

## Appendix A. DEFINITIONS OF TERMS

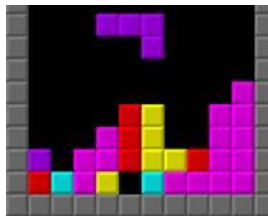
In this section, we provide more detailed information about each of these facets as well as indexing terms, examples of video game screenshots, and corresponding rules for applying these terms with regards to the related terms.

### 1.1 Artistic Style Facet

The style facet provides a framework for selecting the predominant and recognizable visual appearance of a video game towards which its artistic features are intentionally directed. Style describes the overall aesthetic organization of the entities in the game, and provides a distinctive category shared by similarly designed games.

#### *Abstract*

The term “abstract” describes pure forms, so generally it does not go with games which have narrative contexts to accompany the gameplay (from Järvinen, 2002). This term has two child terms: fractal and text. Fractal is a form of algorithmic art created by computations calculating the movement and display of graphic objects. It tends to be symmetrical and geometric in appearance but encompasses all abstract visualizations of color and form. Psychedelic, a child term of fractal, refers to a specific abstract fractal style featuring “kaleidoscopically swirling patterns” in bright, multicolored entropic motifs, and is commonly found in rhythm games.



*Figure 18. Abstract: Tetris (1984)*



*Figure 19. Fractal: Fractal: Make Blooms Not War (2011)*

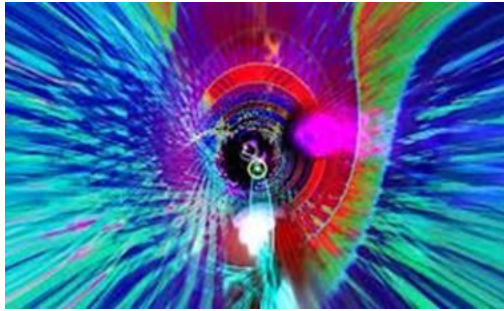


Figure 20. *Psychedelic: Dyad (2012)*

Text, on the other hand, refers to an abstract visual style where the artistic elements are completely conveyed through the use of text. This is more common in older video games such *Legend of the Red Dragon (1989)*, *Zork (1977)* and other MUD games.

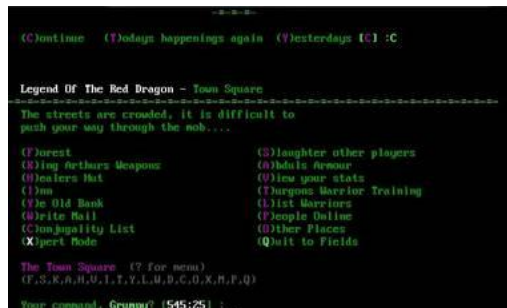


Figure 21. *Text: Legend of the Red Dragon (1989)*

### **Photorealism**

The term “photorealism” refers to “photographic likeness with reality” (p. 121, Järvinen, 2002). This is an increasingly popular visual style that can be found in many recent games, in particular, from late 1990s to today.



Figure 22. *Photorealism: Crysis (2007)*

This style is sub-divided into two categories: illusionism and televisualism. Illusionism is a photorealist style which portrays fantastical or science-fiction characters and environments in a realistic manner, or as consistent with reality (Järvinen, 2002). This results in games portraying “an illusion of an unreal world” (p. 122, Järvinen, 2002) as imaginary things (e.g., summon creatures) are represented with photorealistic life-likeness. Televisualism refers to a photorealist style that combines realism with the artistic and graphical features found on television programming (Järvinen, 2002).

Examples of these graphical features include scores during a sports broadcast or the framing of stories in a nightly news show. The effect is to increase the verisimilitude of the games' likeness with real televised events.



Figure 23. Illusionism: Final Fantasy XIII (2010)



Figure 24. Televisualism: FIFA Soccer 09 (2008)

### ***Stylized***

The term “stylized” generally refers to caricaturistic or illustrative depictions of characters and objects in games. As a visual style of games, *stylized* style is about simplifying reality with non-photographic simulation. This style can be further subdivided to a multi-level hierarchy of different visual styles as shown in Figure 1. The top sub-categories of “stylized” are: handicraft, illustrative, minimalism, and silhouette.



Figure 25. Stylized: The King of Fighters '98 (1998)

### ***Handicraft***

Handicraft can be described as a type of work where useful and decorative devices are made completely by hand or by using only simple tools. Thus the handicraft visual style is one that replicates the visual aspects of these hand-made and hand-crafted objects. This style often emphasizes textures, surfaces, and an otherwise unrefined aesthetic. Another

way of considering the handicraft style in a game is if the entities in the game take on the physical properties of particular artistic medium. There are three prominent methods of handicraft styles featuring different types of materials: clay, paper, and yarn.

Clay is a handicraft visual style which emulates the look of molded clay, where each entity, either character or background, is deformable and malleable. Paper handicraft is a visual style where characters or environments look like they are made out of paper or paper-like materials (e.g. paper-mache). Lastly, the yarn style is where entities look like they are made out of yarn, felt, string, or similar materials. We expect that the number of sub-categories of handicraft style will continue to grow as newer video games depict handicraft styles with different types of materials.



*Figure 26. Clay: Platypus (2009)*



*Figure 27. Paper: And Yet It Moves (2009)*



*Figure 28. Yarn: Kirby's Epic Yarn (2010)*

### ***Illustrative***

Illustrative is an artistic style category whose sub-styles each emphasize distinctive hand-drawn or hand-painted aesthetic features. Illustrative style can be sub-divided into three different categories: caricature, engraving, and watercolor.

### *Caricature*

Caricature is an illustrative style that captures or distorts the distinctive features of a person or object to capture a quick visual likeness **Error! Reference source not found.** We identified three sub-categories of caricature including comic book, Lego, and superflat.

Possibly the most applicable sub-category of the caricature style is the comic book style. Comic book describes the look which replicates the common artistic elements found in mass-market comic books, such as accentuated features and line strokes. Comic books can have varying styles depending on where they originate from. For instance, the ones originating from America, such as those produced by large companies like DC and Marvel, often feature muscular characters, intense shading, and bold colors. In our controlled vocabulary we have termed this look *American style (comic book)*. *Japanese style (comic book)*, on the other hand, is a term meant to describe the look of comic books originating from Japan (and typically referred to as manga) which feature relatively more beautified characters with large eyes, slimmer and longer bodies, and softer outlines.



*Figure 29. American style (comic book): Batman: The Scarecrow's Revenge (2012)*



*Figure 30. Japanese style (comic book): Secret of the Solstice (2008)*

Lego is another caricature sub-category which is based on the distinctive look of Lego figures and/or sets. This style became popular with the increasing number of video games released in the Lego series. As of January 2013, there are approximately 40 different titles under this series. Lego characters are blocky, with distinctive round yellow heads and cupped hands. Objects often have circular pegs atop for easy stacking.





Figure 31. *Lego: LEGO Batman 2: DC Super Heroes (2012)*

Superflat is the last caricature sub-category, and is derived from the postmodern art movement of the same name, influenced by manga and anime. Superflat style refers to various colorful, flattened forms in Japanese graphic art, animation, pop culture, and fine arts, often combining the cute and the grotesque. The most prominent series featuring this style is the Katamari series (2004—present).



Figure 32. *Superflat: Katamari Damacy (2004)*

### ***Engraving***

Engraving refers to a style replicating the intaglio prints made by etchings, carvings, and woodcuts. This style is also sometimes used in a small portion of the game for storytelling (e.g., the prophecy in *The Legend of Zelda*) as it can convey a feeling of reading a storybook. Engraving tends to have shallow depth of field and bold, hewn outlines.



Figure 33. *Engraving: Incredipede (2012)*

### ***Watercolor***

Watercolor refers to an illustrative visual style where characters and environments look like they are painted in watercolor. The most common type of watercolor styles used in

video games is sumi-e which uses ink washes, often in muted colors or shades of black and grey. The name sumi-e originates from the East Asian ink wash paintings of the same name.



*Figure 34. Watercolor: Braid (2008)*

### ***Minimalism***

Minimalism is a style characterized by its lack of decorative content and an overall emphasis on simple forms and lines. In describing video game art, it should refer to the intentional simplifying of an entity or landscape into basic but recognizable forms, without being abstract. Minimalism derives from the aesthetic of minimal art, with its compositional simplicity and featuring only the necessary artistic elements. The game *Fox Vs Duck* (Figure 24) uses simplistic figures and muted colors to successful representational effect.



*Figure 35. Minimalism: Fox Vs Duck (2010)*

### ***Silhouette***

Silhouette is a style in which characters or environments are represented as a solid shape of a single color, usually black. The interior of a silhouette is basically featureless, and the whole is typically presented on a light background, usually white, or none at all. Examples include *NightSky* (2011), *Limbo* (2010), etc.



Figure 36. *Silhouette: Limbo (2010)*

## 1.2 Artistic Technique Facet

The technique facet provides a framework for selecting the predominant computer-based modeling or rendering methods used to create the entities in the game and fully realize the intended artistic style. Techniques may further be defined by technological limitations, such as 8-bit or low-poly.

### *Cel-shaded*

Cel-shaded is a technique of rendering light and shadow to enhance the illusion of a 3D surface. This also gives the modeled entity a cartoon-like appearance due to the effect of rounding the edges and eliminating gradations of color. This technique can result in a feel of hand-drawn animation. Popular examples include *The Legend of Zelda: The Wind Waker* (2003), *No More Heroes* (2008), and *Prince of Persia* (2008).

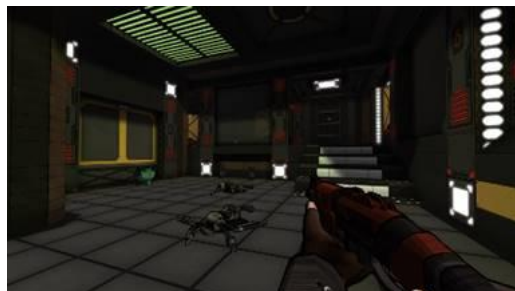


Figure 37. *Cel-shaded Wrack (2012)*

### *Cutout*

Cutout is a modeling technique used to give the impression of hand-cut objects by accentuating edges and the flatness of elements, and also used often in animations (e.g., *South Park*).



Figure 38. *Cutout: Paper Mario (2007)*



### ***Full Motion Video (FMV)***

Full Motion Video refers to the use of captured or pre-recorded video and images in a game as opposed to computer-graphics or 3D models. Examples include: *Sewer Shark* (1992), *Night Trap* (1992), and *The Beast Within: A Gabriel Knight Mystery* (1995).



*Figure 39. Full Motion Video: The Beast Within: A Gabriel Knight Mystery (1995)*

### ***Low-poly***

Low-poly refers to a modeling technique where polygonal surfaces are used to render the shapes of entities. Low-poly indicates the limitation (or self-imposed constraint) on creating these entities such that the polygons are distinctly visible (giving entities a faceted, geometric, or blocky, look).



*Figure 40. Low-poly: Flotilla (2010)*

### ***Pixel Art***

Pixel art is the purposive use in modern games of the primitive pixelated style found in early 16- and 8-bit games. This can be further specified into 16-bit and 8-bit, referring specifically to the integer size of information in primitive computer architecture, but generally to the layman's terms for the games of those "eras." Bits limited the size and processing of information, and thus had impacts on the number of pixels and colors in the look of a video game. 8 bits were used roughly between 1983 and 1994, and 16-bits were used roughly between 1989 and 1999.



*Figure 41. Pixel art: Hotline Miami (2012)*

### ***Rasterized***

Rasterization is a rendering technique used to produce 3D objects and environments by computing and mapping vector graphics in real time (i.e. during the gameplay). As such, rasterized games often seem to “assemble” backgrounds and surfaces as a player moves closer to them. Nonetheless, it is probably the most commonly used rendering algorithm in computer graphics and will be found in most games emulating a 3D space.



*Figure 31. Rasterized: Minecraft (2011)*

### ***Ray Traced***

Ray traced refers to a graphic technique for generating an image by tracing the path of light through pixels in an image plane and simulating the effects of its encounters with virtual objects. It is capable of producing a very high degree of visual realism, but is rarely used in video games due to large processing requirements. Ray traced generally is used in “mods” or user modifications of video games.



*Figure 42. Ray traced: Quake 4: Ray Traced (Unofficial, 2012)*

### ***Rotoscoped***

Rotoscoped is a technique whereby photographic and live-action images are “re-traced” by computer algorithm in order to emphasize shapes and forms. The retracing gives the

resulting image a flat, cartoon-like, bold-color appearance, with much of the original photographic detail removed.



*Figure 43. Rotoscoped: Another World (1991)*

### **Wireframe**

Wireframe refers to a modeling technique where simple outlines are used to convey entities, often using vector graphics and without these shapes being filled in with color. Examples include *Battlezone* (1980), *Stellar 7* (1982), etc.



*Figure 44. Wireframe: Battlezone (1987)*

### **1.3 Artistic Dimension Facet**

The dimension facet describes the dimensionality of the represented entities inside the game, and not the perspective of the player. In this regard, only three values are permissible: *2D*, which represents physical space in two dimensions, x and y, or length and height; *3D*, which represents physical space in three dimensions, x, y, and z, or length, height, and depth; and *multiple*, a combination of both 2D and 3D.

