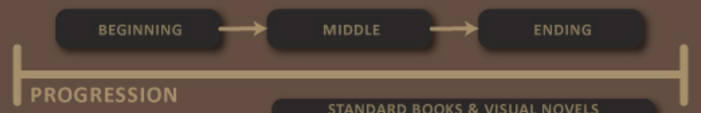
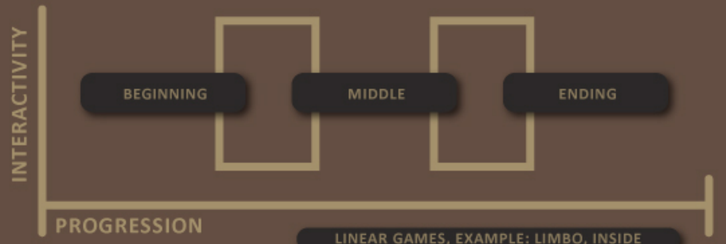


STANDARD BOOKS & VISUAL NOVELS

1 DIMENSIONAL STORY STRUCTURE: LINEAR

LINEAR PROGRESSION

The most familiar to us, linear storytelling is the easiest to record because it does not require input from the viewer/reader and instead follows a straight trajectory from beginning to end. Some writers and filmmakers mess with the linearity of the plot by jumping around in time and perspective, but how the media is consumed remains the same and for this purpose these are still considered to be linear story structures.

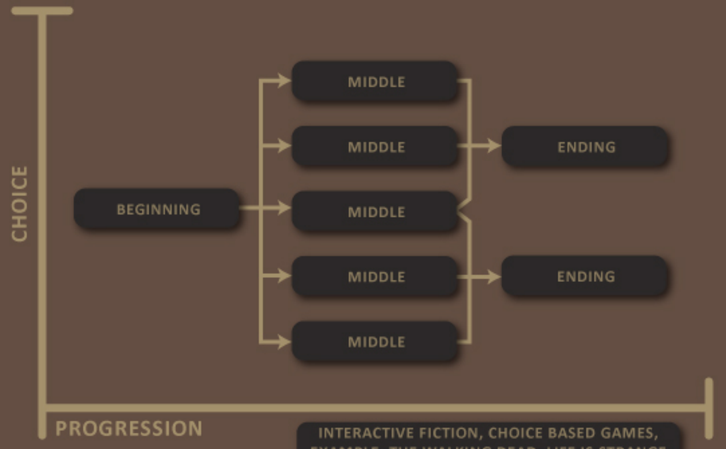


LINEAR GAMES, EXAMPLE: LIMBO, INSIDE

1.5D STORY STRUCTURE: INTERACTIVE LINEAR

INTERACTIVE LINEAR PROGRESSION

By adding interactive portions to a game, the designer can somewhat hide an otherwise linear storyline. The outcomes here will always remain the same, with sections of openness funnelling the player back into linear moments of the plot, but this still provides the player a sense of control over the progression of the story. This was the standard in gaming for a long time and remains common today.



INTERACTIVE FICTION, CHOICE BASED GAMES, EXAMPLE: THE WALKING DEAD, LIFE IS STRANGE

2D STORY STRUCTURE: BRANCHING

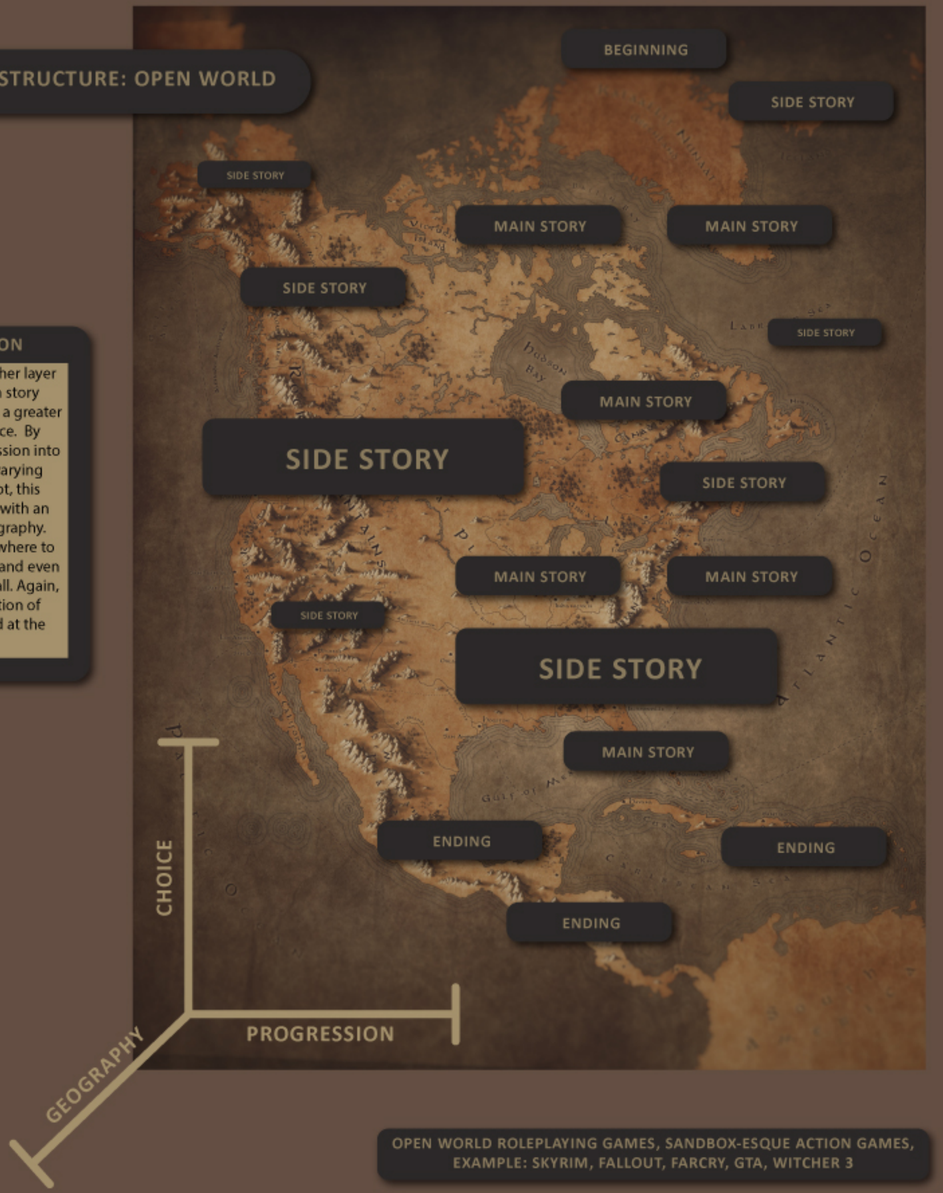
BRANCHING PROGRESSION

To take a greater step away from linear progression in storytelling, games can provide players with moments of decision making that redirect the flow of the overall plot. By presenting them with branching choices, the player can feel that they have shaped the story and, through good writing, invest it with personal meaning. Even still, this is merely an expanded set of prewritten outcomes, the player ultimately not involved in the story's creation and their decisions only taking them along a defined path of the creator's making.

3D STORY STRUCTURE: OPEN WORLD

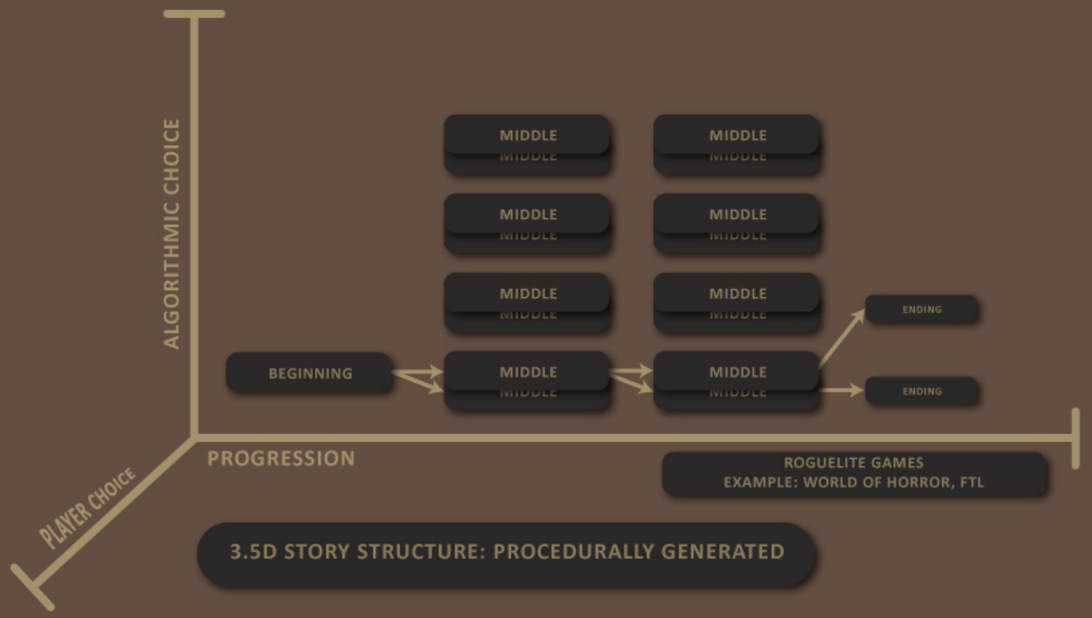
OPEN PROGRESSION

Open World games add another layer of opacity over pre-written story progression, giving the player a greater sense of freedom and choice. By separating the overall progression into many smaller stories with varying connection to the main plot, this format provides the creator with an additional dimension: Geography. Here, the player can choose where to go, what to do, when to do it and even whether to do something at all. Again, though, this is still a collection of pre-written stories accessed at the player's choosing.



OPEN WORLD ROLEPLAYING GAMES, SANDBOX-ESQUE ACTION GAMES, EXAMPLE: SKYRIM, FALLOUT, FARCRY, GTA, WITCHER 3

OTHER STORY STRUCTURES



ROGUELITE GAMES
EXAMPLE: WORLD OF HORROR, FTL

3.5D STORY STRUCTURE: PROCEDURALLY GENERATED

RANDOM PROGRESSION

Though random seeding has existed in gaming since very early on, it is only a recent occurrence that procedural generation has been used for the stories themselves. A large step toward taking narrative out of the hands of the creator, this style of story structure still has (so far) failed to address one of the overarching issues in computer-based storytelling: the meaningful impact of the player's decisions. That said, the opportunity here for emergent gameplay is huge and further escapes the trappings of linear storytelling, even if the sections themselves remain pre-written by the creator.

LIFE SIMS, BUILDING SIMS, SURVIVAL GAMES
EXAMPLE: THE SIMS, MINECRAFT, TERRARIA

SOLITARY STORY STRUCTURE: SANDBOX

SELF-DIRECTED PROGRESSION

While sandboxes provide players with a high level of freedom to shape the world around them, the games themselves often exist on the other end of the narrative spectrum and feature very minimal story, if any at all. The player is given a set tools to interact with the world, often with a superficial task and reward, needs and fulfilment system. Much like the toys of our childhood, this allows the player to build their own narrative and find their own meaning. The problem with this is that the worlds are often lifeless and only change in direct response to the player's actions; you are not a part of a larger story beyond your actions and needs. This lack of forward momentum and outside drive can lead to narrative hollowness and refocuses our attention onto mechanical loops rather than the story itself.

ADAPTIVE PROGRESSION

The problem that computer games face when it comes to reproducing the experience of pen and paper RPGs is an obvious, but by no means simple one: Feedback. The organic, collaborative nature of in-person gaming allows a story to change on the fly and in direct response to the decisions of the player, a flexibility to go off script that remains the holy grail of narrative-based computer games. The difference between the mediums, one being only limited by the imagination, while the other being limited by current technology, has meant that any attempts made by computer games have either been a simple recapturing of the mechanical side of pen and paper games, like the CRPG genre as a whole, or clever trickery, derived from excellent writing, smart mechanics or a layering of the different kinds of story structures previously discussed. The problem is that a computer game cannot be created on the fly, and the more control you place in the player's hands from the start the less narrative can be crafted. Conversely the more narrative that is written, the less input the player can have. Most methods developed to compensate for the pre-written nature of computer game storytelling fall into either of these two camps, with only a few exceptions that have come close to finding a balance. One is AI Dungeon, where the Dungeon Master/Storyteller has been replaced by one of the most advanced learning AIs available. Others have been MMOs, the sense of community and the interactions with others providing a form of collaboration, and AR games, a format that allows the creators to interact with players and change the course of events accordingly.

TABLE TOP ROLEPLAYING GAMES, INTERACTIVE THEATRE, ALTERNATE REALITY GAMES, LIVE ACTION ROLEPLAY, MMORPGS
EXAMPLE: DUNGEONS AND DRAGONS, MURDER VILLAGE, MARBLE HORNETS, EVE ONLINE, MINDS EYE THEATRE

ORGANIC STORY EVOLUTION: PARTICIPATORY

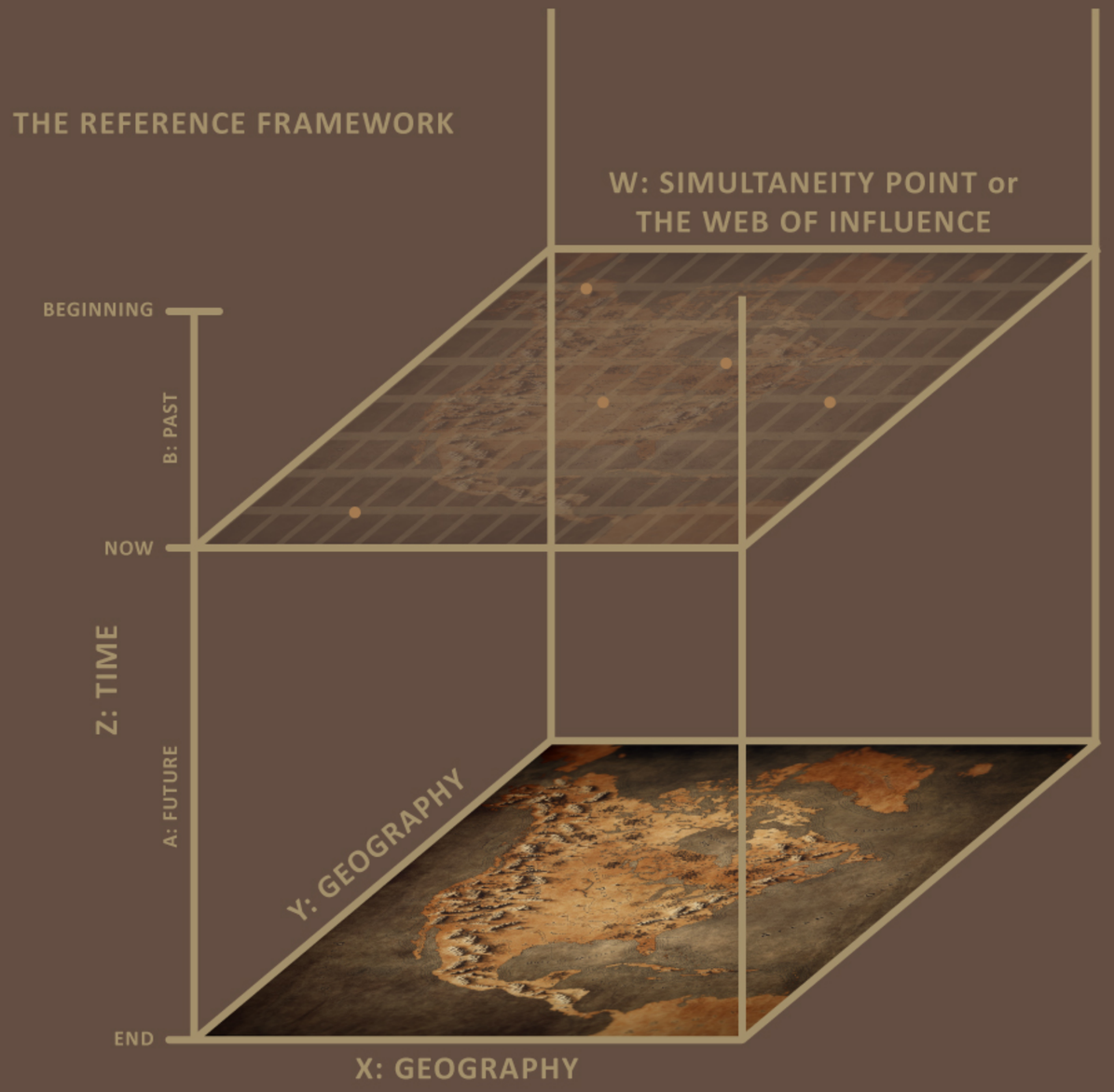
THE PROBLEM AND A POTENTIAL SOLUTION

Reality is an interconnected web where everything affects everything else, the ripples of cause and effect felt through degrees of influence. Even if you were to lock yourself away in your room, your very existence in the first place means that your absence affects the world. This is what it means to be alive. The incalculable scale of all this chaos makes it impossible to see or fully understand, so how are we to replicate this in games?

With the limitations of technology throughout the history of games, capturing the sensation of life has always come down to curation. The linear story is the telling of selected experiences. Branching plots thrust the Player into the role of curator of a limited set of already curated experiences. Sandboxes hands over most of the curating duties to the Player while leaving them in a lifeless world. And the problem always remains that the Player is left as part of a non-reactive world. They are not buffeted by the ripples of influence nor are they truly contributing to this web of interconnectedness.

I believe by limiting the scope of time and space (geography), rather than that of the story, we can expand this sense of being in a living world.

CONCEPTUALISATION FOR 4D STORY STRUCTURES



DEFINITION VARIANCE

A slight variance in the use of Dimension here, with the previous examples using it for illustrative purposes to define scope and variance, but this time I have used it in defining the modeling for actual calculations. If defining it in the same manner as previous models, it would still be considered 4D, as Geography would be merged into only the Y axis and X would become Player's Actions. Why "Actions" rather than "Choice"? This will become clear when defining the Simultaneity Point and is intrinsically tied to why Time is used rather than Progress. These variances may be slight, but they remain important when establishing how this modelling would be functionally different from the story structures we are familiar with.

REFERENCE FRAMEWORK

My proposed Story Structure functions through two systems and their interactions, one being the Reference Framework, the other being the Story Cell Structure (described on the next page). The model is named as such because it defines the collective whole of all reference frames, or, put simply, each character's placement in time and their relation to one another.
This Reference Framework would take the Geographical location (XY) of a Character and track it throughout time (Z), recording where they have been (B) and comparing current location with that of others (W) to influence the future (A). The complexity of the intended function is how this data interacts with the Story Cell Structure, a system that turns Story into moments that feed through Character with results that differ depending upon their placement within the Reference Framework. This will be explained further later, but to summarise, the Reference Framework's purpose is to interconnect everything so that a single change will have lasting effects upon the story.

REFERENCE FRAME

A reference frame is a system of graduated lines symbolically attached to a body that serve to describe the position of points relative to that body.

REFERENCE FRAME CONTEXT

The Framework is the design structure as a whole; a Frame is the established construction of an individual story using the Framework.

PROGRESS VS TIME

Progress is dependent upon the Player's momentum through a game world; if they do not move forward, neither will the story itself.
Time is the forward momentum of a story or world independent of the Player's input; this can be at a different pace from reality or broken up, but events in this context remain separate from the Player's achievements.

Z - TIME

The Reference Framework functions around a set span of unbroken time that passes no matter what actions the Player takes (aside from pausing and quitting of course). For the purposes of manageability, the timeframe should be quite limited, but a single game could use multiple individual Reference Frames to simulate the passing of intervening time. For the purposes of my example, I will refer to the game being a single block of an hour in real-time.

STATE A - FUTURE

How the Reference Frame deals with the future is its true difference from established story structures. To allow for more organic storytelling, the future is not a sequence of choices or interactivity that string together pre-written chunks of story, but a loose mesh of potentials. Yes, there is a set path through the story that the NPCs follow if uninterrupted, but that path can be disrupted and changed radically through the Player's involvement. It is not a Sandbox though, and the changes would be meaningful ones that lead to emergent story that make sense within the context of the game. This will be further explained when discussing the cell structure story system.

STATE B - PAST

The past is considered concrete in the Reference Framework, everything that has happened remaining a constant solid point of reference until the hour is started all over again. This is standard to most narratives to some level, but in the Reference Frame it holds important permanent data that will be used throughout. Technically, this would allow for rewinding, but that is outside of the scope of my example.

XY - GEOGRAPHY

While a game using this system can have a 3D (XYZ) landscape, the framework itself requires only a 2D (XY) representational plane. This provides the coordinates of the different Reference Frames/Characters and is important for calculating proximity that defines the shape of the Web of Influence. Changes to the environment can be made throughout, for example an explosion knocking down a building, but this would require the recalculation or removal of many of the cells, so for ease of exploring this idea I will define the map as one that is unchanging.

W - SIMULTANEITY POINT

The Simultaneity Point is the moment, the three seconds between the concrete past and the potential future, the point in space and time where the interconnectedness of life is calculated. The W axis is the fabric of reality formed over the top of every character, their position in that moment of time and their relation to everything present within the game world. This is where the Reference Frame intersects with the Story Cell Structure, where characters absorb the potential cells of influence that pass through the web at any given moment from the future into the past. One system moves forward, the other moves back, meeting only at the Simultaneity Point to form the Web of Influence.