*In*Tensions

Play: A Framework for Design, Development, & Gamification

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Abstract
This article presents a model of play to distinguish the ethos of activities as part of a continuum between play, games, work, and threat. The key to determining the ethos of an activity is the discourse of the activity, and how an activity is communicated as a message (process & content of communication), the mood of the communication (how it should be interpreted), and consequence (what is at stake). These three discourse categories can be binaries, and presented as a spectrum based upon: coherence and ambiguity. The proposed model suggests that play can be measured across three axes presented as binaries based upon the degree of coherence and ambiguity. This model frames a method for distinguishing and designing for play in any medium.

Introduction

There is some controversy about what elements in a game are really playful, engaging, and fun. Advocates of gamification, have suggest that gamification is the use of game elements in non-gaming contexts. Further, they propose testing these game elements in non-gaming contexts (Deterding, Sicart, et al.; Deterding, Dixon, et al.) to examine their effectiveness for increasing engagement in work related activities. However,

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dissecting and repurposing game elements into a different context and usage beg the question, whether what is being tested is still a game. What seems to be missing in the current climate of game studies and gamification is an examination of the relationship between play and games. There seem to be two important issues:

- What is play?
- How do we design for play?

Play Defined

The difficulty in defining whether an activity is play, is that an individual can be invited to play, but they cannot be made to play. Play is an attitude toward an activity, known as an ethos, or the spirit of an activity (Sutton-Smith). Play is a spontaneous activity expressed as a mood, or emotional atmosphere and can be compared to way finding. A player may be asked to:

1. Create their destination
2. Invent a reason for why they are going there
3. Create a method for how they will travel

[3] When an activity becomes prescriptive, the activity can become more like work. Additionally as the threat of consequence for failure increases, the

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activity can become a threat, where conflict or violence may be the result. The more prescribed the activity, the less like play it becomes.

Play Signaling and Maintenance

Play is important to cognition and development, and essential to understanding games. Although the list of 9 play attributes, listed later in the paper, offer themes and descriptions for coding observed play, individuals often step out of their play frame into the frame of reality. This may happen for a number of reasons, including understanding whether one is safe. In playing with another, one must check to see if all players are abiding by the agreed upon rules. If signals for play remain intact, the player can return to the play frame. This play maintenance allows for the continued collaborative construction and maintenance of social play, and allows for the individual to move from vigilance back to play.

[5] Play signals communicate a subjunctive mood—it is meta-communication that provides a mood for interpretation along with the message. When players engage in play, they often agree to a social moratorium on consequence and repercussion. Thus, correct interpretation of play signaling is an imperative for health, safety, and perhaps survival. Signals have evolved in many species to signal social play, such as depicted in figure 1.

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Figure 1: Norbert Rosing / National Geographic / Getty

[6] Back in 1991, the photographer Norbert Rosing was invited by Brian Ladoon to observe and photograph the migration of hundreds of polar bears in and around Churchill, Manitoba. Rosing was able to capture images similar to figure 1, of a polar bear approaching a chained husky in Ladoon's backyard. According to the story, the temperature would get cold enough that the polar bears would walk right through town, on their way to jump on the ice and sail out, looking for seals and fish to eat (Krulwich; Rosing). What looked like a tragedy about to happen to the chained dog, became public record of what is common in nature: one animal inviting another to play. Play happens within and across species, and can signal an intention, or invitation to play.

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[7] Evidence presented by Marc Bekoff indicates that there is grammar and punctuation to aid the interpretation of mood in communication ("The Development of Social Interaction, Play, and Metacommunication in Mammals: An Ethological Perspective." p???). These signals are used to initiate and maintain play. This meta-communication indicates intention; whether the activity is intended as play or a threat ("Play Signals as Punctuation: The Structure of Social Play in Canids").

[8] Play is instinctual (Sutton-Smith). It happens within and across species, and is essential for learning (Bekoff and Byers). According to Stuart Brown:

> Playing creatures have or develop the capacities to receive, integrate, remember and contextualize both internal and external signals. They are not always looking for a fight, sex or food, or warily looking over their shoulders for the next higher food-chain representative. Safe and well-fed, they play. How they play, and what constitutes play behavior is becoming less and less controversial as play information accumulates. The external signals that herald play across species lines powerfully affects behavior (254).

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[9] Play is often pretend violence (Aldis), where rough housing can become serious if communication and intention between participants becomes confused. When play turns to threat, things can become very serious, if not dangerous. It is important that both players are able to signal their mood to play, and can continue to monitor whether the mood remains playful, or is turning into conflict.

Play as Discourse

Signaling happens in the discourse of communication. Discourse includes the actual message (content and pattern of representation), expectations (consequence and tense) and clues to interpret the message (meta-communication to indicate mood). Discourse can be considered as an interaction between the sender and receiver. Discourses are also inherently "ideological:" involving and channelling communication, sets of values and viewpoints. What matters in play is that discourse is expressed through a number of channels ranging from gesture, oral utterance, text, movement, tools, and objects, and that these signals share a common referent between sender and receiver.

[11] Communication requires a common referent. Shared experiences serve as referents through culture and/or beliefs, language, pointing, or shared usage of signals (Tomasello). Demonstrative communication is often

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behavior that portends the action to come, mapped directly as potential causal relationship (cause and effect)—e.g., the consequences of not heeding a warning, or the benefits of fulfilling an expectation.

[12] Discourse is socially constructed. Social Constructivist Theory emphasizes the social nature of knowledge, and the belief that knowledge is constructed through social interaction: that knowledge is a shared experience, rather than an individual experience. (Prawat and Floden) (see Figure 2 (Doolittle).

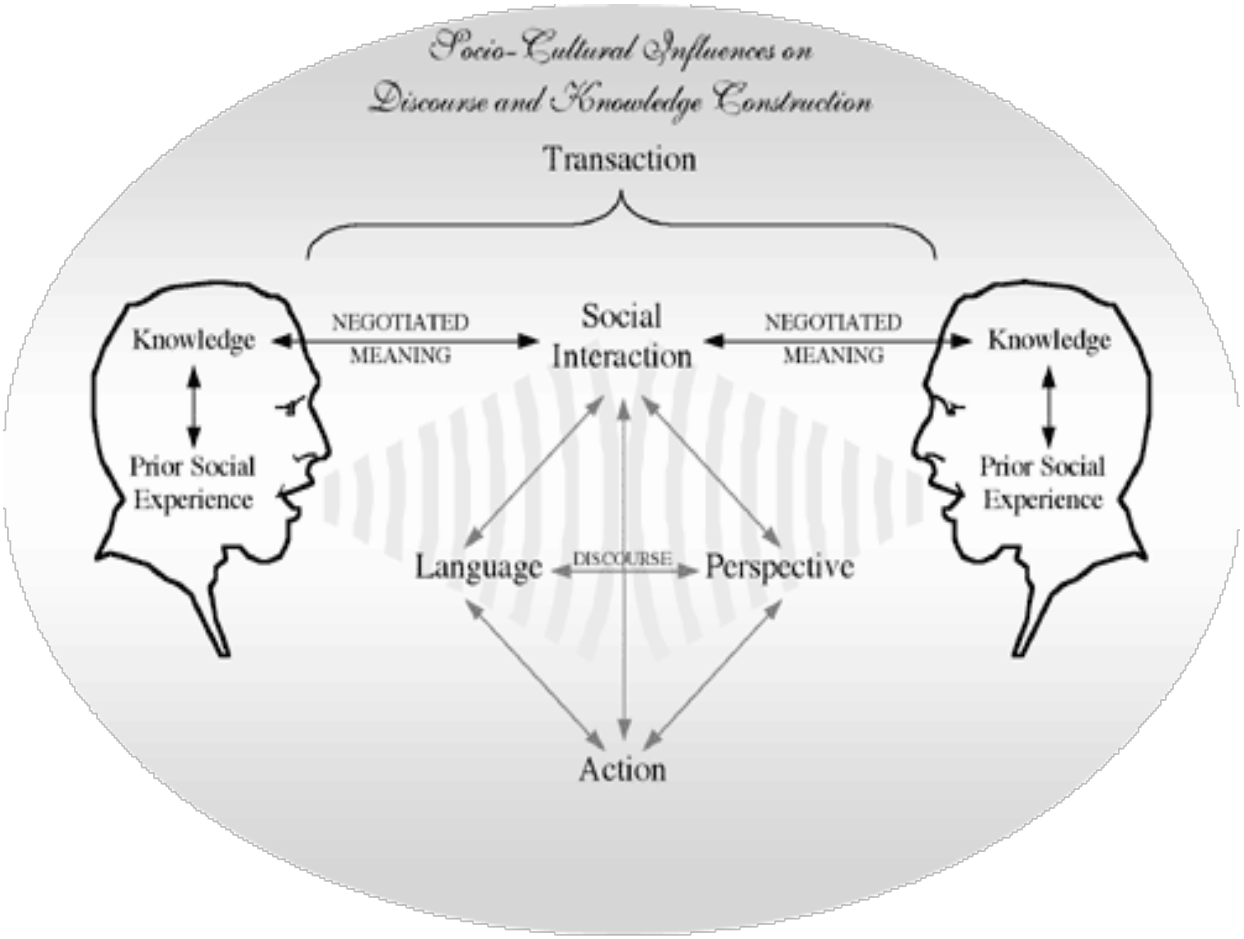

Figure 2: Discourses as Socially Constructed (Doolittle, 2001)

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[13] Discourse can range from directed communication such as a threat where the text, interpretation, and consequences are very coherent and require little inference. A threat is expressed through realis mood, a grammatical mood that is used principally to indicate that something is actually the case, such as imperative or indicative mood. These moods often align with emotional expressions such as "right now" in the indicative, energetic, or aggressive moods.

[14] The consequences of physical communication are often expressed as a simulation, demonstrating that the message portends a consequence: such as posture, baring teeth indicating biting, putting up one's dukes as threat of punching, and verbal communication may include sounds that indicate threat.

[15] Conversely, play allows for much more inference and interpretation: rules are negotiated as a form of social cooperation. This is communicated through tenses and moods that invite uncertainty, ambiguity, as well as deontic, epistemic, and dependent circumstances. Essential in defining play is the presence of ambiguity: in purpose, process, and interpretation. As coherence increases through directed and defined causal relations, less inference and less improvisation is necessary. Play becomes more defined

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and moves closer to activities such as games and work as participants negotiate rules, roles, tools, and outcomes.

Designing to Convey Usage and Mood

We use perceptual features to discriminate one object from another and create language to communicate what we have learned. This process provides some insight into how objects can communicate a usage, and that design can communicate and invite play. This observation is important for the development and design of games and play activities.

A Toy does have Rules

Often objects are designed to indicate their usage, i.e., the difference between a toy and a tool. The ethos (work, play, threat) of the intended usage can be communicated in its design, and this design can communicate how it is situated within a socially constructed context. Thus, an object can be designed to communicate a discourse of usage. This is achieved through the design of constraints and affordances. Where constraints represent cultural, or learned usage, affordances are actionable properties between the object, the world, and the actor (Gibson). Affordances and constraints are important in design and conveying usage. Donald Norman, a design specialist in the field of cognitive science, states that:

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> In product design, where one deals with real, physical objects, there can be both real and perceived affordances, and the two need not be the same. In graphical, screen-based interfaces, all that the designer has available is control over perceived affordances (Norman, p. 39).

[18] Objects such as toys and tools have rules expressed through design affordances and constraints. The user can choose to do what they are told by the object, or use the object according to their own purpose: both usages can be playful (Engeström, Miettinen, and Punamäki,). Just as one can toy with a tool, one can also use a toy as a tool, dependent on context and usage. For example, a child's archery set is often considered a toy in the west—indicated by the materials used, packaging, and design features, i.e. the arrow head is soft, the bow does not generate significant force for the arrow. Conversely, the archery set is intended as a small weapon for the nomadic peoples on the Mongolian Steppe. They gift a bow and arrow to children so they can start hunting to provide more food—it is presented as an indication as a rite of passage (van Gennep). They also scale down the archery set, so that the draw on the bow does not require more strength than the child is capable. The same object is given to children in both instances, but the design features offer different intended usage. The risk of consequences for toys and play is diminished or removed by design.

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Intended usage is communicated through the textual design (message) to emphasize work, threat, or play to help shape and inform interpretation (meaning) and usage.

[19] Complex processes can be simplified for children until they learn to internalize them and demonstrate these processes with competence or mastery. This approach was standardized in schools going back to Friedrich Froebel's kindergarten (Froebel; Von Marenholtz-Bulow), and represents an approach to gamification (Dubbels). For the sake of human development objects are often presented to beginners as toys. Complexity and consequence can be reduced through design. The control of complexity and consequence can also be designed to provide incremental learning towards competence and eventual expertise in usage. Individuals have been shown to exhibit motivation to demonstrate mastery of an object or process. This drive is described effectance motivation (White).

[20] Competence motivation differs from biological motives, as hunger and thirst described by Hull. Such competence motives serve to enhance the abilities of the organism, rather than to regulate a biological process. They are not based on a state of biological deprivation, but to help an organism improve itself.

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[21] Competence motivation is commonly visible in children. Children of all ages try to exercise control over some domain of objects, e.g. car keys, a collection of dolls, or a telephone. Healthy, normal children commonly wish to be regarded as knowledgeable and capable beyond their years (Deci and Ryan). Additionally, people who have a special talent prefer to exercise it. People tend to like a subject or a game that "plays to their strengths" because it makes them feel competent (Talented Teenagers, Csikszentmihalyi).

[22] There is, however, an important difference between seeking life activities, which emphasize talent, and expertise and the need to develop competence and expertise. Competence motivation describes the enjoyment of mastering new skills. The difference being that if an individual merely seeks situations that make one feel competent, the individual is more likely to exercise old skills, and is less likely to advance and grow in skills and knowledge.

[23] We perceive what an object can do: its limits and uses. We create rules for what things are called, how they are used, and who will use them based upon the features in and of themselves—that is cultural. Everything leading up to it is cognitive and perceptual, genetic and biological, as an affordance.

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Do Objects Themselves Create Rules?

Toys and play do not arise out of culture, culture arises out of play (Mumford,). Play is a biological feature. It is a side effect, or what Gould and Lewontin call a Spandrel (Gould and Lewontin). It is a form of cognition based upon predicting patterns, the constraints of culture, and the biological meaning making of perception as affordances.

- Toys are relative to usage based upon biological features.
- Objects are designed to imply a usage.
- We automatically project potential usage.

[25] Objects indicate rules and usage, and whatever it is used for, is elemental in defining it. However, some objects are designed to elicit certain types of behavior. What is presented here is that play, games, and work exist on a spectrum with three axes:

Ethos Model	Play	Work	Threat
Z Consequence	Ambiguous	Directed	Defined
X Content Pattern	Story	Narrative	Exposition
Y Interpretation	Mimesis	Diegesis	Compliance

Table 1: Dubbels, 2013

[26] Work, threat, games, and play is communicated along three axes below in figure 3. Along the Z-axis, the distinction between goals represent a spectrum between play (ambiguous goals) and threat (consequence). The

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range of intent and goals influences how discourse is signaled as message content (narrative or story) along the X-axis, and how interpretation is conducted along the Y-Axis (diegetic or mimetic).

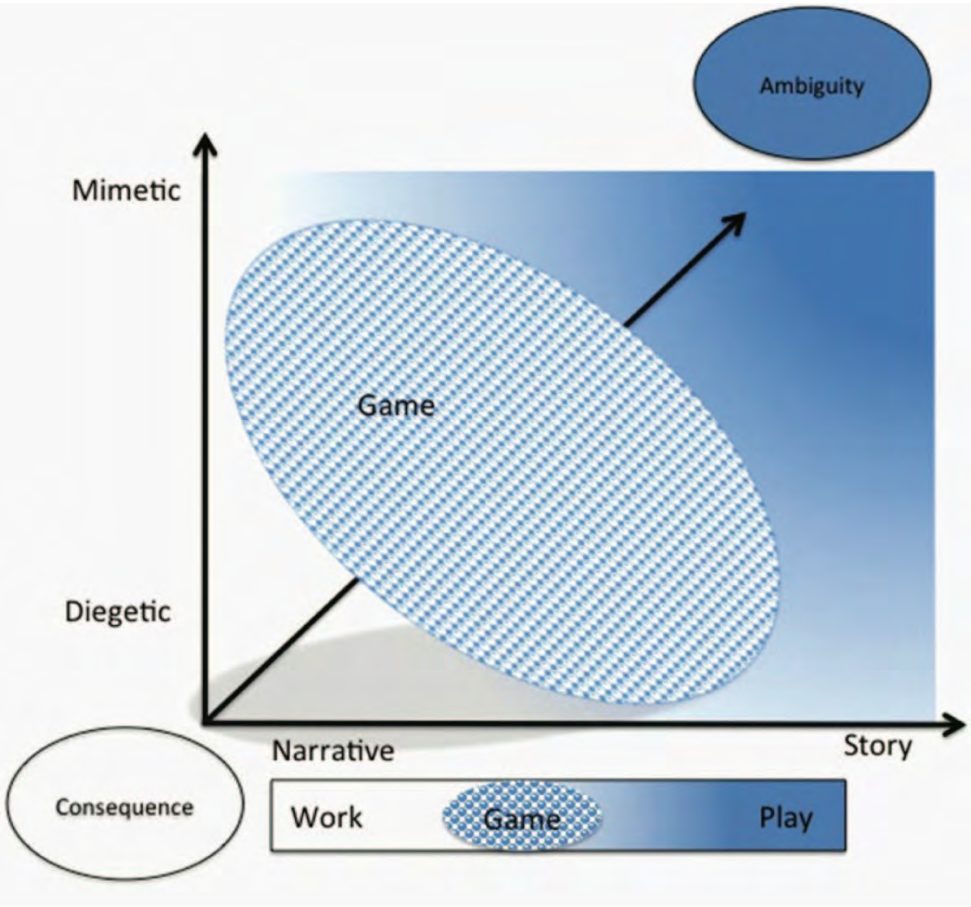

Figure 3: Three dimensions of activity ethos (Dubbels, 2013)

Common Characteristics Between Play, Flow, & Fun

Play shares characteristics with a commonly used construct in positive psychology and game studies called "flow." Mihaly Csikszentmihalyi´s concept of flow has become a widely used interpretation frame for describing the mental state of game play (Cowley et al.; Nacke and Lindley; Webster,

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Trevino, and Ryan). Flow is very similar to play by definition. According to Csikszentmihalyi, Flow is not an activity; it is a mood as identified and studied by Csikszentmihaly. Flow is a mental state, and can happen during an activity, but flow is not *the* activity. This is very similar to what Brian Sutton-Smith stated about play. He said "play might be most closely related to what happens in the mind when an adult is daydreaming—we lose track of time, place, and even perhaps reality of the moment as we are at play in our brain" (Sutton-Smith, in Meckley). Although the descriptions of play and flow are similar, Sutton-Smith stated that play and flow are necessarily different concepts:

> From a play theorist's point of view, a criticism might be that in these terms play at its best, at its peak, would no longer be distinct from work at its best, at its peak…more seems to be lost by such a universal notion than is gained. (Sutton-Smith 186).

[28] Flow has great utility and power as a concept, but represents a conundrum because flow occurs in both play and work. However, if we view the possibility that play, work, and even threat exist on a spectrum of mood, it may be possible to see that Flow is more likely to occur when one is playful with their work, and works hard at their play. Play, work, and threat come defined with different cultural approaches to activity. What may be of

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value is to consider that Flow experience may be more likely to occur in play activities, such as the feeling of timelessness.

[29] There are many common features between flow and play, and what is described as flow when it happens at work. What seems significant is that both play and flow require the player to focus on process and experience, rather than outcome and consequence in an activity. It may be this attention to experience and process that yields the timeless feeling of both. Work can be playful, and through the reduction of consequence and coherence, play is more likely to occur. Communication can provide ambiguous rather than authoritative directions, which can evoke ambiguous (playful) interpretation. The spectrum of coherence and ambiguity can provide a work environment where failure has consequences (threat), or failure is part of the discovery process (playful). The more the environment builds with threat signaling activities the less playful, less fun, and less likely to create flow.

The Timeless Qualities of Fun, Flow, & Play … "Time flies when you're having fun"

When people are experiencing positive emotions or states like flow and fun, they feel like time is passing faster as compared to when they experience negative feelings. People may seek out activities, people, and

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places where they are more likely to experience positive emotions or states, and this sense of timelessness.

[31] Fun is often thought of as part of a game, playful activity, or a flow experience. Fun, like flow, is something that can happen during play, games, and work (I. S. Csikszentmihalyi). One might easily assume that having a flow experience is the experience of fun—both are frequently attributed to play activities, and playful attitudes (Csikszentmihalyi).

[32] When fun occurs, the subjective tracking of activity diverges from the actual duration and objective experience (Sackett et al.). This is similar to the reported descriptions of the subjective experience of flow (Csikszentmihalyi) and play (Sutton-Smith).

[33] Psychological studies reveal both the importance of fun and its effect on the perception of time. Mood states high in approach motivation make time seem like it is passing fast because it narrows our memory and attention processes, which shuts out thoughts and feelings that are not related (Elliot and Covington; Elliot, Gable, and Mapes; Elliot; Gable; Sackett et al.). The feeling that time is moving faster seems to be the specific result of our desire to approach or pursue something, not a more general effect of increased attention or physiological arousal. For example, people tend to

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pursue an activity they find fun. In Brock Dubbels' study, "Dance Dance Education and Rites of Passage," high achieving students reported high motivation and engagement for activities that promised play, fun, and a different shared experience than what they shared in serious activities like school, sports and band. They purposefully allocated time for playful activities that were "not so serious: yeah, I didn't want to be left out of it. Games are fun and I just wanted to spend time with my friends" (p 72). Play was not only an activity, it was also an important part of their identities, and served as an important source for explaining motivation, and sustained engagement.

[34] However, they also reported that not all games are engaging and fun. The serious nature of some games, and the required diegetic focus, made the experience less playful, and less motivating. Play theorist Alice Meckley posits that what happens in games is not play but more problem solving, and that people enjoy solving problems and competing, but that this is not play. This experience is reflected from an informant in Dubbels "Dance Dance Education and Rites of Passage," where high achieving students were interviewed to gain insight into why they their sustained engagement. Themes that emerged from the data indicated that having a playful identity made one more approachable.

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[35] Some games communicate a very different activity from others. For example, Halo and Counterstrike are seen as more serious, and less playful:

> I have a lot of friends who play Counterstrike and a lot of ... almost every guy I know plays Halo. You can enjoy watching those games. I don't enjoy it as much. Like I said, it's just way more serious. They get more serious. Well, it's like everyone is more quiet and focused, like they really get into trying to hunt these people down and kill them before they are hunted down and killed. DDR, you are playing against someone but then with Halo and Counterstrike you're against all these people and you have to be, like, watching your back all the time. Even the people watching, they zone out and just watch it. For me it's not as fun. As for DDR, it's more like people jumping around and are less serious, but it's still a lot of fun, (Dubbels, Dance Dance Education, p. 74).

[36] Although a game experience may result in a flow experience, and the game experience can be evaluated as fun, they may not be playful. The descriptions of those interviewed and observed has led to analysis supporting the idea that games that are more constrained in narrative and interpretation (diegetic) and with consequences, were less likely to be described as playful even though they may offer the potential for flow

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experience. Alternatively, a playful game like Dance Dance Revolution (DDR) provides greater opportunity for interpretation and expression, and a greater likelihood for the shared positive experience important in play, and creating motivation and sustaining engagement. If an activity is presented as a playful experience, it may signal more choice in how the game can be played, and minimization of the consequences of losing (being killed in the game). Although a game like Counterstrike or Halo can be played like DDR, observations of the first person shooter games indicate less emphasis on play, and more emphasis on strategy.

[37] The motivation to seek out positive experience, such as fun, may be indicative of what is called approach motivation (Elliot). Approach motivation is where an individual takes action because they desire positive experiences. Conversely, avoidance motivation is doing (or not doing) something to avoid what one thinks of as 'bad', or 'not fun.' With Approach Motivation, people want to go out and achieve a goal because of the positive feelings achievement creates:

> Because we shared this thing, so it would be, like, oh, so whose house are we going to go to tonight to play DDR? Okay. Well, my friend Devon, his house was the main DDR house just because he had a great room for it and everything. And his parents didn't really care how much noise we made or how late

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> we stayed there, so his house is generally the DDR house. Tyler, who was my friend prior, we would get together and practice a lot. Michael, he bought DDR around the time that I did and we were basically kind of on the same level, and I got to know him better that way just by spending time with all these people. Nick, all these other guys, I had kind of known beforehand, but now we spent all this time together. So, it was basically we all met at Devon's house and that's what we would do for weekend-after-weekend-after weekend (Elliot 75).

So how do these Positive Emotional States come about?

There are areas of the brain associated with pleasure. Brain circuits generate pleasure and reward; this physiological system is present in humans and other animals. This includes the perception of novelty, stimulated by unusual or surprising circumstances. These brain circuits are involved in the creation of hedonic valence (pleasant and unpleasant sensations). An individual will create value of sensory stimuli through decision making, which acts as an interface between sensations and goal-directed action (Dickinson and Balleine). Pleasure here is defined as a 'liking'. It Pleasure is a reaction to reward, whether consciously felt or not. It comprises the positive dimensions of the more general category of hedonic

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processing important to survival, which also includes other negative and unpleasant dimensions such as pain.

Attributes of Play

Play can be coded and characterized according to the following summarized outline from (Dubbels, "Video Games, Reading, and Transmedial Comprehension"; Dubbels, "Designing Learning Activities for Sustained Engagement"; Dubbels; Garvey; Meckley):

1. Play is child-chosen

   Before children play, they have ideas about what they want to do and whom they want to play with. As children start to play, they choose materials, activities and other players. Although children are in control of their play, but they must cooperate and negotiate with others to play together. Because children choose their play and playmates, they are usually successful. They feel satisfied and proud of their accomplishments. Within a child's own play, no one but the child is determining what is the right way or the wrong way because the child makes the rules for her play within the framework of what is acceptable at home or in school. If adults choose children's activities or assign children to play areas, children tell us this is work and not play. Children learn the most from play if it belongs to them.

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2. Play is child-invented.

   Play is not only chosen by children but also invented by them. Children are always creating something new when they play whether it is a new construction or a new idea or group of ideas. Even though it may seem to an adult like the construction is not new because it may look just like another child's construction, to the child it is new because they tried and completed something that they never did before. In play, children are the inventors and experimenters. In play, children take risks to try something they have never tried before or think an idea they have never thought before. Through play they are developing creativity and thinking skills.

3. Play is pretend but done as if the activity were real.

   Children learn a great deal in pretending with activities and ideas that are like real events but are not real. They develop understanding of cognitive, social and emotional concepts by playing with these concepts. They develop perspective about things through playing about them. Children use play to make sense of their world.

4. Play focuses on the doing (process not product).

   Play is a basic activity of childhood. The process of play is where the learning occurs. Communication is essential to play. For example,

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there is a relationship between language and play. In play children use more complex language than in conversations with adults. Children frequently make their first attempts at reading and writing when they are playing.

5. Play is done by the players (children) not the adults (teachers, parents, or designer).

   Play is something children not only choose to do but also prefer to do. Because children learn through the process of playing, they need plenty of time and materials and other players. Adults cannot plan children's play. Adults must plan for the children's play. Adults provide the proper environment, the support, the rules, the safety, so that children can reach the maximum learning from playing (Garvey).

6. Play requires active involvement.

   Children's bodies and minds are active in play. Research tells us that the maximum learning occurs when children interact with materials and with others. Play is where the activity of childhood is occurring (Garvey).

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7. Play is fun.

   Play is fun and enjoyable because children choose their activities and playmates (Garvey).

8. Play is signaled and maintained.

   There is a process of moving in and out of a play frame (mood or mental state of play) to check for continued peer supported of play (Bekoff).

9. Play is the ability to subjectively reframe reality and to make predictions.

   This ability to reframe, to pretend, and predict is powerful for resolution of events we cannot make sense of, and the ability to explore and examine contingencies, as well as to imagine and test hypotheses. This ability to visualize and imagine scenarios allows for early identification or patterns as potentially dangerous, desirable, or indifference.

Play, Ambiguity, & Coherence

The use of ambiguity and coherence are important in authorship, game development, and instructional design. Coherence provides increased specificity for presentation of information, how it should be interpreted, and

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the potential consequences. When ambiguity is introduced, it invites interpretation for meaning and a reduction in consequence.

[41] Ambiguity and coherence are key to understanding the difference between play, games, and work activities. This can be achieved through cases for learning systems and targeting specific types interventions for specific learners, based upon prior knowledge and experience. Thus, the surveying and inventory of prior knowledge, and the scaffolding of new knowledge are essential for adaptive game play, work activities, and/or communication.

[42] This means that activities as emulations, which are more ambiguous in their use, necessitate greater prior knowledge to solve a problem. This is in contrast to a coherent game, or simulation, thus limiting doubt about intended goals, process, outcomes and increasing the likelihood of a correct answer.

Emulation / Simulation

Both simulations and emulations have scoring mechanisms, but these scoring mechanisms are structured to test hypotheses rather than provide a recipe for optimal performance. The term emulation learning comes from David Wood describes how children learn about parts of their environment,

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then use this partial knowledge to achieve their own goals (Wood et al.). Emulation is a style of learning where an individual observes some aspects of behavior, and applies this learning to their own behavioral strategies (Tennie, et al.). Emulation learning, when applied as a category to describe games, uses a stronger narrative and interpretive sequence, where the player may have the tools, end goal, and an understanding of the properties of a problem to be solved. The objects and the environment associated with the challenge can then be used to solve problems in a way unique to the user. This is in contrast to imitating, or copying to learn a system, which is similar to simulation. In practical terms, emulation learning provides greater ambiguity in terms of process and interpretation, but does provide a defined outcome. Simulation learning provides a directive in process, interpretation, in service of a prescribed outcome.

[44] Coherence is validated because of cognitive considerations. When an individual is forced to bring their prior knowledge to make connections, they will recall, apply, test, and perhaps challenge their understanding (Trabasso and Sperry; van den Broek; Graesser, McNamara, and Louwerse; McNamara et al.). The role of coherence provides design guidelines for design:

- For low prior knowledge learners, low ambiguity/high coherence is best.

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- For high prior knowledge learners, high ambiguity/low coherence is best.

Coherence Differentiates Emulation & Simulation

In emulation, learners see the objects/tools involved and then come to some insight about its relevance to their own problems. In this way, observers see that a tool may be used to do something, but not necessarily the way the tool is used to achieve that goal. This is in contrast to simulation, which emphasizes doing, processing and understanding a protocol, or some causal factor that is modeled. Simulation is a form of learning expressed as imitation, where something is acted out or re-created. This could be in an experiment, where conditions are simulated, such as using a dark room to simulate nighttime conditions. It could also be a re-enactment, such as when a crime scene or accident is recreated at the same time of day so the conditions simulate the conditions of the day of the incident.

Conclusion

When a game is presented as providing a positive experience, where the individual assumes there will be fun and success, this may provide approach motivation. By signaling a potentially positive experience, one may be able to invite play and engagement with the promise of fun, or flow. This

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ability to invite play and engagement is important for design and development. Understanding how people signal play is important not only for gamification, but for anyone that would like to increase participation and engagement of others. To do this, one should have an understanding of what constitutes play for the player, the researcher, and designer.

[47] The difficulty in defining whether an activity is play, stems from the fact that play is an attitude toward an activity or mood (Sutton-Smith). What this means, is that an individual can be invited to play, but they cannot be made to play. Play is a spontaneous activity that comes about as a mood, or emotional atmosphere and can be compared to way finding. A player may be asked to:

1. Create their destination
2. Invent a reason for why they are going there
3. Create a method for how they will travel

[48] When an activity becomes prescriptive, the activity can become more like work. Additionally as the threat of consequence for failure increases, the activity can become a threat, where conflict or violence may be the result. The more prescribed the activity, the less like play it becomes.

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[49] The use of ambiguity and coherence are important in authorship, game development, and instructional design. Ambiguity and coherence are key to understanding the difference between play, games, and work activities. They use cases for learning systems, targeting specific types of interventions for specific learners, based upon prior knowledge and experience. Thus, the surveying and inventory of prior knowledge, and scaffolding into new knowledge are essential for adaptive game play, work activities, or communication.

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