life, and as a result, interesting adoptions of the form have been labeled illegitimate or simply ignored. In the short essays that follow, I cover myriad examples of applications for, sensations of, and experiences with videogames. In each, I hope to show how videogames have seeped out of our computers and become enmeshed in our lives. I offer these essays not as a complete catalog of videogames' present or future potential but as a starting point for us to think about how to do things with videogames.

1 / Art

Are videogames art? It's a question that's sparked considerable debate, most notably thanks to the film critic Roger Ebert's declaration that "the nature of the medium prevents it from moving beyond craftsmanship to the stature of art."[1] For the philosopher and game designer Jim Preston, it's an absurd and useless question:

> To think that there is a single, generally agreed upon concept of art is to get it precisely backwards. Americans' attitude towards art is profoundly divided, disjointed and confused; and my message to gamers is to simply ignore the "is-it-art?" debate altogether.[2]

Preston sheds light on a fatal problem with the "games as art" conversation. Forget games, *art* doesn't have any sort of stable meaning in contemporary culture anyway.

There are many reasons for such a development, perhaps the most important being that the twentieth-century avant-garde changed art for good. In the turbulent times of the first two decades of the last century, localized movements in Europe gained attention by rejecting traditionalism. Futurism's founder Filippo Marinetti spurned all things old and embraced youth, machine, violence. Then when violence became reality in World War I, a handful of artists in Zurich concluded that if progress since the Enlightenment had led to the destruction of the Great War, then such progress had to be rejected. They called their work Dada. The futurists called for a total reinvention of cultural and political life.

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Dada scorned artistic and social conventions in favor of absurdism and recontextualization. Tristan Tzara performed live poetry by choosing words randomly out of a hat. Marcel Duchamp made a urinal into art by putting it in a gallery rather than a bathroom.

Movements like these, which collectively became known as the *avant-garde*, disrupted traditional notions of art's role and context. As the last century wore on, it became much harder to distinguish art by its form or function alone; context became the predominant factor, its arbitrariness exposed forever by Duchamp's urinal.

But even before the avant-garde, the history of art is strewn with the babes and corpses of movements that hoped to reimagine or reinvent their predecessors, even if they did so less rapidly. The Gothic style of the twelfth through fourteenth centuries preferred elongation, ornament, and angles in sculpture, architecture, and painting. The Renaissance perfected perspective. Realism of the late nineteenth and early twentieth centuries focused on portrayals of everyday life, itself spawning numerous movements of their own right such as postimpressionism and the Pre-Raphaelites. From the long perspective of history, the very idea that "art" means something monolithic and certain is absurd, as Preston suspects.

What lessons can videogames learn, even from a rudimentary understanding of art history? For starters, there are no unified field theories of art. The pursuit of a pure, single account of art in any medium is a lost cause. Instead, the history of art has been one of disruption and reinvention, one of conflicting trends and ideas within each historical period, and since the nineteenth century even more so.

After all, the twentieth century saw the following things enjoy celebration as fine art: a urinal placed on a stand; a painting of a colored square; poetry made of words drawn randomly from a hat; an audience that cuts the clothes off an artist; industrial paint thrown onto canvas; reproductions of commercial advertisements; a telegram sent to a recipient it claims to portray; a barricade of oil barrels on a Paris street; a continuous live television

image of a Buddha statue. Lest one conclude that such examples are outlandish edge cases, consider the artists who produced them: Duchamp, Piet Mondrian, Tzara, Yoko Ono, Jackson Pollock, Andy Warhol, Robert Rauschenberg, Christo and Jeanne-Claude, Nam Jun Paik, respectively. All are celebrated as major figures, whose status as artists would never be questioned. They demonstrate that "art" is hardly a fixed and uncontroversial topic. Art has done many things in human history, but in the last century especially, it has primarily tried to bother and provoke us. To force us to see things differently. Art changes. Its very purpose, we might say, is to change, and to change us along with it.

How then can we understand the role of games in art? Satisfying Ebert's challenge that games simply need to get up off their proverbial couches and rise up to the authorial status of literature or film is not the way forward. [3] Neither is the impassioned folly of appeals to videogames' legal status as speech, a common counterargument among videogame apologists. Nor still is the repurposing of familiar game imagery as folk art homage, in crafts for sale on Etsy.com or as cakes featured on videogame blogs. Nor indeed is granting gallery status to game stills and concept art by hanging them in exhibitions at trade conventions, as has been done at the main videogame retailers trade show, Electronic Entertainment Expo, for many years.

Despite its lack of specificity, the idea of "games as art," or *art-games*, to use the designer Jason Rohrer's term, does offer some insight on its own. It suggests that games can be construed *natively* as art, within the communities of practice and even the industry of games, rather than by pledging fealty to the fine art kingdom. Its practitioners are game developers first, working artists second, if at all. By contrast, the term *game art* describes a work prepared for exhibition in galleries or museums, still the "traditional" venues for art despite Duchamp. Cory Arcangel's *Super Mario Clouds*, a hack of the Nintendo Entertainment System cart that removes everything but the moving clouds, offers a good example of game art. [4] These are games that get exhibited, not games that get played.

Beyond such a distinction, however, and despite its rhetorical power, *artgame* is an insufficient term to be useful for players, creators, or critics. It is a stand-in for a yet unnamed set of movements or styles, akin to realism or futurism. We must look deeper, to the particularities of specific aesthetic trends in game development itself, in hopes of identifying their positions in relation to games and art alike. In other words, what we lack are discussions of the developing conventions, styles, movements through which games are participating in a broader concept of art, both locally and historically. There are many such styles we might consider, so let's choose one to focus on.

Consider Rohrer, Jonathan Blow, and Rod Humble, three figures whose names often arise in discussions of games and art, and whose work each contains a game about the nature of human relationships. Their work embraces simplicity of representation bent neither toward the pixellated pang of nostalgia nor the formal austerity of abstract emergence. I suggest the term *proceduralism* to characterize the style represented partly by these three and a few others. It is not a name for all games, nor all artgames, nor perhaps even all games by the creators just mentioned. Instead, it is a name for a style they have embraced deliberately and successfully.

Blow's game *Braid* takes the seemingly familiar genre of the platformer and turns it into an allegorical exploration of the themes of time and regret. At the game's start, it sets up a seemingly familiar situation in which the player character *Tim* is meant to rescue a princess from a monster. But the relationship between the two is quickly revealed to be more complex than this standard videogame trope allows. The game offers its player the ability to rewind time, allowing recovery from mistakes (there is no death in *Braid*), while creating new implications for platform puzzles in different sets of levels. In one world, certain objects are unaffected by time manipulation. In another, character movement to the right moves time forward, and movement to the left moves it in reverse.

Rohrer's *Passage* is an abstract *memento mori*. The player controls a man who moves through an abstract, pixellated world. The

player can choose to couple with a female character near the game's start, in which case the two move together as one for the rest of the game, or to return later after exploring the mazelike environment. Throughout, treasure chests are scattered, some of which open to reveal stars, others dust. Capturing stars from chests constructs memories that can be seen later. Over time, the characters age and change appearance, their hair color, clothing, gait, and speed of movement reflecting their progression through life, and finally they die, first the woman and then the man after her. The entire process takes place over five minutes.

And Humble's game *The Marriage* offers an even more abstract take on romantic coupling, offering no concrete representation save the work's title. In the game, two large squares, one blue and one pink, representing a man and a woman, move about a 2-D field. Circles of various colors enter and leave the space. The interactions between squares, circles, and the player's mouse create different consequences for the blue and pink squares. For example, mousing over either square reduces the size of the blue one and moves the two closer together. The pink square becomes more transparent over time, but when it touches any colored circle save black, it increases in size. When either square reduces to nothing or becomes completely transparent, the game ends. The game, in Humble's words, "is my expression of how a marriage feels."[5]

While quite different in nature, *Braid, Passage, and The Marriage* share several common properties, some related to desired effect, some related to method of creation, and some related to form. I suggest five: procedural rhetoric, introspection, abstraction, subjective representation, and strong authorship.

As the name implies, proceduralist games are process intensive—they rely primarily on computational rules to produce their artistic meaning. In these games, expression arises primarily from the player's interaction with the game's mechanics and dynamics, and less so (in some cases almost not at all) in their visual, aural, and textual aspects. These games lay bare the form, allowing meaning to emanate from a model.

Elsewhere, I have given the term *procedural rhetoric* to an argument made through a computer model.[6] A procedural rhetoric makes a claim about how something works by modeling its processes in the process-native environment of the computer rather than using description (writing) or depiction (images). When it relates to games intended to change opinions, this term coheres well enough. But it has introduced some confusion in other contexts, probably owing to the unpopularity of the term *rhetoric* in contemporary culture—for many, it's just a synonym for lies. But for the rhetorician, the term characterizes the process of expression much more broadly.

In artgames like the three in question, a procedural rhetoric does not argue a position but rather characterizes an idea. These games say something about how an experience of the world works, how it feels to experience or to be subjected to some sort of situation: marriage, mortality, regret, confusion, and so forth.

Proceduralist games are oriented toward introspection over both immediate gratification, as is usually the case in entertainment games, and external action, whether immediate or deferred, as is usually the case in serious games. The goal of the proceduralist designer is to cause the player to reflect on one or more themes during or after play, without a concern for resolution or effect. The use of identifiably human yet still abstract roles in these games underscores the invitation to project one's own experiences and ideas on them.

Passage, for example, is a game about life's choices, lessons, and inevitable end. Because it's abstract in its representation of partnership and the passage from youth to old age to death, it inspires, quite naturally, consideration of this process. *The Marriage* is about the push and pull of maintaining a relationship, but the significance of that theme sits in the ambiguity between its title and the behaviors it implements. These games pose questions about life and simulate specific experiences in response, but those experiences rarely point players toward definitive answers.

Their focus on meaning in mechanics notwithstanding, pro-

ceduralist games do not reject graphics, sound, text, or even story entirely. But when they do include such things, these games tend to reject verisimilitude in favor of abstraction.

Part of the reason for this is practical, as these games are often created by one or two people. But a more important reason is aesthetic: reducing the player's obsession with decoration underscores the experience of processes while still allowing image, sound, and text to meaningfully clarify the fiction of the game's theme. Although one common method for abstraction is 2-D rendering (as is the case in *Braid*, *Passage*, and *The Marriage*), not all proceduralist games adopt this perspective. Mike Treanor's *Reflect* offers an example of a 3-D proceduralist work, a game about the movement of creatures small and large. Treanor's choice of a seemingly retrograde, low polygon-count rendering style serves an aesthetic rather than nostalgic purpose: it de-emphasizes visual fidelity in favor of the experience of movement. As far as story is concerned, procedural works tend to employ metaphor or vignette instead of narrative. Daniel Benmergui's *Storyteller* offers an instructive example: the game tells a tale through the causal relationships between different characters, at different times, in accordance with their position on a triptychlike stage.

No matter the level of abstraction, proceduralist works don't equate higher abstraction with lower production value. Where image, sound, and text is present, it's carefully selected and incorporated into the system that forms the rest of the game—the time-reversible background particles in Blow's *Braid*; the expressive six-pixel eyes in Benmergui's *I Wish I Were the Moon*; the logarithmically scaled distortion of past and future vision in Rohrer's *Passage*. Such assets are always tightly coupled to the gameplay itself.

Games like Go and Tetris are abstract; if they have any aboutness, it is limited to the experience of the system itself. One can make representational claims about these games (Janet Murray has called Tetris "the perfect enactment of the overtasked lives of Americans"), but only in an overtly metaphoric way.[7] By contrast,

games like *SimCity* and *Madden* are concrete; they deal with specific subjects and activities, in this case urban planning and American football.

Proceduralist games sit between these two poles. Their systems characterize a subject not by accident of genre or convention but through deliberate selection—often inspired by a solitary creator's personal experience. At the same time, proceduralist works are not as clear about their representations as are other games. There's an ambiguity of both form and signification in these works. Another example of the style, Bernhard Schulenburg's *Where Is My Heart*, demonstrates both of these aspects. The game deals with "the complication of family life" by distributing success among three abstract characters and jumbling an intricate platformer world about the screen.

From the perspective of form, proceduralist artgames tend to combine concrete, identifiable situations with abstract tokens, objects, goals, or actions, like the abstract tokens in Rohrer's treasure chests. From the perspective of signification, proceduralist works deploy a more poetic and less direct way to express the ideas or scenarios their processes represent. *Braid* poses questions about doubt, forgiveness, time, and regret, offering the player an opportunity to pursue the question, "what if I could go back," in different ways. But the answers to these questions are not presented as definitive solutions discovered automatically through mastery of the game's system. In this sense, proceduralism shares some of the values of expressionism in art, especially as both relate to the subjective interpretation of emotion.

When we ponder the subjective themes of human experience, it's hard to do so in relation to the nameless anonymity of corporate creation. Thus the strong presence of a human author is prevalent in these games, whether an individual or individually identified members of a small group.

The concept of authorship incorporates another feature of art more broadly: the pursuit of a particular truth irrespective of the demands of reception or sales. The sense that the artifact has something to relate and will not relent until that thing is expressed, rather than an experience to be optimized, is at work here. Still, we must not mistake authorship for intention. The intentional fallacy, which rejects the idea that a work's meaning or value is related to the creator's intention, is still at work in games. Player agency in games of all kinds leads to unique interpretations of play experiences; in proceduralist works, such meaning generation is spurred by the knowledge that a specific human being set the work's processes into motion.

Artistic styles, movements, and traditions sometimes arrive via the declaration of a group of artists, as was the case with the manifestos of the early twentieth century. Indeed, the Belgian artist duo known as Tale of Tales penned a "Realtime Art Manifesto" in 2006 to describe and rally interest around their style, which differs considerably from that of proceduralism: they reject rules and goals in favor of high-gloss, low-interaction 3-D experiences and situations.[8] In other cases, critics and historians describe the emergence and evolution of a style during or after the fact. Whether the creators mentioned above would embrace the *proceduralist* is an open question, but such a matter need not undermine the usefulness of describing a style in the process of maturation.

As a style, proceduralism takes a stand contrary to conventional wisdom in game design. At a time when videogames focus on realistically simulating experiences, proceduralism offers metaphoric treatments of ideas. At a time when videogames focus on player gratification, proceduralism invites player introspection. At a time when videogames focus on facilitating user creativity, proceduralism lays bare the subjective truth of an individual creator. It is not the only artistic movement in games, but as one with a coherent set of goals and aesthetics, it serves much the same purpose as did futurism or Dada: to issue a specific challenge to a medium from within it. And that if nothing else is most certainly a feature of art.