writers such as Clint Hocking and Douglas Wilson (2012). It is with this perspective, games design and game studies as an aesthetic practice, that this paper will attempt to connect these two schools of thought with the practice of game design.

This paper returns to Sicart's *Against Procedurality* as providing the critical question that motivates this paper and the tool set discussed below. "perhaps their biggest problem is that they [proceduralists] are ill-defined, at once pretending to be art statements, theory, and perhaps even scholarly work."

Debate over defined positions in game studies affects the ability to have continuous discourse in the field. There is much room for researchers to expand the frontiers of games scholarship, yet there is a lack of infrastructure for traversing the already explored space.

Wilson hints at this margin between practice and exploratory scholarship at the end of his essay. “There is something crucial that transpires in those in between places, where computational systems run up against other media forms and situated practice.” This paper seeks to provide a method for exploring those in between places by opening discourse on how the formal elements of games interact with play.

EXPRESSIVE DEFINITIONS

A critical problem with attempts to define game elements is the rigidity of definitions. The claims made by the scholars above are not inherently problematic due to their substance but suffer from their isolated definitions. Important to note is that all scholars referenced have pointed to the multifaceted nature of games, noting that rules and procedure must work with players and context (Sicart, 2011). However, the methods that we use to define game elements may be a limiting factor in the discourse on games. Alternatives to commonly strict definitions can be found in Jonne Arjoranta examination of Wittgenstein’s *Philosophical Investigations* “language-game”, family resemblances, nominal definitions, and the hermeneutic circle

This alternate perspective of definitions is useful for framing our understanding of mechanics’ relation to the aesthetic experience of play, nominal definitions may better suit the field of game studies than traditional ‘real’ definitions.

The irony of discussion definitions is that one must define the definition, here we refer to the use of ‘real’ definitions to be those that use a word to convey the essential attributes of an object. Scientists are primarily concerned with the ‘real’ definitions of the objects of their study.

Nominal definitions are fluid constructs that are social and thus vary based upon the context in which they are invoked. This context-sensitivity means a nominal definition changes over time and is not always a representation of the object itself but is an expression of that object in a given context (Arjoranta, 2014).

Arjoranta finds a usefulness for defining games in Wittgenstein’s **language-games**, a method for understanding concepts based upon shared resemblances. The metaphor here is the physical resemblances shared by a

family, physical traits shared by family members are contextualized by the family members. The traits themselves are not defined as individual objects but as a shared attribute across the family.

When discussing games we run into difficulty separating any given trait, mechanic, object, or narrative from the surrounding context of the game. By using a nominal definition the specific element of a game can be examined in isolation or with any number of contexts, the elements do not have "essential features" but instead have "ways of speaking" about themselves (Arjoranta, 2014).

Important to note is that Arjoranta uses Wittgenstein's language-games to discuss how we define games, particularly how we separate video games from board games and play. However, the shared traits across games are useful for exploring the space between games and within any single game. Using this approach we have a framing method well suited for deep academic exploration of games, one that avoids rigid 'real' definitions in favor of a fluid context-sensitive discourse that adapts with the scholarship.

While such flexible definitions may not always be desired it provides a cyclical method for game studies by focusing on the discourse surrounding games rather than capturing a core definition. This process of defining and redefining our definitions in game studies creates a **hermeneutic circle**, a cycle where any final definition is merely the starting point for new discourse.

Understanding that discourse and definitions can operate as fluid constructs this paper build on existing definitions in game studies to examine the experience of play and attempts to connect such aesthetic experience to the designed elements.

Elements of Games and Play: Assumptions

The toolset developed for this paper sought to build on an immediately flexible understandings of game design. It is not surprising that Miguel Sicart returns to provide a fluid definition of mechanics for this paper. Despite his earlier criticism of the proceduralists, Sicart takes an object oriented approach to discussing the elements of game mechanics. Sicart defines game mechanics as "methods invoked by agents, designed for interaction with the game state". Clearly missing are any specific mentions of player, goals, or who exactly any actors or interactions are in this definition. This ambiguity suits the nominal approach of this paper as does the object oriented framing Sicart provides. Mechanics are seen as action taken by agents, either human or procedural.

Before moving on to the toolset this paper must acknowledge the work of Aki Järvinen, which serves as an spiritual, if not practical, guide to the tool set created. Järvinen's essay *Introducing Applied Ludology: Hands-on Methods for Game Studies* sets out to bridge the same divide in game scholarship that this paper explores, by connecting the systems focused theories to player based studies.

Järvinen's paper is thorough to a point beyond the scope of this paper but provides key foundational work. Attempting to strip bare the deep work done by Järvinen would not be compatible with the modest goals of this paper and would do a disservice to Järvinen's work. It is, however, important to provide notes on the influences from Järvinen.

(1) "Games as systems, i.e. dynamic wholes with interacting parts." I have thus avoided defining games as discrete units, this paper is concerned with exploration of the game elements. Järvinen's definition here captures the element focused approach of this paper and allows for ambiguity between game contexts.
(2) "Goals are present either globally or locally...thus game mechanics are either available either globally or locally". This distinction speaks to the sophistication of Järvinen's method, the exploration of a mechanic has multiple levels of influence. While the author agrees that such depth in games is present, observable, and important to study, the goals of this paper are to provide a high level tool to guide discourse in game design and studies.

Two theories helped to complete the toolset, Nick Yee's adaptation of Richard Bartle's taxonomy of player types and the Mechanics Dynamics Aesthetics approach presented by Robin Hunicke, Marc LeBlanc, and Robert Zubek. Each system has it's limitations but allowed for a level of flexibility required of the toolset.

The MDA paper may seem an odd choice as the framework supports is design heavy, advocating the design practice of working from mechanics through dynamics and then settling on the aesthetic experience. While the design practice and specific definitions of the paper are not used in this paper, the design practice and three main elements of the title are core to the tool set. The mechanics influence player interaction and thus the aesthetic experience, but this is a two way interaction and desired aesthetics can be reflected in the mechanics (Hunicke et al, 2004). This is not directly lifted as an MDA model in the toolset below, the aesthetic experience is combined with the goal approach of Järvinen.

Bartle's taxonomy of player types is a method that breaks players of multiplayer games down into 4 types: killers, achievers, socializers, explorers (Bartle, 1996).

Nick Yee adapted this model in his paper *Motivations for Play in Online Games*, he chose to focus on three types of player motivation with sub-categories, see fig 1 (Yee, 2006). Rather than attempt to capture the aesthetic experience, something determined by the myriad game and non-game contexts, this paper uses Yee's categories of player motivation. These categories provide a certain level of specificity that remains broadly applicable.

Fig.1

Achievement	*Social*	*Immersion*
Advancement Progress, power, accumulation, status	**Socializing** Casual chat, helping others, making friends	**Discovery** Exploration, lore, finding hidden things
Mechanics Numbers, optimization, templating, analysis	**Relationship** Personal, self-disclosure, find and give support	**Role-Playing** Story-line, character history, roles, fantasy
Competition Challenging others, provocation, domination	**Teamwork** Collaboration, groups, group achievements	**Customization** Appearances, accessories, style color schemes
		Escapism Relax, escape from real life, avoid real-life problems

A final note about the assumptions made for this toolset, rules and mechanics have a history of varied demarcation, particularly among video games where the computer handles adjudication. Formal elements of games are not all made equal and it is necessary to distinguish between rules and mechanics. Again, Sicart provides a useful perspective: "rules are normative, while mechanics are performative" (2008). In this way rule that govern the world, collision mechanics and physics, may be understood as mechanics while limitations on agency are understood as rules, world size limits, speed and health limitations. Not all limitations are rules, an inventory system is a common through the examined games and limits to that inventory size work as a mechanical system with which the player engages.

METHOD

Two games were selected as a case study -*Minecraft* and *Space Engineers*- and played for approximately one hour each with notes taken using the tool sheet featured below, see fig. 2. Due to the solo play of the case study the **Social**

categorization of Yee's model was not included, despite both games support of dynamic multiplayer modes, analysis of this component will require a further analysis.

Play motivation remains a subjective determination but both remaining categories were assigned an attribute. As discussed earlier, players are capable of accommodating multiple modes of thinking about any given situation, players are able to quickly switch between multiple frames of thought. **Achievement** and **Immersion** were assigned a sub-category with the assertion that players primarily associate with one but can quickly switch to the other in the proper context (Van Eck, 2006).

Feedback and context is a section brought into the tool set from Douglas Wilson's examination of how context shapes the experience (Wilson, 2012). Mechanically, feedback provides an affordance for play and helps players understand their play experience. Aesthetically, the feedback places the player actions within a specific context and allows for player interpretation of that context.

Findings

Figure 2, in the appendix, shows the tool with a snapshot of the evaluations of games from the case study.

The practice of using the developed tool set in a play session with the two games helped to contextualize the actions of the game. Natural inclinations while playing are to focus on the action and the tool helped to reframe that action in the motivations for the action and the surrounding audio visual contexts of that action.

The relationship structure between mechanics needs a lens to focus, Järvinen looked at the tension generated between a given mechanic, secondary mechanic and goals. In the attempt to allow for ambiguous exploration of a mechanic this tool has have left too much open space for critical focus.

The use of motivations rather than aesthetic experiences was helpful in providing a focus for the formal elements, motivations served as goals and mechanics advance the player toward said goals. However, by redefining this relationship, how do the mechanics themselves determine goals, the use of nominal definitions reframed the relationship between the aesthetic goals and the mechanics of the game.

Most clearly needed is a scaled system to create an understanding of what each cell represents. A five point likert scale may lack nuance but can perhaps provide clarity on the effectiveness of feedback from audio systems and how closely each mechanic aligned with motivations, and vice versa.

CONCLUSION

There is a great deal of unexplored space between current design practices and scholarly research. The goal of the paper was to explore a tool that guides design practices and helps keep the aesthetic goals and mechanical structure of a game aligned. For the scholar the hope is to facilitate holistic research, the goal of this toolset was to provide a broad and simple method for re-aligning definitions and assumptions.

While this paper is an initial run with such a research and design tool there is a common thread through even the most damning critiques and grandiose claims; games are simultaneous constructions and experiences, with unique experiences and practices. Designing and researching must continue to press at the boundaries of understanding. The danger is that already explored topics may go unscrutinized for connections and value. Formal methods may not be appropriate for pushing at the boundaries of scholarship but a common practice for reviewing and re-evaluating existing research can offer a newly untapped vein of game understanding. Critical to new understanding is a reframing of the old through heuristic tools or nominal definitions there is a great deal of research to be explored.

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Appendix

Fig. 2

		Play Motivation		Feedback & Context		Mechanic		
		Achievement	*Immersion*	*Auditory*	*UI & Visual*	*Primary*	*Secondary*	**Notes**
Minecraft	Advancement	Discovery	Object selection and movement in the system. Sound cue when object is crafted	Position and state changes to object. Crafted object previewed before raw materials consumed	Crafting	Inventory	Discovery of rec	
Minecraft	Mechanics	Competition - even PVP challenging the monsters and elements is a decision made with any movement. Especially into unknown territory	customization	Object selection and placement sound. Specific sound when objects "dropped". Inventory opening "rustling" sound	Names of objects displayed on hovering over items in an inventory. "Stacking" of some block types, grouping many slots containing blocks into a single slot containing many slots	Inventory	Crafting	If an object is pl
Minecraft	Mechanics		Discovery	Sounds change based on terrain being traversed. Basic step sounds unless crouching whil walking, then no sound	Constant gravity effect. Different movement speeds and behavior on different terrains (water, sand, etc)	Movement	Object Collision	Different types
Minecraft	Mechanics		customization	Striking sound while breaking down object, unique to the object being struck. Distinct "pop" sound when harvesting complete	Block being harvested changes in appearance but size and "block" property remains the same.	Harvesting	Object Collision	Indicators of har
Space Engineers	Advancement		Role-playing: this game as a focus on logistics and proper planning. The crafting system, with all costs laid bare and all schematics available forces a role upon the player	object placement and pickup. Background sound of material "moving" through objects depending on action (crafting, refining, location transfer). If lack of materials for crafting an error sound is played	UI necessary to use crafting objects, no personal crafting. Full selection of all craftable objects, hover over icons displays amounts needed and owned for crafting objects	Crafting	Inventory	
Space Engineers	Mechanics		customization	object placement and pickup. Background sound of material "moving" through objects depending on action (crafting, refining, location transfer)	Multiple inventory screens for UI (ship, personal, station). Crafting components and raw materials represented with icons and amounts	Inventory	Crafting	
Space Engineers	advancement		discovery	Movement sounds based on material colliding with, no collision with thrust plays sound of that thrust	Visual indicators of speed in UI. First an	movement	object collision	movement depe
Space Engineers	Advancement - often the harvesting of resources is the redefinition of space, this visually highlights achievement		customization	Sound of tool/object operating in addition to a unique sound from the object being struck. Blocks harvested or completed have an indicating sound	objects change and the terrain shapes around. Object and terrain are one and the same for raw materials. Manufactured objects harested have a visual change but retain block shape	Harvesting	Object Collision	

Fig. 3

Source	Definition
Johan Huizinga 1950, p.13.	[...] a free activity standing quite consciously outside ”ordinary” life as being ”not serious”, but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner. It promotes the formation of social groupings which tend to surround themselves with secrecy and to stress their difference from the common world by disguise or other means.
Roger Caillois 1961, p.10-11.	[...] an activity which is essentially: Free (voluntary), separate [in time and space], uncertain, unproductive, governed by rules, make-believe.
Bernard Suits 1978, p. 34.	To play a game is to engage in activity directed towards bringing about a specific state of affairs, using only means permitted by rules, where the rules prohibit more efficient in favor of less efficient means, and where such rules are accepted just because they make possible such activity.
Avedon & Sutton Smith 1981, p.7.	At its most elementary level then we can define game as an exercise of voluntary control systems in which there is an opposition between forces, confined by a procedure and rules in order to produce a disequilibrial outcome.
Chris Crawford 1981, chapter 2.	I perceive four common factors: representation ["a closed formal system that subjectively represents a subset of reality"], interaction, conflict, and safety ["the results of a game are always less harsh than the situations the game models"].
David Kelley 1988, p.50.	a game is a form of recreation constituted by a set of rules that specify an object to be attained and the permissible means of attaining it.
Katie Salen & Eric Zimmerman 2003, p.96.	A game is a system in which players engage in an artificial conflict, defined by rules, that results in a quantifiable outcome.