BA Thesis by

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Can You Incorporate Flow in Non-Games Without Breaking Their Constitution?

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Abstract

In this thesis, I investigate two concepts that seem to be incompatible with one another at face value; the introduction of "Flow" to a genre that inherently seems to lack the necessary dimensions to support the existence of Flow. Upon further investigation, about the nature of the genre, we find that there is a potential for a flow experience.
However, a task such as this could not have been accomplished without selecting a handful of definitions for the theory to be based on. An understanding of relevant definitions forms the basis of this theoretical approach.
Moreover, I use Jesper Juul's definition of games in an attempt to find the placement of non-games as a genre. Juul's definition allows a confined investigation to the borderline cases which include non-games. Also, it's important to note that I confine my discussion of flow strictly to my research, which does not reflect the in-depth theory of flow in the field of psychology.

1.0 Introduction

Video games are one of the most prominent topics of the 21st century, it is the biggest entertainment industry in the world (Richter, 2020). It only took a decade during the 1980s for the medium to earn the mass consumption status. (Wolf, 2005). Ironically, the topic is still in its infancy stages academically in contrast to the other outlets. Only recently have scholars realized the study of games should be treated as its own separate field of study. It does not constitute an accusation to bring up the young age of this medium when compared to other outlets like books for instance, or even to films, which have existed for more than a century. Video games are a blossoming field with plenty of space for innovation, but its lack of precedents can cause uncertainty in the less researched areas (Egenfeldt-Nielsen, Smith, & Tosca, 2008, p. 8).

This thesis examines one of the obscure areas of video games. One can call it the mysterious space between video games and software toys. In a theoretical sense, "video games" that fall into this area do not possess all the necessary defining characteristics to be qualified as games; no imposed goals, no challenges, lack of structure (Queiroz, 2005). Their nature, however, is still somewhat similar to that of a video game in the sense that it is an interactive experience while maintaining toy-like aspects; objectives are non-existent or optional, no sense of winning or losing, a lack of clear structure (Queiroz, 2005). Moreover, I have no intention of concluding precisely what non-games are or clear any ambiguity in their definition; rather, the focus is on understanding the effects of non-games and whether introducing a concept that inherently contradicts some of its aspects can invalidate its constitution (whether adaptation of flow in non-games is possible). However, we cannot delve into this area without first understanding what makes a game, a game. The truth is, since scholars approach games from widely different paradigms, the most fundamental issue with game studies is; "what is a game" (Egenfeldt-Nielsen, Smith, & Tosca, 2008, p. 4). When game scholars cannot agree on this most fundamental issue, how can I answer this question? In any case, in light of this thesis, observing and analyzing the definitions at hand ought to be enough.
Therefore, I will quote a critical statement to support my argument throughout the thesis; "In one important sense, of course, the question of what comprises a game is really just a question of definition. We cannot *determine* empirically or logically what a game is. What we can do, however, is seek a definition appropriate for our questions, and be quite explicit about the meaning of "game" when we employ it in important situations." (Egenfeldt-Nielsen, Smith, & Tosca, 2008, p. 4) I will address this issue in the next chapter of this thesis, but for the sake of the introduction, the essence of this quotation advises us to find suitable definitions for our arguments. Consequently, I have chosen the ludologist Jesper Juul's game definition as the basis for my argument, which I will address in the following chapters. This thesis does not seek to determine a true definition of games or non-games, but instead, it discusses them according to established baselines.

I will dissect the question's components in an effort to clarify any ambiguity; the two obvious ambiguities are flow and non-games. One is an optimal mental state induced from the total occupation in an activity (Csikszentmihalyi, 1990). The other is a type of software that behaves like a toy but lacks the remaining necessary dimensions to qualify as a game (Queiroz, 2005). Interestingly, the defining dimensions required for the two subjects to sustain their integral aspects *seemingly* contradict one another, meaning, the two cannot co-exist. The question aims to bypass the contradiction, acknowledging the dissonance when combined in their default states.

The steps needed to approach such a question are the following:

1. Understand the concepts within certain frameworks, through one of the several possible lenses.
2. Identify the tension and its validity, whether it is justified.
3. Find the answer through the proposed framework.

Accordingly, this thesis will consist of four main sections; (1) Understanding the established baselines that form the basis of the theory; defining games, non-games, flow within the context of video -games, and small discussions regarding the topics. (2) Addressing the problems with the introduction of flow to non-games (3) The main argument of the thesis; can these two concepts be made to work together?

From here we move to our first topic.

2.0 How Video Games Started

Before our modern digital entertainment world, passive entertainment was the norm among people. Only to be changed when the story of video games began in 1961. A team of MIT researchers and programmers decided that they want to test out their new computer system. For that reason, they created “Spacewar!”; a two-player spaceship battle game. It is generally recognized that Spacewar! was the first video game to gain widespread recognition and it is also considered the predecessor of the "shoot-'em-up" genre. “Spacewar!” paved the way for a new chapter in the history of games. (Egenfeldt-Nielsen, Smith, & Tosca, 2008, p. 1)

2.1 The Technological Leap-New Possibilities

The gaming industry is strongly influenced by the concurrent technological trend. As computers become more powerful games of greater complexity become possible. The technological leap in the microprocessor industry in the late 1980s enabled the transformation of games from two-dimensional to three-dimensional experiences. The ability to produce content in 3D is revolutionary allowing us to construct realism in video games. New possibilities ranging from enormous fictional fantasy worlds to life-like simulation games become possible. In some sense, this transformation allows us to reflect aspects of our physical reality into the virtual gaming world. Moreover, it is important to mention that this does not only contribute to the visual and gameplay sense, but it also opens up new study opportunities as the medium exponentially becomes more sophisticated. And as we move forward in our timeline, new genres of video games are born; some more refined than others, but it is not an overstatement to say that each one deserves its share in video game studies. Non-games seem to be an under-researched area that needs to be addressed more carefully. The term non-game seems to be employed for anything that is not a game. But it is a genre with misunderstood characteristics. To conclude, the medium is expanding rapidly and video game theory cannot keep up with it. An equal balance between theory and practice is desperately needed, and that can only be achieved when people start taking this medium seriously.

2.2 Discussion About the Difference with Other Mediums

There is a fundamental difference between video games and other mediums. The preeminent difference is that during the activity there is an interplay between the medium and the user; action and reaction that lead to consequences. Depending on the choices a user makes, the medium changes the experience accordingly. Climbing the flagpole in Mario is a choice taken by the player (user), that ends the current level and advances you in the game (experience), avoiding that or doing nothing, will stop the progression of events halting the experience. And naturally, there are more complex examples that require critical thinking, or a reaction within a limited time frame. On the other hand, for example, the absence of interplay between the viewer (user) and the movie (experience) in the activity of watching a movie, confines the experience to be linear. The user has no impact on the outcome of the experience nor the display of content. While one can argue that the user can still alter the sequence of events by having certain controls over the movie (rewinding, forwarding, etc.), accordingly changing the watching experience, it does not change the fact that the movie has a dedicated starting and endpoints. But it is important to take this with a grain of salt, linearity in media is a much bigger and (arguably) controversial discussion. This is just my interpretation of how video games greatly differ from other mediums, and perhaps, why I think that video games are much more complex to create, study, and analyze.

Considering the previous facts, we can also infer additional implications within the activity; (1) For no two individuals the experience is the same. (2) The experience can vary for the same individual in the act of playing the same game. For the former point, we can effortlessly acknowledge how different individuals in modern society operate and think. Designers can estimate different reactions from the audience and design the game accordingly. However, it is beyond the designer's ability to predict new reactions and gameplay possibilities that the game could potentially generate. Sandbox games would be a great example to support this statement; they are characterized by limited restrictions on the player's agency to allow a greater number of personalized gameplay possibilities. Instead of constraining the player to undertake certain tasks to progress in the game, they provide the player with gameplay tools that enables a great degree of creativity to achieve personal and in-game goals. Minecraft survival mode, for example, does not force the player to follow certain paths or gather specific resources, instead, the player has the total freedom to pursue his/her own goals; whether it is building your own home, gathering resources, fighting enemies, or beating the game. Many possibilities to choose from and many outcomes to create. Nonetheless, one can still argue that watching a movie or reading a book differs between individuals. While this statement is certainly true, the overarching difference in the experience is not comparable to that in video games. There are considerably fewer variables at hand, hence the difference of the verb we use to describe our interaction with the experience; play vs watch/read. The former is active while the latter is passive.

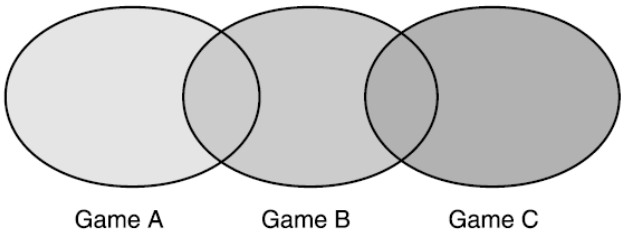
As for the second point, video games can also offer a different experience with each play (unless it is a game with fixed linear progression, but in that case, one could argue that it can still differ with each new play). The "Roguelike" genre, for example, excels at emphasizing this statement. The main characteristic of this genre is its replay value. Each run can be played differently; the player is offered a variety of choices (usually a set of randomized items) to tackle the obstacles (enemies) with each run. According to these choices, the player can tailor the gameplay experience to beat the loop. Upon beating the game, the loop resets. Each loop contributes to the collection of choices that the player can take with each run. Consequently, flavoring each loop so the game does not become stale and boring. The game "Hades" is a great example of the roguelike genre. Each loop unlocks new weapons, characters, and abilities. Moreover, it contributes to the overarching storyline; the lore becomes clear with each instance of play, thus, beating the game multiple times does not necessarily end the overall experience. While one could claim that when watching a movie multiple times, the viewer can discover new theories/plot holes/overlooked details, etc. But again, this information already exists whether the viewer

acknowledged it or not. Perhaps I should be more precise about my point and change it to "the experience can *greatly* vary for the same individual".

Mentioning this is merely to point out the extraordinary nature of the medium and reinforce the idea that game studies are as important as any other medium studies. Now that we *briefly* described how unique games are in comparison to other mediums, describing what games mean is a much more difficult task. There is no straightforward answer to this dilemma. We will look at some of the different perspectives on the definition, mostly from our modern times since they conclude most of the previous philosophical observations on the subject. "In daily life, we tend to define games informally; the general public, and even most serious gamers, don't require formal criteria in order to enjoy their games. For students of games, however, definitions are essential. Understanding the way games work and how they differ from other types of entertainment helps us choose the appropriate methods to analyze video games." (Egenfeldt-Nielsen, Smith, & Tosca, 2008, p. 23)
Defining games is a key point to understand the placement of non-games as a genre, to understand the problems with its terminology, and to find the placement of flow in the genre.

2.3 The Problem of Games According to Ludwig Wittgenstein

Wittgenstein was an Austrian-British philosopher whose work primarily addressed the philosophy of mathematics, the philosophy of mind, and the philosophy of language considered by some, to be the greatest philosopher of the 20th century (Matar & Biletzki, 2021). In his work "Philosophical Investigations", in which Wittgenstein famously asserted that the objects we call games have no common feature, and that all we can hope for is "family resemblance", Wittgenstein rejected a common definition that would encompass all "games" (Egenfeldt-Nielsen, Smith, & Tosca, 2008, p. 24) Wittgenstein examined a variety of activities traditionally considered to be games, such as; chess, tic-tac-toe, tennis, and ring-around-the rosy. Although some rely on luck, others call for skill, he observed that there is "a complicated network of similarities overlapping and crisscrossing: sometimes overall similarities, other times similarity of details (Ibid, p. 24).
When defining family resemblances according to Wittgenstein, although Game A and Game B share features with each other, they need no features in common with Game C. as illustrated in this diagram.



(Fig 1) (Egenfeldt-Nielsen, Smith, & Tosca, 2008, p. 23)

Game **A** shares features with Game **B** which shares features with Game **C**. Game **A** and Game **C** share no feature

However according to Egenfeldt et al., it is worthwhile to mention that Wittgenstein was not particularly interested in games, but he used his analysis as part of the larger project presented in his Philosophical Investigations. (Ibid, p.24) Nevertheless, the authors claim that Wittgenstein's analysis is flawed in two ways. To begin with, he doesn't search for the common feature he alleges doesn't exist. Secondly, language plays a significant role in Wittgenstein's analysis. In both German and English, the word game (Ein Spiel in German) does not distinguish between informal and formal types of games. On the other hand, in Scandinavian languages, for instance, there are dedicated words for both informal and formal

types of games. Therefore, Wittgenstein's argument may be highly language-specific; and we should not take his analysis as proof that games defy rational definition (Ibid, p.24).

Although Wittgenstein's view on the definition of games has its flaws, we can acknowledge his notion that games are hard to define. As the theory of games expands, the ability to iterate on previous definitions becomes feasible. This iteration creates new philosophies which allow us to discuss the topic at hand more coherently. In our next section, we will have a look at other definitions and some important points.

2.4 The Relationship of Play and Game by Katie Salen and Eric Zimmerman

When we employ the term player, we do not necessarily mean only for games. Salen and Zimmerman described the relationship between games and play and described how they overlap.

Games are a subset of play.
According to Salen and Zimmerman, in the book Rules of Play, there seems to be no separation between *play* and *game* when examining their overlapping relationship. *Play*, however, encompasses a much broader area which includes both games and other informal types of play. The former, however, is a much smaller area encapsulated within *play* compared to the latter. For instance, playing with your cat is an informal type of play while playing chess is playing a game. Games are a special type of play that consists of rules and contests. (Salen & Zimmerman, 2003, pp. 208-209)

Play is a component of games.
Another way of looking at this relationship; *games* contain *play*. *Play* is an inseparable component of games; it is one aspect of games and the way we describe the interaction with the game. Therefore, play is also a subset of games. This relationship (games are a subset of play and play is a subset of games) may sound like contradictory terminology but in fact, the separation between the words is necessary to ameliorate the definition of games.
This separation is a linguistic anomaly exclusive to English. It offers us completely different words for the activity and the way we interact with it. (I can personally also verify that in Arabic, Hebrew, and German the verb and the noun are from the same root word). In conclusion, the separation is healthy for the long run of the definition (Ibid).

2.5 Definition of Games by Jesper Juul

Jesper Juul is a game researcher and theorist. In his book "Half-Real: Video Games between Real Rules and Fictional Worlds", Juul reviews previous perspectives and definitions and he picks out their similarities to combine them into a formal definition that he terms "classic game model". In his definition, Juul proposes six fundamental features that an entity should inherit in order to be called a game. Missing one or more of these fundamental features invalidates the entity from being a game and puts it as a borderline case, or, as something that is not a game (Juul, 2003). The following are the definitions that constitute the classic game model by Jesper Juul and they are an excellent introduction to the various perspectives on the subject. However, one should refer to the original work for a more profound explanation.

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.

(Juul, 2003)

Contrary to what other writers have said about games escaping a sensible definition (Wittgenstein for example), Juuls proves that games indeed have commonalities that can be described. We can see overlapping elements from all of the previous definitions. He summarizes the similarities from these definitions to form his classic game model leaving no room (arguable) for ambiguity.
For our investigation in non-games, we need a dedicated definition that considers the area between games, borderline cases, and not games. If we take other definitions into consideration, then the borders of the genre become fuzzier. Non-games as previously mentioned, are borderline cases between video games and toys and that by itself is not a good description of what the genre entails.

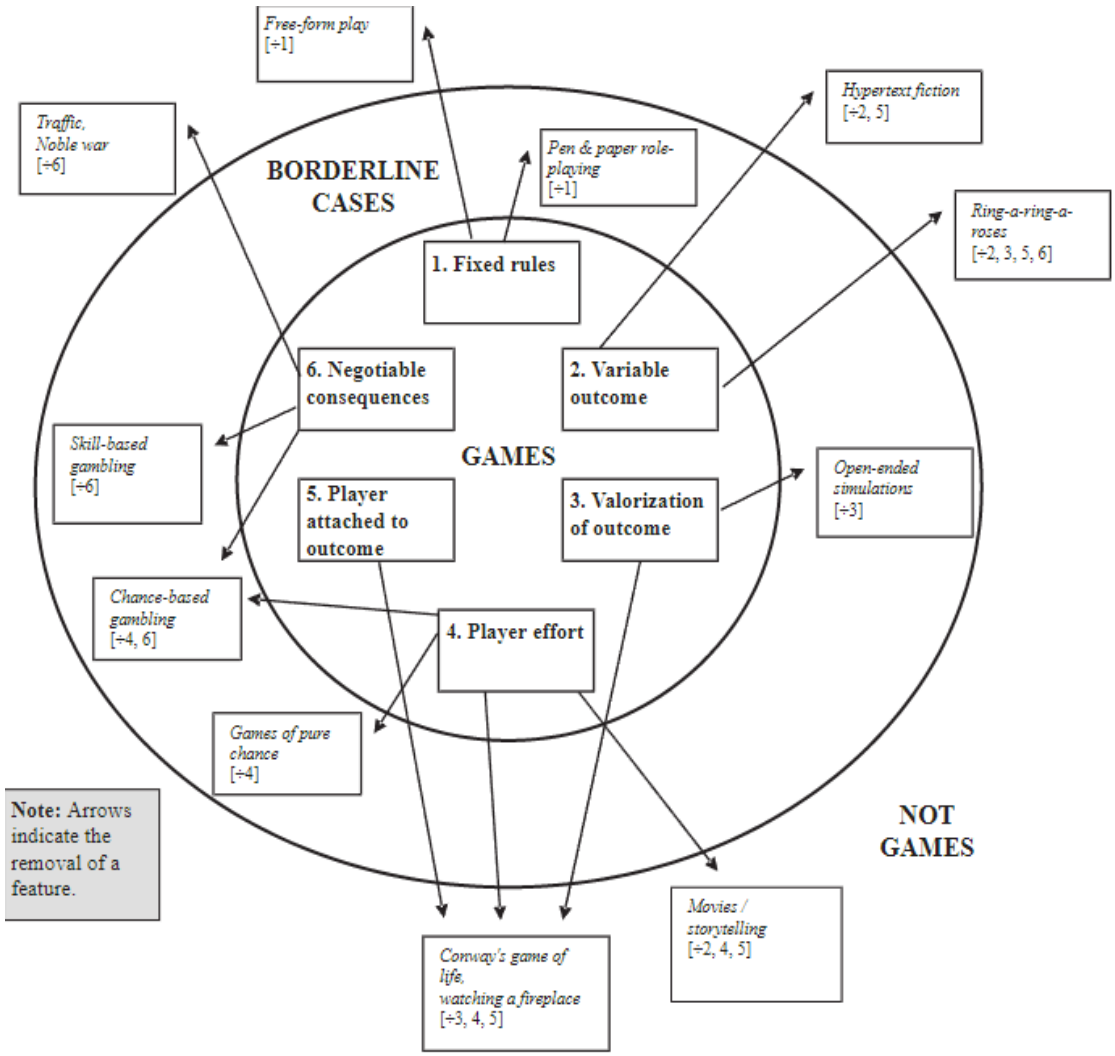
The six fundamental features according to Juul are the following (Juul, 2003)**:**

1) **Rules:** Games are rule-based. The rules of games have to be sufficiently well-defined that they can either be programmed on a computer or sufficiently well-defined that you do not have to argue about them every time you play.
2) **Variable, quantifiable outcome:** Games have variable, quantifiable outcomes. For something to work as a game, the rules of the game must provide different possible outcomes. This is pretty straightforward, but for a game to work as a game *activity*, the game must also fit the skills of the player(s).
3) **Value assigned to possible outcomes (valorization of outcomes):** That the different potential outcomes of the game are assigned different values, some being positive, some being negative.

This simply means that some of the possible outcomes of the game are better than others. Moreover, this feature is what creates conflict (challenges) in games.

4) **Player effort**: That the player invests effort in order to influence the outcome. Player effort is another way of stating that games are challenging, or that games contain a conflict, or that games are "interactive".
5) **Player attached to outcome**: That the players are attached to the outcomes of the game in the sense that a player will be the winner and "happy" if a positive outcome happens, and loser and "unhappy" if a negative outcome happens.
6) **Negotiable consequences**: The same game [set of rules] can be played with or without real-life consequences. A game is characterized by the fact that it can *optionally* be assigned real-life consequences. The actual assignment can be negotiated on a play-by-play, location by location, and person to person basis.

The diagram below illustrates the area between games, borderline cases, and not games. Moreover, it indicates the potential placement of different cases upon removing certain features from the experience.



(Fig 2) (Juul, 2003)

2.6 Why Juul's Definition?

It is not that Juul's definition is more correct, again, there is not a right or wrong answer for what comprises a game. It is about searching for an appropriate definition to answer our questions. Juul's definition contributes to our research and it stands out from the rest for the following reasons:

1. His definition excels at filtering out what is a game, not a game, and borderline cases, leaving little room for discussion in some special cases.
2. It allows us to investigate the borderline cases which *supposedly* subsets non-games.
3. We can practically determine the missing features and the placement of the experience.

Discussion:
Non-games have rules (1), the experience is programmed to do something, if you do X the experience creates Y. Outcomes are present in non-games (2), however, the player determines his attachment to them (5) and the player exerts effort to get the outcome he/she desires (4). There are no outcomes better than others and the evaluation of the outcome is subjective to the player (no explicit values attached to the possible outcomes) (-3). Non-games have negotiable consequences (6).
The only missing feature is (3), therefore, non-games are a subset of open-ended simulations (refer to the diagram above)

3.0 What are Non-Games?

Non-games are borderline cases of games; a class of software between video games and toys. The term "non-game games" was originally defined by the former Nintendo president Satoru Iwata as "a form of entertainment that really doesn't have a winner, or even a real conclusion" (Casamassina, 2005)The most apparent characteristics of non-games seem to be the lack of imposed goals, objectives and challenges, important features for all kinds of games (Queiroz, 2005). However, the absence of such features provides less resistance from the game to the player's agency, which allows unrestricted manipulation for the player to employ their creativity and self-expression in order to produce meaningful play (Ibid).

Looking at the term "non-game games" from the lens of Jesper Juul's game definition seems contradictory. The term "non-game games" suggests that non-games are games. Borderline cases according to Juul's definition are simply not sufficient enough cases to be called games. The lack of the above-mentioned fundamental features disqualifies them non-games from being games. However, it is important to also mention that Juul refers to non-games as something that is outside the borderline cases (Juul, 2003). He uses the term differently as in its face value to describe something that is not a game excluding the notion that it is a genre or a classification of certain borderline cases. He even writes about SimCity which is arguably a non-game and he claims that it is a borderline case. This indeed calls for a change of terminology or even more research to strengthen the inconsistency of this term. Therefore, it leaves us with only "non-games" to classify a subset of commonalities between borderline cases of games. Moreover, it arises the question; what does this term encompass? The short answer is, it depends. Looking at it from a linguistic face value perspective, the term "non-games" can theoretically classify everything that is not a game. But, if we want to look at it from a point of view of an employed term to describe unorthodox types of games with certain commonalities, then we are left with only common lacking characteristics as a reinforcement for the definition. It is problematic since we are employing this term prominently in this thesis. How come the same term is employed differently both as to describe something that is not a game and also to classify borderline cases of game? It is an under-researched topic that needs modification to justify its definition.
As ambiguous as this sounds, we will refer to the term as an employed term to classify these sorts of borderline cases. It is indeed an ambiguous label, definitely not as straight-forward compared to other genre labels like FPS, RPG, RTS etc. where the term specifically describes the nature of the genre. I

personally think that the term is not linguistically adequate to describe itself. But it is not, yet, my objective to find a new label or to debate it.

3.1 Are Non-Games Software Toys or Something Wrongly Defined?

According to Chris Crawford in his book "Chris Crawford on Game Design" any interactive entertainment without defined goals are considered toys. "With playthings (*the term he refers to for interactive entertainment*), the dividing question is, "Is there a defined goal associated with the use of this item?" If not, then I call it a toy. A player uses a toy in an unstructured fashion, without pursuing an explicit goal. This does not mean that the player's actions are arbitrary, for the player can still be engaged in exploratory play, determining in some fashion the behavior of the toy. The player's exploration may indeed show some structure, but this structure is not directed toward the satisfaction of any goal other than the determination of the behavior of a system." **(Crawford, 2003, p. 24)**

He carries to give an example of a software toy, like SimCity and The Sims. From a first glance, this can summarize the non-game experience. While he is theoretically not wrong, someone has to be wrong or misunderstood. It is either a misconceived genre with obscure nuances that elevates it from the software toy status, with not enough features to be defined as a game, or, a wrongly labeled genre that advocates for a terminology change. After doing this research I am leaning towards the latter. Either ways, it is not my problem to close this gap, I am merely stating it. I only thought that it is interesting that the research in game studies greatly varies, depending on through which lens you inspect the problem at hand.

3.2 Freeform Creative Play

There appears to be an inseparable bond between freeform creative play and non-games. In the context of video games, freeform creative play is any kind of creative play that allows the player to use the game as a sandbox without limitations in the context that the game offers (Adams, 2005). The non-restrictive nature of creative play tends to compel the player for self-expression (Ibid). Non-games seem to offer only freeform creative play as their main feature. This implies that there is no structure or imposed goals besides what the player wants to achieve in the playing session. Moreover, the lack of reward in non-games means that there is an intrinsic motivation that drives the player to stay engaged in the activity. We will have a look at some examples of non-games and how they advocate for creative play.

3.3 Early Examples of Non-games

The following are some of the earlier cases of non-games (Queiroz, 2005):

I Robot (1983)
The earliest example of non-games dates back to 1983 in the game "I Robot" released by Atari which includes a non-game mode called "doodle city" that allowed the player to draw using various polygons (Queiroz, 2005). There are no goals or structure to this mode. The players are free to make their own shapes and designs using the tools that the mode provides.

Psychedelia (1984)
Developed by Jeff Minter, a well-known indie game developer and published by Llamasoft in 1984, Psychedelia allowed users using the joystick to generate a light show on the screen grid, sending pulses or bursts of colored squares. Minter later iterated on the same concept but with addition to audio to create customizable audio visualizers; Colourspace (1985), Tip-a-Tron (1987), Virtual Light Machine (1990) and Neon (2004). Which are all can be considered as non-games.

Nintendogs (2005)
The award-winning Nintendo real-time pet simulation "game" released for Nintendo DS. It is comprised of real-time pet interaction and customization of the pet's grooming as well as behavior by using the touchscreen pen and the built-in microphone. There are no goals other than what the player sets to him/herself. However, the game is more restrictive in the sense that there are finite possibilities in which the user can customize and adapt their pets. Nevertheless, Nintendogs falls in the non-games category.

Electroplankton (2006)
Developed by Indiezero and published by Nintendo for the Nintendo DS. It allowed for interaction with animated planktons to create music. The game has ten different themes each comes with a unique set of sounds and visuals. The player play music through interaction with the various visual elements using the stylus, touchscreen, and microphone.

3.4 Modern Examples of Non-Games

Proteus (2013)
Developed by Ed Key and David Kanaga. In Proteus the player can wander around in a procedurally-generated pixelated environment. The world's flora and fauna emit unique dynamic musical cues depending on the player's position in relation to the surrounding. The environment becomes a dynamic instrument that plays with the movement of the player. There are no imposed goals in Proteus other than immersing oneself in the environment and observing the visual and auditory changes. It is an open-ended simulation, meaning the player cannot beat the game, only discovering the boundaries of it, if such exist.

Everything (2017)
Developed by the artist David O'Reilly who is a film maker and a game developer. Everything is an open-ended simulation game where the player has the ability to explore a procedurally generated universe from different perspectives ranging from colossal star systems to micro-organisms and even sub-atomic levels. The player can shift their control to any given entity and communicate with them. Moreover, the game is narrated by the philosopher and writer Allan Watts. Everything really does not have any structure, it puts the player in the middle of nowhere with no clear directions on where to go or what to do. The narrative progression comes with freeform discovery of the generated universe. No goals are imposed on the player other than building own meanings through play or discovering all the different interactable entities that this experience provides.

Can You Incorporate Flow in Non-Games Without Breaking Their Constitution?

Now that we know what games and non-games are, we will try to answer our question. I acknowledge that in a perfect world, the answer should be a coherent yes or no, but we are about to find out that it is over-ambitious to assume so.

4.0 Flow in The Context of Non-Games?

As an attempt to find an answer to happiness Mihaly Csikszentmihalyi introduced the concept of *flow* in his influential work "Flow: The Psychology of Optimal Experience (1990)". In the field of positive psychology, Flow describes an optimal mental state where the person is completely occupied with a task that matches the person's skills, being neither too hard (leading to anxiety) or too easy (leading to boredom) (Csikszentmihalyi, 1990). Csikszentmihalyi concludes that the most rewarding experiences that provide us with the most joy and satisfaction, result from pursuits or pastimes that require us to be actively engaged with the content of the experience. Mihaly's work indicates that flow is very rarely achieved by consuming other passive entertainment media (Jenkins, 2019). As we discussed

previously, in game vs other mediums. The active part in games provides a sense of control over the experience which leads to satisfaction and eventually to flow (Cowley, Black, & Charles, 2008). The recognition of Flow in video games in the past twenty years, has been widely adopted in game studies and has been an influential part in the design process and adaptation of video game experiences to the players (Chen, 2007).

Maintaining the Flow experience imposes balance in the activity between the challenge and the abilities of the participant. In the case of video games; the player's skills vs the challenges that the game presents (Chen, 2007). What about the case of non-games? or any other borderline cases that lacks challenges or goals? Since challenges and goals are not intrinsically present in non-games, is there a different way to determine whether or not flow in non-games is possible?

According to Csikszentmihalyi eight dimensions must be met in order to induce a flow state (Csikszentmihalyi, 1990):

1. A challenge activity that requires skills
2. The merging of action and awareness
3. Clear goals
4. Direct feedback
5. Concentration on the task at hand
6. The sense of control
7. The loss of self-consciousness
8. The transformation of time

However, not all of these components are needed for flow to be experienced (Csikszentmihalyi,1990). We can confidently claim that non-games only tick the following: (5) Concentration on the task at hand, (6) The sense of control, (7) The loss of self-consciousness, (8) The transformation of time.

In the context of video games, there have been many attempts to support the idea that immersion and flow do not substantially differ, and that we need more evidence to justify their separation (Michailidis, Balaguer-Ballester, & Xun, 2018). Theoretically, if they are indeed the same phenomenon, then any immersive experience is capable of inducing a flow state by default. However, flow vs immersion requires a study by itself, and in my personal views, there should be another way to find proof than to debate whether these two colossal subjects, in essence, are alike.

So how can this be proven?

According to Jenova Chen, a well know game designer who primarily researched and adopted flow in his game design process; from a game design perspective, the above-mentioned components can be condensed to three core elements that a video game must have in order to support a flow state (Chen, 2007):

1. As a premise, the game is intrinsically rewarding, and the player is up to play the game.
2. The game offers right amount of challenges to match with the player's ability, which allows him/her to delve deeply into the game.
3. The player needs to feel a sense of personal control over the game activity.

However, since non-games are not video games, we cannot directly take these elements into consideration (if we want to prove that flow is possible by finding a way to prove their existence in non-games). Either ways, there is a clear contradiction between what is required and what non-games intrinsically offer.

Discussion:

Non-games seem to defy some of the dimensions suggested by Csikszentmihalyi as well as the elements mentioned by Chen. We concluded that non-games by nature do not have imposed goals, challenges, and they lack a coherent structure. Does that mean that there is no possibility for non-games to support a flow state? We simply cannot take Chen's lens and apply it in non-games to answer our question, since non-game ≠ video games.

What we can do, however, is to clarify the absence of some the above-mentioned elements as an attempt to discover what non-games do offer:

1. If we take "Everything" for example, discovering and hearing the various voice-lines narrated by Alan Watts as well as discovering the various perspectives and interactions with the entities encompassed in the experience, compels the player to keep wandering around without any clear direction in an attempt to prompt the voice-lines and stumble upon new interactions. However, is that considered intrinsic reward? The answer is no. It is more emergently rewarding than intrinsic. The revolving core of this experience is discovery and finding own interpretation and meaning, if it was intrinsic, then the experience would explicitly reward the player in an unambiguous way. However, if it was not rewarding as a playing experience, then people would not play it. I am aware that perhaps the weirdly structured sequences in this experience are not for everyone. On the one hand, some will try to find meaning from the experience and count it as rewarding, and on the other hand, some will find the abstract nature of this game as repelling and uninteresting.
   In a simpler case such as Proteus, where the only thing one can do is to wander around in the procedurally-generated environment. The dynamic audio-visual aspect of the environment is definitely emergently rewarding and not intrinsic. It is the whole idea of the experience and its only engagement propeller. However, after examining some reviews about Proteus, it appears to have the same problem as previously mentioned; it is the subjective approach that determines whether the experience is rewarding enough to compel engagement from the player.

2. Regarding the second element, the absence of challenges is a clear characteristic of non-games. However, subjective challenges arguably exist in non-games. By subjective we mean challenges that the player sets to him/herself based on a set of personal preferences, or, challenges that are not intrinsically advocated by the experience. These challenges are set by the player and they derive from personal motivation. Discovering the different voice lines by Allan Watts in Everything is a subjective challenge; the goal is to discover, the challenge is trying to prompt the voice lines, the reward are the voice lines themselves. The continuous exploration of the procedurally generated world in Proteus is a subjective challenge; the goal is the discovery of the audio-visual aspect of the environment, the challenge is to keep walking, the reward is the satisfactory dynamic shifts. Making your own tune in Electroplankton is a subjective challenge; the goal is to make a tune that satisfies you, the challenge is how to create it, the reward is listening to your creation.

3. As for the final point, a sense of personal control exists in non-games. As we mentioned before, freeform creative play seems to be a common feature in non-games. Using the experience as a sandbox without limitations in the context that the game offers, means, having control over its systems. Therefore, the player is in full control in pursuit of self-expression. In Electroplankton, the player has control over the interaction with the various visual elements to create melodies that they like. In Jeff Minter's case - Trip-a-Tron allows the users to adjust and play with the various variables in order to produce a light synthesizer to their liking. In a harder-to-prove case like Proteus, the player can pursue different paths to discover the dynamic shifts in the audio-visual aspect.

In order to incorporate flow in non-games without breaking their constitution we require the following:

1. Maintain the arbitrary aspects of the genre: unstructured play (and room for creative play), no imposed goals and challenges, the outcomes, and valorization of the outcomes are determined by the player.
2. Find a link between what non-games intrinsically offer, and a direct connection to flow.

4.1 Are Non-Games Autotelic Experiences?

Possibly, this is the answer we were seeking all along.

"′Autotelic′ is a word composed of two Greek roots: auto (self), and telos (goal). An autotelic activity is one we do for its own sake because to experience it is the main goal." (Csikszentmihalyi, 1997, p. 117). As we previously discussed, non-games seem to offer only the experience itself as its own reward. In other words, there are no explicit rewards that the experience provides other than the experience itself. Meaning, we engage in the experience for its own sake. Therefore, some people find the appeal in non-games and others don't. Proteus as previously discussed does not offer anything but wandering around and experiencing the dynamic shifts in the audio-visual aspect of the environment. Some will find it extremely boring, others will find it enjoyable. As for the latter group, they consider proteus as an autotelic experience because, there are no explicit rewards other than the experience itself, there are no main goals other than to experience the experience itself. That's what differentiates non-games as just an experience, from non-games as an autotelic experience. The latter according to Csikszentmihalyi can definitely induce flow.

Moreover,
"Most people describe the autotelic experience as involving creative discovery and exploration […] The kind of interaction that produces autotelic experience is open-ended, and its outcome can be determined by the participant. It is not as predictable as a routine job, nor is it as unpredictable as reckless driving or slot machine playing. The outcome of an autotelic activity is uncertain ("like exploring a strange place"), but the actor is potentially capable of controlling it**"** (Csikszentmihalyi, 1975, p. 32)

Non-games as we placed them as a genre are:

1. Subsets of ***open-ended*** simulations.

2. Advocate for freeform ***creative play*** – ***exploration*** of the system in pursuit for self-expression.

3. The experience itself is ***subjectively rewarding*** – has no explicit challenges, rewards, or goals.

4. Unstructured, but the player has agency over the activity – ***discovery, and control*** of the outcome, and the valorization of it.

Therefore, non-games can be autotelic experiences. Therefore, flow can exist in non-games **if** the experience itself is rewarding enough to compel player engagement. Therefore, you can incorporate flow in non-games without breaking their constitution.

4.2 Thesis statement: "Flow can exist in non-games without breaking their constitution, **if,** the experience itself is the reward that compels the player's engagement."

5.0 Conclusion

According to Jesper Juul's classic game model, non-games as we described them are placed as borderline cases because they lack the "valorization of outcomes" feature. Therefore, non-games (assuming they qualify as a genre) are presumably a subset of open-ended simulations. Flow in games requires a balance between challenge and the skill of the player. Since non-games are not games and they do not contain any challenges, we required another method to answer our question. We inspected what non-games offer as an experience, and the only engagement propeller that non-games have is the experience itself. Non-games are emergently rewarding; thus, engagement is subject to the player's satisfaction from what the experience, provides as an experience. Upon inspection of what the experience offers, the different approaches to non-games determine the nature of the activity. If non-games were autotelic experiences, then they succeed to deliver the experience itself as the only reward that it offers. Therefore, at the moment of interaction, non-games become autotelic experiences. Otherwise, when non-games fail to deliver the experience itself as the reward, it disqualifies it from being autotelic, therefore, less engagement. To make non-games autotelic in the design sense, we need to make the play experience itself unstructured yet satisfying and make the nature of the interaction as the main engagement propeller.

In this thesis, we looked at the question from one lens out of the many. We could have further elaborated on the topic of flow in interactive experiences if we looked at the problem through the other many lenses. Whether it is other definitions, other approaches, other fields of study, the possibilities are limitless. The field is filled with gaps that have been forgotten, or often overlooked. However, a new generation of designers is here to push the medium further, to find a foundation in the chaos. And we naturally expect the next generation to do so as well. One cannot comprehend the astonishing leap that occurred in the last ten years. Whether it is pushing the limits of our virtual representation of reality, or the implications of it; how we learn, how we think, how we perceive things, how we interact, how we find things interesting, how we adapt to challenges, how we find fun in things, how we socialize. These are some of the many questions that have great potential to improve the field and strengthen its foundations.

Perhaps, if we moved the spotlight from trying to imitate reality to find answers that genuinely matter, we will eventually close the ever-growing gaps.

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