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Substance and Style in Game Design

By Tynan Sylvester

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Nobody can completely understand the entire field of game design. There are too many interacting elements, too much information, for the human mind to perceive and consider simultaneously. Thus nobody can hope to think about all of game design at once. The only solution available to the designer is to conceptually split the field up into manageable chunks, each of which can then be considered separately.

There are many ways to divide game design so that it can be contemplated intelligently. This article attempts to clarify one of these ways, namely, splitting a game and all of its parts into categories as either style or substance. First, I'll define what style and substance are.

Substance is fundamental, and exists in all games by definition, whether these games run on a computer or not. Every computer game, every board game, every tabletop strategy game or pen-and-paper RPG, are all fundamentally composed of substance elements. These elements are defined by how they act and interact with other game elements. One could think of substance, in the example of a computer game, as the part of the game that comes directly from the code. The purpose of substance elements is to, by interacting according to their fundamental natures, to generate decision points for the player.

Style elements are auxiliary, and exist to help elucidate stories, immerse players, facilitate learning, or to serve many other experience-enhancing purposes. They provide an appearance for the substance elements and make the substance elements resemble recognizable things, real or fictitious. One may think of style elements as all those parts of the game that are defined by the art and sound. Style elements, when present, are not separate from the substance elements, but exist as wrappers for the substance elements. Their ultimate purpose is to allow human beings to associate the substance of the game with something in real life or fiction.

An easy way to understand for the difference between style and substance is by example. Many shooter games have traditionally calculated world collision and bullet impacts by modeling bullets as instantaneous line traces and characters as moving collision cylinders. In this case, the line-projecting cylinder is the fundamental nature of the character - the character's substance. The image of a fighter, the sounds he makes and the way he animates is the character's style.

A character can thus be, as a thought exercise, stripped of his style and considered simply as an abstract cylindrical game piece that slides around a level, attempting to project lines into other cylinders. The substance is the cylinder; its rules of interaction, its practical properties. The style is what the cylinder is made to appear as, and what the cylinder's actions appear as.

Any number of different styles could be overlaid on top of the sliding, line-projecting cylinder substance. This cylinder could be made to appear as a space marine, a World War II soldier, a puzzle piece in some abstract competitive game, or a robot on treads that fires lasers. The style of the element does not affect the substance - the cylinder still acts the same way whether it looks like Duke Nukem or Bart Simpson.

An understanding of the style-substance relationship is useful because it allows us to better analyze how game elements interact without being too concerned with how these elements appear. This is a good method of analysis since it allows us to focus clearly on gameplay. An important ability to develop is the capacity to mentally strip away the style of an element so that the underlying substance can be examined alone. It becomes obvious when an element is not contributing to gameplay because it no longer has a crutch, in the forms of a cool appearance, to prop it up.

No matter how fascinating the style is (with a few exceptions), if an interactive element or system does not improve the game from a purely abstract lines-and-cylinders gameplay point of view, it needs to be re-evaluated.

Substance is always more important in game design. While well-done style is great to have, it is not absolutely necessary to produce a great gaming experience. Substance is necessary. Consider Chess. The game doesn't really resemble contesting armies on an ancient battlefield, but the quality of the decision points it generates is still excellent, which is why it is still popular. The same could be said for classic computer games like *Counter-Strike*, *Civilization* and *Starcraft*. These games have been long surpassed in terms of style quality for years, but the substance remains some of the best available, and these games are still popular.



Classic computer games like *Civilization* remain popular today due to having substance.

Substance is what really defines games as games. Forms of entertainment without substance elements cannot be games. Movies and books, for example, are forms of entertainment that consist solely of style elements because there is no non-predefined interaction between elements within these forms of entertainment. They present no decisions to the person entertained and are perfectly predictable the second time they are viewed. Since substance is defined by semi-unpredictable interaction and dynamic generation of decision points, this means that movies and books have no substance. To be a game designer is to be a designer of substance.

There are a few games that exist without any style element. The board game Go, for example, is not generally thought to associate the pieces with warriors since their rules of interaction and appearances don't resemble warriors. Computer puzzle games like *Bejeweled* often have no style. *Bejeweled*, for example, does use images of gemstones for its pieces, but the arrangement and action of these gemstones doesn't resemble anything that people do in real life - they are no more than abstract icons.

While style is not strictly necessary to create a great game, it does convey major advantages. These are:

1. Ease of learning, understanding, and retention
2. Story Generation
3. Role-playing
4. Amplification of the wow factor
5. Control and amplification of emotional impact

I'll now discuss these in detail.

1. Ease of learning and understanding

Every human on this planet has years of accumulated knowledge from everyday life. This is a vast amount of information. Game designers can harness this pool of knowledge to make their games much easier to understand. If the substance of the game resembles some system that exists in real life, the style wrapper can be designed so that the game appears to be a simulation of this real life system. Joe User will have a much easier time learning a game with a

good style wrapper than the same game reduced to abstract elements since Joe will be able to intuitively predict the rules of the system by relating it to the real-life system it resembles.

For example, a game about cylinders projecting lines at each other and sliding around in a 3D environment would be difficult to learn. There's no reason to assume that there is anything bad about lines being projected at one's own cylinder. Every rule of the game would have to be explicitly memorized before the game could be understood properly.

The same game, wrapped up as futuristic fighters in a blood tournament, is much easier to understand. It's very obvious that something bad is happening when the player's character gets shot. The futuristic action game wrapper creates an association between things in the game and things in fiction. A smaller health variable is associated with real injury and death, which are obviously bad. This is why no FPS game tutorial has ever needed to explain that you should avoid dying. The style wrapper makes it intuitive.

2. Story Generation

Humans enjoy good stories. We like hearing them, watching them, and participating in them. The second function of the style aspect of a game design is to feed the human desire for stories. Style wrappers do this in several ways.

The most obvious way is that style allows designers to incorporate a story directly into a design. Many games consist of a linear or mostly-linear series of challenges that derive from the player's role in some preconceived storyline. This is a well-used basis for game designs that cross almost all genres.

The other way that style helps feed the human appetite for stories is that it causes the gamer to subconsciously create his own stories as he plays. Some players intentionally do this, as in *Machinima*. All players subconsciously do this. Subconsciously generated stories are often more powerful than predefined stories because they are, in a sense, true, because they are not the product of some game company's brainstorming session. Even better, they are the player's own stories that he experienced and created firsthand. When the player barely survives an intense gunfight because of some incredible turn of chance or feat of skill, that event becomes a story, to be appreciated and retold. It is made more powerful because it did, in a way, actually happen.

3. Role-playing

Well-done style allows the gamer to role-play. This is not in any way limited to role-playing games. All games with style involve an element of role-playing, in the general sense of the word, even if they don't involve levels or experience points. Well-done style allows gamers to mentally place themselves in their game roles.

The Tamagotchi was a virtual pet handheld device that was once very popular. There was almost no substance; it provided no goal and few decision points. What the Tamagotchi did well was allow the owner to role play as whatever kind of person he wished - kind and benevolent to maniacally evil. This power to role-play sold many Tamagotchis.

This accounts for much of the attraction of some types of ultra-realistic games. Games like *Lock On: Modern Air Combat*, *SWAT 3* and *Rainbow Six*, are largely based on the appearance of realism. These games are effective at allowing role-playing because they allow the player to believe that, on some level, he could have done what he did in the game. Since these games are so close to reality, or at least appear so, it is easier for the player to mentally enter the game world. Virtual achievements are more gratifying when they appear as if they could have been real.

4. Amplification of the "wow" factor

The "wow" factor is what people feel when they find gratification in seeing something incredible. Well-done style can provide this. Obvious examples are the awesome graphics usually present in major new game engines. People enjoy marveling at the new effects, even if only for a while, before new becomes old. This aspect of style development is most effective as a marketing tool, not a game design tool, since new becomes old so fast.

However, the "wow" factor also ties in with the generation of stories. If something awesome and unusual happens in a game, it incites the wow factor better when it can be described as something awesome and unusual happening with things that exist in real life. Things that happen in real life are more provocative because the sensations are more intense and consequences more serious. We can amplify the emotional power of incredible events in the game world by associating them with corresponding real events. "My hit cylinder somehow made it past 4 opposing cylinders and hit the goal area in record time." is not as good as "My favorite player got physically touched by four defenders and still made it to the end zone in record time." The real-life association amplifies the emotional power of the event.

5. Control and amplification of emotional impact

The use of style allows games to incite more types of emotions than are possible with only abstract representations, and in a more controllable and powerful way. This is where it is important to realize that substance is only the fundamental game in the decision-making sense - substance presents a series of choices, no more. Substance alone can provoke emotions, but they are not very strong and are not very diverse. Designers who want the gamer to feel fear, get nostalgic or laugh need to design their style to accomplish this goal.

For example, *System Shock 2* is by far the most frightening game I have ever played. The substance of the game was well-done to this effect, since it was well-balanced to keep the player vulnerable and needy. The general sense of worry provided by the substance was amplified and focused into terror by the use of the empty spaceship setting, and freakish half-human enemies.

Individual Preferences and Market Targeting

Some gamers value substance, others value style.

Many competitive FPS gamers buy the most tricked-out and overclocked computers on the market, and then turn all of their graphics settings down to the minimum. This means that their games run at hundreds of frames per second, but are horrifically ugly. The game often ends up looking like little more than moving polygonal lumps. This is fine because competitive FPS gamers are not interested in playing a role, making a story or feeling any emotion besides triumph over a defeated opponent. They want to play the game as it is and learn the substance of it down to the most minute detail. These people play the game for the game, not for the story. This is the audience of Go, Chess, *Quake 3* and *Counter-Strike*.



Games like *Syberia* emphasize style offering lush stories and engrossing visuals.

The Sims has a feature which allows players to take captioned photos of their virtual characters and upload these photos to the web. This is a great example of style elements being placed such that game will generate stories that the gamers can relate to. Those who play *The Sims* are not particularly interested in perfectly optimizing their performance. These players play the game, to make and experience stories that they can relate to. *Syberia*, *Baldur's Gate* or even ultra-realistic games like *Lock On: Modern Air Combat* appeal to similar audiences.

Designers should understand who they are targeting with their game and focus their design efforts accordingly. Substance gamers tend to be young men, the large part of the current games market. Style-preference gamers tend to be more female, and appear along a wider age bracket. An action game marketed towards young men needs to have a phenomenal substance design in order to be popular. A game targeted towards less hardcore gamers has a greater need for style, story, recognizable subject matter, and story-generating opportunities.

Style as a Marketing Tool

Game design for a commercial product has one goal: to sell games. This is a two-part task: we must first make gamers purchase the game, and then we must make them continue playing the game so that they will encourage their friends to play as well, and are more likely to buy the sequel. In general, style accomplishes the first goal, substance the second.

While substance is the most important thing from a pure game-design perspective, well-done substance is ineffective as a basis for a marketing campaign because it is impossible to perceive without playing the game for a good amount of time. Well-done style is immediately obvious to anyone who sees a screenshot. This is a major part of the reason that many games continue to have so much effort allocated into style development and graphics, even though these areas are ultimately less important than the underlying substance. Style sells the game to publisher and public, substance keeps people playing and puts you in the hall of fame.

Intensity of Experience Versus Ease of Relation

The more intense a simulated experience becomes, the more difficult it is to relate to. These two effects work against each other.

The Sims is also a good example for demonstrating this. The subject matter of *The Sims* is so familiar and pedestrian that, before it went into production, it was thought by many to be a failure in the making. From one point of view, this seems logical. The game is about mundane tasks which we all deal with daily. Why would anyone want to play a game about something so

boring?

The game ultimately became a huge hit for many reasons, but one of them is that the familiar nature of the subject matter makes it incredibly easy for us to subconsciously and effortlessly develop our own stories while playing the game, without even trying. This is such a powerful effect that, even though the subject matter of *The Sims* is generally quite pedestrian compared to most other games, gamers find it attractive because it's just so damn easy to relate to.

The game is close to real life, which means it is about something more boring, but is more familiar, which makes it more powerful. The two effects, one towards intensity of experience, the other towards ease of relation, counterbalance each other.



***The Sims* offers a familiar experience that is easy to relate to.**

Design Methods Using Style and Substance

An understanding of style and substance allows us to use some new methods of design analysis and creation.

The first is style-stripped gameplay analysis. A great method to search for holes in a gameplay system is to mentally strip it of style. If you're making a shooter, imagine your characters as cylinders and gunfire as line traces. When you can do that, examine the gameplay system, determine where it is not generating good decisions, and fix the problem. This is a good method of analysis because it leaves the gameplay naked and deprives it of any crutch that our feelings towards the style might bring.

The second method is substance-first design. Even though substance is more important, most games are designed style-first. The style act not just as a wrapper for the final product, but as a wrapper for the designer's thought process. Inspiration comes not in terms of abstract game elements, but of new story elements, new real-life things to place into the simulation, for which a substance system is then built.

This is not necessarily a good or bad thing. Designing a game as a simulation can provide an excellent source of inspiration for new mechanisms and ideas, as arbitrary restrictions often do. Designers at Valve, during the development of the first *Half-Life*, found that artificial constraints placed on a level designer (such as a requirement to use a certain type of environmental effect) often spurred creativity and inspired new ideas. So it is with style and game design in general.

The major problem with style-first design is that after some time, the designs all become too similar each other because they're all simulations of the same things. The style is decided upon and a simulation built before the substance gets tweaked. This means that the fundamentals of the games are all the same; they are just variations on one another.

It is an interesting exercise to attempt to design a game, at least on paper, in a purely abstract way while avoiding all references to what the substance of the game represents in real life. Should one desire, one could find a style for the substance elements at the end of the design process, ultimately producing a complete game.

My own paper experiments with substance-first design have revealed that it's a method of game design which is difficult to get used to, but can produce unique results. Designing substance-first removes all constraints and leaves us free to explore totally original gameplay mechanics. This is an extremely powerful method. Good, original gameplay systems are pure gold in today's game market.

One could even go so far as to program an entire game free of style, using simple placeholder icons for art, in order to test substance game design ideas before deciding what the game will

ultimately be about.

Closing Thoughts

An understanding of style and substance allows us to more systematically analyze our games from many perspectives, including decision-making, marketing, intended target demographics, immersion, emergent story creation, predefined story, familiarity versus intensity of experience, and methods of inciting emotions.

This article clarifies the relationship between style and substance, it does not attempt to present methods of developing these elements. Actually creating good style and substance elements is an infinitely larger field of study, and is the subject of innumerable other articles. Understanding the relationship between style and substance, however, will help any game designer analyze and create games that much more effectively.

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