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Beyond Mechanics: An Actor-Network Perspective on Narrative Design in Indie Video Games

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Video-game stories are rarely written just once; they grow through ongoing conversations among people, tools, and market forces. This article, guided by Actor-Network Theory (ANT), examines narrative design in small and indie studios as a dynamic socio-technical network rather than a single-author craft. Drawing on more than 400 quotations from practitioners, six semi-structured interviews, and expert sources such as GDC talks, we identify thirteen recurring "actors" and visualize the strength of their connections. Four relationships prove especially influential: Story ↔ Player, Genre, Technology, and Budget/ Production plan. Our analysis shows how imagined players steer plot pacing, how genre conventions stabilize early ideas while shaping expectations, how engines and toolchains open new possibilities yet impose unseen limits, and how financial constraints can compress or redirect branching storylines. The study pushes discussion beyond mechanics, demonstrating that video-game narratives emerge from a rich interplay of creative, technical, and commercial forces rather than gameplay systems alone.

Las historias de los videojuegos rara vez se escriben una sola vez; crecen mediante conversaciones continuas entre personas, herramientas y fuerzas de mercado. Este artículo, guiado por la Teoría del Actor-Red (ANT), examina el diseño narrativo en estudios pequeños e independientes como una red sociotécnica dinámica, en lugar de un proceso de autoría individual. A partir de más de 400 citas de profesionales, seis entrevistas semiestructuradas y fuentes expertas como charlas de la GDC, identificamos trece "actores" recurrentes y visualizamos la intensidad de sus conexiones. Cuatro relaciones resultan especialmente influyentes: Historia ↔ Jugador, Género, Tecnología y Presupuesto/ Plan de producción. Nuestro análisis muestra cómo los jugadores imaginados orientan el ritmo de la trama; cómo las convenciones de género estabilizan ideas iniciales a la vez que moldean expectativas; cómo los motores y las cadenas de herramientas abren nuevas posibilidades pero imponen límites invisibles; y cómo las restricciones financieras pueden comprimir o redirigir tramas ramificadas. El estudio lleva el debate más allá de las mecánicas, demostran-

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Keywords: *video game, actor-network theory, narrative design, genre constraints, economic constraints.*

do que las narrativas de los videojuegos emergen de una rica interacción de fuerzas creativas, técnicas y comerciales, y no solo de los sistemas de juego.

Palabras clave: *videojuego, teoría del actor-red, diseño narrativo, restricciones de género, restricciones económicas.*

This article presents a segment of ongoing research that delves into video game narratives and the actors who shape the narrative design process. Our aim in this article is to reframe video game narratives as emergent outcomes of dynamic and interconnected design processes, instead of a static one. Instead of adopting structuralist or essentialist perspectives, we stress that narrative design is shaped by the interaction of many actors, such as designers, writers, technology, market forces, gameplay, etc. Each actor within this complex process shows varying degrees of influence, competing or cooperating in different ways to shape the final narrative experience of the video game. This reality is much more apparent in the case of video game entrepreneurs. To achieve our goal, we employ a deductive rather than inductive approach, not to validate our pre-constructed ideas about how narrative in games should function, but instead to let the voices of key actors involved in the narrative design process be heard. We strengthen our arguments by integrating multiple data collection techniques, such as books written by professionals, interviews that are present online with professionals, and last but not least, interviews we conducted with video game entrepreneurs.

In examining video game narratives, scholars have traditionally employed frameworks rooted in structuralist perspectives, which emphasize narrative coherence and fixed storytelling structures (Aarseth, 1997; Ryan, 2006), or auteur theory, which prioritizes the singular vision of individual creators (DeWinter and Kocurek, 2017; Parker, 2013). While structuralism aims to uncover universal narrative structures influenced by literary traditions and classic dramaturgy (Aristotle, trans. 1920; Jenkins, 2004), auteur theory foregrounds the creative autonomy and distinctive personal styles of individual developers or studios, drawing parallels with concepts from film studies (DeWinter and Kocurek, 2017). Although both approaches offer valuable insights, they often overlook narrative design's inherently collaborative and emergent nature specific to video games, particularly in indie game contexts where development processes are notably fluid and networked (Juul, 2019; Ruffino, 2020; Freeman *et al*., 2020).

Consequently, we borrow Bruno Latour's (2007) Actor-Network Theory (ANT) as our primary framework to uncover the complex relationships among

these actors. This framework helps us map the relationships between human and non-human elements, demonstrating how narratives are co-created through this network of influence. ANT as a sociological theory is a meta-theory that flattens the hierarchy between human and non-human actors with the aim of understanding the complexities of socio-technological processes. Unlike traditional sociological theories that focus primarily on human interactions, ANT has a total symmetry, making it much more favourable to understand the roles of non-human elements such as technologies, tools, materials, and regulations.

The key concepts of ANT are Actors, Networks, and Translation. Networks are formed by webs of actors' relationships that dynamically evolve as they interact. In the case of video game design, the whole process of design can be an example of a network. Actors (or actants) are the primary entities that interact within the network, and they can be either human or non-human. Applied to the network of game design, they can be game designers, players, game engines, software tools, gaming platforms, etc. Translation, on the other hand, refers to how actors align their interests, cooperate, and interact to achieve a stable network towards a common goal —such as producing a video game. Being an un-hierarchical, holistic approach, ANT aligns perfectly with the complex network of video game development. As Bruno Latour states (2017), "It is utterly impossible to understand what holds society together without reinjecting in its fabric the facts manufactured by natural and social sciences and the artifacts designed by engineers".

Previous ANT studies in game research have tended to center the player (Hung, 2016) or the game itself (Jessen and Jessen 2014) as primary actor of the network built. While both approaches were fruitful, our study, in contrast adopts ANT's principle of symmetry, treating all actors —human and non-human— as equally capable of affecting the network. Additionally, Cypher and Richardson (2006) apply ANT to analyse the gameplay experience of the final product (particularly in multiplayer online games) whereas our focus is on the production process itself. By not positioning any actor as a central or primary actor we identify a variety of actors involved in the narrative design process by simply "following the actors themselves" (Latour, 2007). We propose a novel, empirically grounded approach to narrative design as a negotiated, networked process.

In this article, by leveraging ANT as our main analytical framework, we present a novel way of understanding the narrative design in video games. Rather than portraying it as a static, foolproof, deterministic process, we demonstrate that it is, in reality, a dynamic and emergent network of multiple actors both competing and collaborating. With a data-driven approach from professionals, we also identify the most important actors, which will be presented in the following section of the Research Methodology. This shift from seeing narrative design as a fixed process to a network of actors, as well as the identification of the key actors within the network, is central to the paper's contribution to the field.

RESEARCH METHODOLOGY

This section outlines our research process, resource selection, data collection, analysis, and network construction. By 'network construction', we mean identifying key actors within the narrative design process and mapping their relationships as well as their translations, guided by ANT. As stated in the introduction, we centred our research on the perspectives of industry, therefore it is grounded in three essential resources: non-academic books authored by professionals, open-access videos and seminars, and interviews with video game entrepreneurs. For books, we selected works including *Slay the Dragon: Writing Great Video Games* (Bryant and Giglio, 2015), *Narrative Design for Indies* (McRae, 2017), *The Ultimate Guide to Video Game Writing and Design* (Dille and Platten, 2008), *Video Game Storytelling* (Skolnick, 2014), and *The Game Narrative Toolbox* (Heussner *et al*., 2015). For open-access videos and seminars, we utilized a variety of resources, with particular attention to materials from the *Game Design Roundtable* and presentations at the *Game Developers Conference* (GDC). Lastly, we interviewed six small-studio professionals: a Roblox IP adaptor, a solo creator of a 16-bit JRPG, a hyper-casual mobile game designer, a lead developer of a social card-battler, a trivia-puzzle producer, and a 12-person director of a narrative-adventure game. We conducted semi-structured interviews online, recorded with participant consent, transcribed verbatim while anonymising all personal and studio identifiers. Interviews lasted approximately 60 minutes. We focused on small-sized game development studios to enable a localized ANT analysis: compact teams allow us to trace translations end to end across the production pipeline, where enrolments, negotiations, and constraints are more directly observable. Because resources are limited in such settings, actors tend to collaborate and negotiate more often than AAA organizations.

After data collection, we conducted a qualitative coding process informed by grounded theory techniques and guided by Actor-Network Theory, similar to Jessen and Jessen (2014). We iteratively annotated practitioner discourse and extracted quotes directly related to video-game narrative, yielding over 400 samples. Through open coding, initial themes emerged in developers' own terms including genre agnosticism, ludonarrative dissonance, player synchronization, branching narrative, physical constraints, and others. We then conducted axial coding (Corbin and Strauss, 2014) to relate these themes and identify the actors that organize them. For example, because cost and budget issues emerged across branching narrative, player synchronization and physical constraints, axial coding linked these themes to the actor Price (Cost/Money) as a mediating influence. The identified actors include Story, Mechanics (or Gameplay), Emotions, Tone (or Rythm), Player, Character, Production Plan, Context, Genre, Aesthetics, Level Design (or In Game Environment), Technology (or Game engine), and, notably, Price (or Cost/Money).

Next, we re-categorized the corpus by actor, selecting quotes that referenced two or more actors to capture inter-actor dynamics. Co-mentions within the same coded segment were aggregated into a frequency-based relationship matrix (Table 1). For instance, the Story-Genre pair co-occurred 10 times, whereas the

Story-Player co-occurred 31 times. We treat frequency as an indicator of salience, not causality. This pipeline of open coding, axial coding, actor definition and co-mention aggregation operationalized ANT's directive to —follow the actors— and provided the empirical basis for the network of narrative design reported here. Subsequent semi-structured interviews were used to elaborate and refine the identified actors and their relationships.

While our analysis reveals many relationships, this essay will focus specifically on those involving the actor of Story. Although Mechanics (or Gameplay) as an actor has a significant impact on Story, we do not discuss this relationship further, as it has been extensively examined in previous studies (e.g., Hocking, 2007; Ryan, 2006; Crick, 2011). That said, the presence of Mechanics in the relationship matrix underscores its central role which we do not dispute. Instead, we acknowledge this centrality but move beyond that, in line with the article's title.

To maintain a manageable scope, we will focus primarily on the most significant connections: Story's relationships with Player, Genre, Technology, and the combined influence of Price and Production Plan due to their intrinsic interconnectedness.

Table 1. Relationship matrix of actors in video game narratives

	Story	Mechanics	Emotion	Tone and Rythm	Player	Character	Production Plan	Context	Genre	Aesthetics	Level Design	Technology	Price
Story	0	19	1	7	31	5	13	5	10	5	8	12	7
Mechanics	19	0	3	3	4	5	0	3	3	1	2	2	3
Emotion	1	3	0	0	7	1	0	0	0	1	2	0	0
Tone and Rythm	7	3	0	0	1	0	0	0	0	0	0	0	0
Player	31	4	7	1	0	14	0	1	4	1	3	1	4
Character	5	5	1	0	14	0	0	0	0	0	1	0	0
Production Plan	13	0	0	0	0	0	0	1	0	1	2	0	0
Context	5	3	0	0	1	0	1	0	1	0	0	0	0
Genre	10	3	0	0	4	0	0	1	0	1	0	1	0
Aesthetics	5	1	1	0	1	0	1	0	1	0	1	3	1
Level Design	8	2	2	0	3	1	2	0	0	1	0	1	0
Technology	12	2	0	0	1	0	0	0	1	3	1	0	1
Price	7	3	0	0	4	0	0	0	0	1	0	1	0

Source: Own elaboration.

STORY AND PLAYER: THE ROLE OF PLAYER IN NARRATIVE DEVELOPMENT

The Player —the most complex actor in a game's narrative network— both shapes and is shaped by the story. We conceptualize the Player as occupying three overlapping roles: the Imagined Player, the Active Player, and the Perceiving Player.

Imagined Player: Designing with Player Expectations in Mind

The Player's influence on the story begins well before development. Like any medium, game development requires creators to target a specific audience —a subset of potential players. This involves selecting from a wide range of player attributes, such as age, attention span, and other demographic or psychographic factors that directly influence how the narrative is crafted and delivered. For example, younger audiences on platforms such as Roblox often require quicker narrative hooks to remain engaged. As Bryant and Giglio observe, "Authors, filmmakers, and dramatists can expect most of their audience to pay attention most of the time. Sadly, with games, it's different" (2015). Developers must balance this by designing stories that capture attention immediately without overburdening players with exposition. During Interview 1, the interviewee remarked, "If you keep them waiting too long for something, they get annoyed. Sometimes, you don't even get to finish the introduction. Before they even reach the action, they already ask, 'What am I doing here? How many more NPCs do I have to listen to?' and they might never return". Interviewee 4 also emphasized a similar need for an instant bond: "There's a relatedness side —we want players to feel a bond. That's why we created a chunky, fatherly king —big belly, big hands, short legs, a huge, friendly grin". To respect the medium's interactive nature, player immersion must be established early because, unlike passive media, video games require players to actively engage with the narrative to progress it. Because of this requirement, the Imagined Player influences the design choices toward a more fast-paced and engaging experience.

Beyond accounting for the target audience's attributes and the medium's interactive nature, the Imagined Player presents another challenge: moral choices. Giving players choices enhances their sense of agency, which is essential in video games. This is particularly true for ethical decisions, which enhance the game's realism and deepen player engagement. However, balancing moral choices within gameplay is far more challenging than balancing other mechanics like weapon types or skill trees. The Imagined Player does not always align with the designer's moral assumptions, as players may interpret situations and choices in unexpected ways. Players approach narrative choices based on their perspectives, influenced by personal contexts and experiences. This variability means that the exact story moment can be interpreted in multiple ways, depending on the player's background and prior interactions within the game. What one player sees as morally 'good' may be interpreted quite differently by another. Therefore, the story must allow multiple angles to handle the fact that

each player's prior understanding will shape how they engage with the story. One critical aspect to consider is ensuring that moral choices are not tied too tightly to gameplay in a way that punishes players for deviating from 'proper' or 'good' moral paths (Heussner *et al.*, 2015). Moral decisions can diminish the player's overall experience if they lead to overly punitive gameplay outcomes. To maintain engagement, the game must provide balanced consequences for all paths, whether good, bad, or neutral. Thus, game design must carefully balance the effects of moral choices, allowing players to experience meaningful gameplay consequences without being locked into negative outcomes that may reduce the game's appeal. Ultimately, the narrative must remain flexible, allowing diverse moral perspectives while avoiding rigid, linear judgments. Ensuring that gameplay mechanics support this flexibility is crucial in creating an immersive experience where the player's choices truly matter without undermining their sense of agency.

Active Player: Shaping the Narrative Through Participation

Video game players can actively participate in the development process using channels like playtesting, early access games, and community feedback. These interactions, which are highly unlikely with other media, provide developers with early insights into player behaviour, preferences, and experiences, thus allowing them to refine both narrative and gameplay.

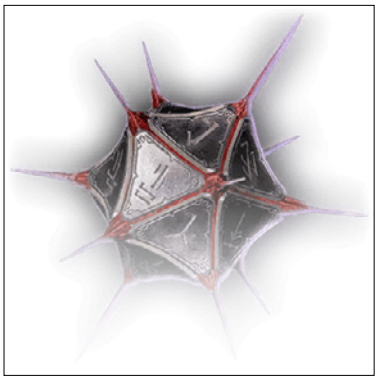
Playtesting also puts narrative elements to the test and shows how they are going to work in different gameplay scenarios and therefore shape the story. Interviewee 1, for instance, gave an example of their play testers being involved even in minor details that might be missed by developers, such as the dresses of one of the main characters. Their playtesters even show their happiness by saying, "This game is clearly made by someone who knows the original work". This led the team to focus more on the original work while working on the adaptation. In a separate play-test context, Interviewee 6 observed: "In our forest scene, we noticed players clicking on everything, so we added an interaction to every object —some play a sound, some run an animation, some trigger a line. Now players spend much longer in that forest".

This early feedback is not limited to playtesting; early-access and beta releases also let players shape a game in progress. When used well, early access can dramatically improve a title. Larian Studios, while developing Baldur's Gate III, released only Act I (less than one-third of the final game) to collect narrative and gameplay feedback. Director Swen Vincke later noted that a single item —Shadowheart's "Mysterious Artifact" (Figure 1)— produced far more narrative permutations than anticipated, prompting the team to adjust it prior to launch (GameSpot, 2022). By iterating that feedback, Larian was able to harmonise story and mechanics, ultimately delivering a critically acclaimed game.

Another way that the Active Player shapes the narrative is by engaging through forums (such as Reddit), developer blogs, and other community platforms. These platforms, especially when facilitated by developers, allow potential players to co-create the narrative experience by giving feedback or insight. This interaction

shapes the developer's understanding of the Imagined Player, thus evolving the game with the player's expectations.

Figure 1. Shadowheart's Mysterious Artifact from Baldur's Gate 3



Source: https://bg3.wiki/wiki/Mysterious_Artefact.

While our analysis merges community feedback, playtesting, and forums into the broader role of the Active Player. We acknowledge that these factors also can be regarded as distinct actors, particularly in AAA or AA studios. However, in indie studios, these participatory channels are often informal and constrained by limited resources. Future studies focusing on larger studios or games may expand the actor network to capture these dynamics more comprehensively.

Perceiving Player: The Player as Narrative Interpreter

Even though this article primarily focuses on how games are made, the Perceiving Player —the person who finally makes sense of the story— remains central. We begin by picturing an Imagined Player to guide every design choice, but real success shows up only when that picture matches the player in front of the screen. To draw them in, designers try to align the player's knowledge with the hero's: wiping the hero's memory like in Zelda: Breath of the Wild, allowing players to revisit key moments like in Horizon Zero Dawn, or starting with a long intro like in Grand Theft Auto VI. The closer that match is, the easier it is to lose yourself in the game. Put simply, the Imagined Player steers the design, the Active Player drives the moment-to-moment action, and the Perceiving Player brings it all together, turning plans and play into a story that resonates.

STORY AND GENRE: HOW GENRE CONSTRAINS AND SHAPES NARRATIVE DESIGN

Genre as a foundational framework is an active actor within the network; it influences and is also influenced by other actors such as mechanics, context, and

players. Unsurprisingly, it is not a passive entity lingering in the background, rather it actively participates in the narrative design process by aligning with the story to shape the final narrative experience. As Skolnick (2014) notes, "A new game almost always starts with a decision on genre, followed by a concept within that genre... before there is a game story, elements such as genre, core mechanics, and context are already established".

This foundational aspect of the genre positions it as a stabilizing force that guides early design decisions and achieves a translation of the interests of the Story within the network. Genre does not diminish the importance of Story, instead, it enriches it by anchoring it more deeply into the game's identity and overall experience.

Genre as Perspective

Perspective is a visual choice and a genre-defining element that significantly shapes how narratives are constructed and experienced. Whether it's a first-person shooter (FPS), third-person shooter (TPS), or isometric role-playing game, the chosen perspective shapes how players engage with both the story and characters.

Figure 2. A screenshot from Half-Life 2, first view of City 17

Source: https://www.dsogaming.com/videotrailer-news/first-half-life-alyx-mod-ports-half-life-2-city-17-to-source-2-engine/.

Immersive simulations (immersive sims) —classified as sub-genres of FPS— are usually associated with player agency and environmental interaction. This association is, of course, no coincidence; the first-person perspective is often the most effective for integrating players into the game world since it is also the most natural perspective due to closeness to human vision. It minimizes the gap between the player and the character, creating a sense that the player is truly inhabiting the character's role. For example, Half-Life II, arguably the most successful example of this genre, immediately establishes its oppressive atmosphere by showing the

massive Citadel tower looking over the city in the iconic entrance scene of City 17 (see Figure 2). This structure serves a dual purpose: it foreshadows the player's final confrontation and embodies the Combine's dominance and control over humanity.

On the other hand, the third-person perspective allows the players to observe the protagonist from a distance, offering a wider view of both their actions and surrounding environment. This perspective is ideal to show the protagonist's personality, abilities, and condition within the context of the game world. Third-person titles reveal character traits and physical interactions through animations, making extensive expositions unnecessary (Heussner *et al.*, 2015). Therefore, it is especially suitable for action-adventure games.

Games like *GTA V*, *Just Cause*, *Uncharted*, and *Tomb Raider* utilize third-person perspective to show off large, intricate worlds and highlight the protagonists' interactions with these environments. This cinematic quality makes third-person games well-suited for action-heavy narratives, and it's no surprise that many of these titles have inspired or been adapted into Hollywood films[1]. The third-person viewpoint's capacity to visually convey character development and world-building through subtle details and expansive vistas helps explain its popularity in mainstream action genres.

Figure 3. An action sequence from 'Tomb Raider'

Source: https://www.syfy.com/syfy-wire/tomb-raider-definitive-edition-holds-up-for-easy-mode-gamers.

1 Notable examples include *Tomb Raider* (adapted into films in 2001, 2003, and 2018), *Prince of Persia: The Sands of Time* (2010), *Uncharted* (2022), and *Resident Evil* (numerous adaptations since 2002).

Genre as Expectation

The other function of genre is to set and shape the player's expectations. When players engage with a game, they usually approach with pre-established expectations based on its genre, which eventually influences their anticipation of the narrative as well. As the Interviewee 2 explained, players expected his game to be "more like JRPGs… too story-heavy… there's gotta be a good story". Aligning the narrative depth and style with expectations of the course is essential. If the genre prioritizes gameplay, subtle storytelling that complements the mechanics can be far more effective than excessive exposition. As Heussner advised, "keep the game genre and players' expectations in mind. They don't need extensive story or character development; quick details that highlight or reinforce gameplay or specific mechanics will suffice" (Heussner *et al*., 2015).

Genres like Roguelikes and Soulslikes[2] present unique cases where mechanics and themes are tightly interwoven with the narrative. Death itself becomes a narrative tool in roguelike games characterized by procedurally generated levels and permadeath. Titles like *Dead Cells* and *Hades* use death to advance the story. In *Hades*, for example, each death is not a failure but an integral part of the story's progression. After every death, the protagonist returns to the House of Hades, where new dialogues and character developments unfold, enriching the narrative and expanding the story world. This structure makes "losing feel like a win" (CSGConf, 2021). The cyclical nature of death and rebirth is central to both the character's development and the thematic resonance of the game, reinforcing the idea of perseverance and growth through repeated trials.

Similarly, Soulslike games —known for their high difficulty, and dark, oppressive worlds centred on themes of struggle, loss, and perseverance— challenge players with frequent deaths and the loss of accumulated progress (such as souls), reinforcing these harsh and existential themes. Even a game like Kena: Bridge of Spirits, which has lighter and more family-friendly aesthetics and a more forgiving death penalty, features challenging combat, and explores similar themes of loss, death, and corruption (see Figure 4). The influence of the Soulslike genre shapes the narrative in Kena, turning it towards darker, more mature themes, even with its bright and approachable setting.

2 The term "game-name-likes" refers to game subgenres defined by specific mechanics or design philosophies established by a genre-defining game. Roguelikes are named after the game Rogue (1980), which introduced procedurally generated levels, turn-based gameplay, and permadeath. Similarly, Soulslikes derive from *Dark Souls* (2011), which popularized punishing difficulty, intricate level design, and a narrative conveyed through environmental storytelling.

Figure 4. Dark Souls 1 Remastered (left), Kena: Bridge of Spirits (right), retrieved from the official PlayStation store

Source: Official PlayStation network. Left (Dark Souls Remastered): https://image.api.playstation.com/cdn/EP0700/CUSA08495_00/COYF3JBI46ftkG7tIdTjQg0v9aZ2378N.png?w=440&thumb=false. Right (Kena: Bridge of Spirits): https://image.api.playstation.com/vulcan/ap/rnd/202102/2307/kQzDCY5RCrSXCeeFjPGUzkGI.png?w=440&thumb=false

On the other hand, real-time strategy (RTS) games, with their heavy tactical decision-making and resource and unit management mechanics, usually focus on larger-scale narratives in either historical or fictional timelines. This genre often spans long time intervals, sometimes rooted in real-world events, as in *Age of Empires and Rome: Total War,* or sometimes set in fictional universes, as in *Warcraft*, *Starcraft*, and *Total War: Warhammer*. The strategic nature of the RTS genre tends to narrate civilizations, empires, and warfare where the player commands entire factions or armies, rather than individual character development stories.

Balancing narrative cohesion with player freedom presents a challenge often influenced by genre expectations. Open-world games, for instance, offer vast environments for exploration but may sacrifice a tightly woven narrative in favour of player autonomy. As one developer notes, "Players might prefer gameplay to story and are willing to accept a disjointed narrative for the reward of having total freedom". (Heussner *et al*., 2015). Environmental storytelling and optional quests often compensate in these cases, allowing developers to immerse players without forcing a linear narrative structure.

Moreover, genre acts as a frame that shapes narrative structure, themes, and character development. Different genres necessitate distinct storytelling approaches. For instance, writing for an action RPG often involves focusing on a "larger-than-life, overpowering character", with the narrative centred on the player's journey toward immense power (Heussner *et al*., 2015). In contrast, Massively Multiplayer Online games (MMOs) involve many players sharing the same world, making it impractical for any single player to be portrayed as the sole hero. Therefore, MMOs often apply the traditional three-act structure to side quests and raids rather than to the main storyline (Skolnick, 2014).

STORY AND TECHNOLOGY: THE INFLUENCE OF GAME ENGINES AND TOOLS ON NARRATIVE

Narrative designers often begin with a creative vision, but in practice, that vision is shaped —and sometimes constrained— by technological limitations. Game engines[3], artificial intelligence systems (or algorithms), and many other technological tools that are utilized in the game development process influence stories, their directions and far more frequently their scope. Technology sets the boundaries within which narratives can be constructed, it essentially frames how stories are perceived and told, and often reduces them to what can be implemented within existing constraints.

Technology sets the stage for video game narratives, giving developers the tools and frameworks to tell their stories. But technology isn't just a passive player; it's always changing, often for reasons beyond storytelling. In the early days, when games like Pong were new —technology wasn't built with gaming in mind. Games were more of an experiment back then, borrowing technology from other industries rather than pushing innovation themselves (Kent, 2010). After video games grew into a massive global industry, even surpassing Hollywood in revenue, the role of technology shifted significantly. Platforms like Meta Quest and engines like Unreal Engine, for instance, are specifically designed for video games; they are designed to meet the commercial demands of game developers and players. Gaming emerged as a distinct sector, with technology evolving in tandem to drive its growth.

Developers often face a choice between their story and technical feasibility, facing compromises that can alter the story's original direction. The necessity to optimize for different platforms, manage load times, and ensure smooth gameplay forces designers to adapt their narratives to fit within these technical parameters. These technical limitations might yield creative workarounds. For example, one developer explained that a simple AI pathfinding behaviour, such as zombies relentlessly pursuing the player even at the cost of self-destruction, can unintentionally communicate themes like desperation or hunger (Skolnick, 2014). This is one reason why older games often featured enemies with simplistic behaviours, such as zombies or oversized insects; advanced pathfinding was costly to implement, leading to less complex AI interactions. A similar constraint comes from platform advertising rules (Apple Store). As Interviewee 4 explained, "To be allowed to run that ad, you have to put the scene in the game, so we squeezed a 'save-the-king' mini-level into the build —just so we could say 'look, this screenshot is really from the game'". Similarly, the limitations of game

3 Game engines are software frameworks that provide developers with tools and functionalities to build and render video games. They handle core tasks such as graphics rendering, physics simulation, and input processing. Popular game engines include Unreal Engine, Unity, and Godot.

engines may prevent certain narrative techniques, such as quick cuts to new locations or complex environmental interactions, due to memory and asset-loading constraints (Dille and Platten, 2008). These technological limitations shape not just which stories can be told but also how they unfold, revealing certain aspects of the narrative while concealing others.

Implementing complex narrative features often requires significant technical resources. A seemingly simple narrative idea like "let's make our hero swim" can have a huge impact on the schedule and budget of a game. It requires creating new animations, adjusting physics, and modifying environments —all of which demand significant development time and cost (Bryant and Giglio, 2015). This tension between technical and creative goals can lead to conflicts as programmers and artists debate what is possible and what fits the narrative vision. Interviewee 1 shared how these disagreements arise when one side sees technology as an instrument for achieving goals while the other recognizes its deeper influence on shaping narrative possibilities.

Interviewee 2 discussed how the engine's limitations and the availability of community assets influenced his character and story choices. Using existing assets, he shaped the game's narrative around what was technically possible, demonstrating how technological constraints can inspire creative solutions and determine the story's direction. After that, they also shared how they had to hire someone to customize airship mechanics and user interface elements to better align with the aesthetics and feel of more modern RPGs, like those found in *Final Fantasy VI*. These examples highlight how engine limitations required the developer to balance creative vision with technical constraints.

Historically, technological limitations have profoundly impacted game design and narrative delivery. One developer reflected on how older games were much harder, primarily because saving progress was technically challenging (Game Wisdom, 2021). This limitation led to narratives that required players to master the game in a single run, creating a different kind of tension and storytelling experience compared to modern games with frequent save points and checkpoints. Here, the technical limitation of lacking a save system revealed a distinct narrative experience, one in which tension and consequence were central themes.

In conclusion, technology is not a neutral backdrop for narrative but an active participant in its creation. Game engines, AI, and other tools shape narratives by enabling certain possibilities while constraining others. By recognizing how technology frames narrative possibilities and reveals specific paths, developers can better understand how to craft innovative and technically feasible stories. Through creative engagement with these technological boundaries, developers can explore new ways to tell stories that resonate within and sometimes challenge the technology framework. However, technology is just one Actor within the broader network. Economic forces, such as Money and production plans, also play a pivotal role, actively shaping narratives through the realities of budget and market demands.

Story, Price, and Production Plan: Balancing Narrative Ambition with Budgetary and Production Constraints

Game developers often need to scale back their narratives to fit within budgetary and production constraints. Interviewee 1 shared their experience: "When we encountered the first problem in production, what we did was to reduce the environment and instead build other mechanics". They also explained how they had initially aimed to include all factions in a fantasy adaptation but, due to limited time and budget, had to cut content and merge factions: "We didn't have the time and budget for it, so instead, we cut the strongholds of one faction and put them together even though they are rivals, by adding a common enemy and saying that common enemy destroyed the stronghold".

Economic limitations can compel developers to simplify or linearize narratives originally conceived as branching, multi-path stories, as Heussner *et al*. (2015) noted, "Budget does impact how much actual narrative choice can be offered... without development costs mushrooming". Unlike in film production, where scripts are typically finalized before shooting begins, game narratives often evolve during development. Dille and Platten (2008) stated, "Games... rarely go into production with a script. In fact, we've never heard of it". This iterative process allows for adjustments based on technological capabilities, team input, and resource availability, but also makes narratives more susceptible to changes driven by economic constraints. During the development of Far Cry, for example, the team had to cut significant portions of the story: "We had a story written... we cut half the story when we put it in the game" (Game Wisdom, 2020). Economic pressures can lead to substantial modifications in the narrative. Interviewee 6 provided a contrasting example: a teammate spent considerable time animating a friendly barista for a café scene. Because that character's fully modelled face remained on-screen longer than any other NPC, the team opted to revise the plot to preserve the effort, rather than discard the work. They rewrote the mid-game twist, so the barista became central to a hidden subplot—and, according to the interviewee, "the story finally clicked".

Adapting narratives under constraints is essentially a collaborative effort. Narrative designers work closely with game designers, level designers, artists, and programmers. As Bryant and Giglio (2015) explain, drawing on insights from Steve Gaynor and Haris Orkin, "Video game writing does not happen in a vacuum... It's really a collaboration between all of it because the story is told by every part of the game, as much by the level design and the art as it is by writing". Since teamwork is essential when economic constraints force changes, narrative designers advocate for the story throughout this process, remaining involved at all stages as Heussner explained, "I see the 'narrative designer' as being... an integrated part of the game development team. [They] remain involved as an advocate for the story throughout testing and post-production". (Heussner *et al*., 2015) By staying engaged, they help navigate challenges posed by budget and production limitations, finding creative solutions within practical constraints.

Creative choices do not solely drive narrative design in games but are often shaped by how the game will be perceived and valued in the market.

Developers frequently adapt narratives based on the perceived value they can offer players relative to the game's price. One developer asked, "Are you giving them enough to... if it's a four-dollar game, are you essentially giving them an hour of gameplay?" (Game Wisdom, 2020 November). Narratives are shaped by considerations of perceived value, with longer or more replayable storylines often prioritized to meet player expectations.

Replayability becomes a cost-effective strategy to enhance perceived value without significantly increasing production costs. As Dille shared, "A great game is replayable, and each replay can give the player a different experience". (Dille and Platten, 2008). Developers can offer extended engagement without requiring extensive additional content by designing narratives that encourage multiple playthroughs with different outcomes.

Marketing considerations also play a significant role in shaping game narratives. Interviewee 3 stated, "We generally proceed based on being marketable... we put (story) conflict into it so that it becomes marketable". As an example, they also referenced the kinds of advertisements people encounter daily, "Are you an Angel or a Devil?", "Are you poor or rich?". Narrative elements are often included or adjusted based on their potential appeal to players rather than solely for storytelling purposes. This is particularly true in casual games, where narratives are often created as marketing tools that attract and retain players: "Mostly we use narrative... on the casual side more for marketing purposes". Interviewee 5 described the same logic from an ad-tech perspective: "In mobile ads, the first three seconds are critical; you can even tuck a tiny narrative inside the playable itself".

The critical first impression a game makes on players significantly impacts its success. Interviewee 2 emphasized the importance of the first hour of gameplay, stating that it needs to have a strong hook and high polish to prevent players from quitting or seeking refunds: "The first hour of your game needs to have like a nice hook... because if it doesn't, then something like 90 % of the gamers are going to quit within the first hour and either refund it or just stop playing it". This focus on early engagement often leads developers to allocate resources to ensure the initial narrative experience is compelling, sometimes at the expense of later content.

The narrative does not passively submit to economic forces but actively negotiates its role within the network. It adapts to the realities of production and market demands by employing several strategies, transforming itself to align with these constraints while retaining its integrity. Video game narratives are, thus, not merely the products of artistic inspiration but also the outcome of complex negotiations between creative ambition and economic necessity. Far from being neutral creations, they reflect the production environments in which they are made, constantly adapting to market demands and challenging the integrity of original creative visions.

CONCLUSION

This article aims to demonstrate that video game narrative design is a dynamic, emergent process shaped by a network of diverse actors rather than a fixed,

predetermined script. By applying Actor-Network Theory (ANT) as a guiding framework, we have provided a nuanced understanding of how game narratives are co-created through the continuous interactions between designers, technological tools, market forces, and player feedback. ANT enables us to see beyond traditional, linear views of storytelling, framing narrative design instead as a fluid process that evolves throughout development.

Through a data-driven approach grounded in industry insights, we identified the most important actors within this network and explored how their roles shift and align over time. Designers may envision a narrative direction, but technical constraints, such as the capabilities of game engines or feedback from playtesters, often lead to unexpected adjustments. These actors —Story, Player, Genre, Technology, and Price— play crucial roles, and their complex relationships are key to understanding how narratives emerge.

The relationship between the Story and the Player emphasized the agency of the player and showed how players are actively part of the narrative design process. Whether the Imagined Player guides early design or the Perceiving Player interacts with the final product, player input continuously shapes the story's trajectory. The role of Genre in narrative design has been explained in detail, as a constraint, a convention, an expectation setter, and also as an artistic choice. Whether as a perspective choice or thematic choice, Genre shapes the story greatly. Additionally, Technology—from game engines to AI—sets the stage, enabling or limiting narrative possibilities while also revealing unintended thematic elements through technical constraints. Lastly, the relationship between price, production plan and story revealed how economic forces directly impact narrative scope and how designers should adapt to budgetary limitations. These relationships, in the end, strengthened our argument that video game narratives are not static products of a singular creative vision but are instead continuously refined by dynamic interactions of both human and non-human actors.

In reframing video game narratives as collaborative constructs, this study contributes to the ongoing discourse by offering a more holistic view of narrative design in video games. Detecting and understanding the most influential actors in this process is crucial for scholars and practitioners. It enables a deeper appreciation of how stories come to life in games and how the balance between narrative, gameplay, technology, and economic constraints can shape player experiences.

Our analysis is localized to small indie studios and is analytically transferable to similar contexts. AAA and AA environments are likely to introduce more formalized actors (e.g., publishers, platform QA, localization) and redistribute agency. A comparative replication could reveal which relations persist and which new ones become decisive. By adopting this approach, we open the door to future research investigating the complex relationships between actors involved in game development. For practitioners, it highlights the importance of considering all actors —whether human or technological— throughout the design process, providing valuable insights for crafting cohesive and engaging narrative experiences. Future work could delve deeper into the Translation Process of Actor-Network Theory, exploring how different actors negotiate their

roles and influence outcomes over time. Additionally, researchers could explore how emerging technologies reshape these relationships, further enhancing our understanding of narrative design dynamics.

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References

Aarseth, Espen (1997). *Cybertext: Perspectives on ergodic literature*. Johns Hopkins University Press. https://dl.acm.org/doi/10.5555/265941

Aristotle (1920). *Poetics*. Clarendon Press.

Bryant, Robert Denton and Giglio, Keith (2015). *Slay the dragon: Writing great video games*. Michael Wiese Productions.

Corbin, Juliet and Strauss, Anselm (2014). Basics of qualitative research: Techniques and procedures for developing grounded theory. Sage Publications.

Crick, Timothy (2011). The game body: Toward a phenomenology of contemporary video gaming. *Games and Culture*, *6*(3), 259-269. https://doi.org/10.1177/1555412010364980

CSGConf (27 April 2021). CSGC 2021: Integrating mechanics and narratives [Video]. YouTube. https://www.youtube.com/watch?v=DXmxL8PiVK8

Cypher, Mark and Richardson, Ingrid (2006). An actor-network approach to games and virtual environments. In *Joint International Conference on CyberGames and Interactive Entertainment 2006* (CGIE2006).

DeWinter, Jennifer and Kocurek, Carly A. (2017). "Aw fuck, I got a bitch on my team!": Women and the exclusionary cultures of the computer game complex. In Kishonna L. Gray, Gerald Voorhees, and Emma Vossen (Eds.), *Gaming representation: Race, gender, and sexuality in video games* (pp. 57-73). Indiana University Press. https://www.jstor.org/stable/j.ctt2005rgq?turn_away=true

Dille, Flint and Platten, John Zuur (2008). *The ultimate guide to video game writing and design*. Lone Eagle Publishing.

Freeman, Guo; McNeese, Nicholas; Bardzell, Jeffrey, and Bardzell, Shaowen (2020). "Pro-Amateur"-driven technological innovation: Participation and challenges in indie game development. *Proceedings of the ACM on Human-Computer Interaction*, 4(GROUP), 1-22. https://doi.org/10.1145/3375184

Game Wisdom (26 June 2020). Making your narrative and game mechanics work together | GameDev Roundtable [Video]. YouTube. https://www.youtube.com/watch?v=s524frHFw10

Game Wisdom (30 November 2020). Adding value to your game design | GameDev Roundtable Cast [Video]. YouTube. https://www.youtube.com/watch?v=cZykzZ_ksFE

Game Wisdom (27 August 2021). Debating difficulty in game design | Game Dev Roundtable [Video]. YouTube. https://www.youtube.com/watch?v=NGrDnnoLK4Q

Game Spot (3 June 2022). The box that broke *Baldur's Gate 3* [Video]. YouTube. https://www.youtube.com/watch?v=BHW_KF-P7i8I

Heussner, Tobias; Finley, Toiya Kristen; Hepler, Jennifer Brandes; and Lemay, Ann (2015). *The Game Narrative Toolbox*, Focal Press. https://doi.org/10.4324/9781315766836

Hocking, Clint (7 October 2007). Ludonarrative dissonance in *BioShock*. Click Nothing. http://clicknothing.typepad.com/click_nothing/2007/10/ludonarrative-d.html

Hung, Aaron Chia Yuan (2016). Beyond the player: A user-centered approach to analyzing digital games and players using actor-network theory. *E-Learning and Digital Media*, *13*(5-6), 227-243.

Jenkins, Henry (2004). Game design as narrative architecture. In Noah Wardrip-Fruin and Pat Harrigan (Eds.), *First person: New media as story, performance, and game* (pp. 118-130). MIT Press.

Jessen, Jari Due and Jessen, Carsten (2014). Games as actors-interaction, play, design, and actor network theory. *International Journal on Advances in Intelligent Systems*, *7*(3-4), 412-422.

Juul, Jesper (2019). *Handmade pixels: Independent video games and the quest for authenticity*. MIT Press.

Kent, Steven L. (2010). *The ultimate history of video games. From pong to Pokémon and beyond: The story behind the craze that touched our lives and changed the world*. Crown Publishing Group.

Latour, Bruno (2007). *Reassembling the social: An introduction to actor-network theory*. Oxford University Press.

Latour, Bruno (2017). On actor-network theory: A few clarifications, plus more than a few complications. *Philosophical Literary Journal Logos*, *27*(1), 173-197. https://doi.org/10.22394/0869-5377-2017-1-173-197

McRae, Evan (2017). *Narrative design for Indies: Getting started*. Fiction Engine.

Parker, Felan (2013). Indie game studies year eleven. In *DiGRA '13 – Proceedings of the 2013 International Conference on the Digital Games Research Association*. http://www.digra.org/digital-library/publications/indie-game-studies-year-eleven/

Ruffino, Paolo (2020). *Independent videogames: Cultures, networks, techniques and politics*. Routledge. https://doi.org/10.4324/9780367336219

Ryan, Marie-Laure (2006). Computer games as narrative: The ludology versus narrativism controversy. *Dichtung Digital. Journal für Kunst und Kultur digitaler Medien*, 36, chapter 8, 1, 1-1/276-297. *medienebene*. https://doi.org/10.25969/mediarep/17696

Skolnick, Evan (2014). *Video game storytelling: What every developer needs to know about narrative techniques*. Watson-Guptill.