Fulfilling the Rousseauian Fantasy:
Video Games and Well-Regulated Freedom

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> Let him always believe he is the master, and let it always be you who are… Doubtless he ought to do only what he wants; but he ought to want only what you want him to do. He ought not to make a step without you having foreseen it; he ought not to open his mouth without your knowing what he is going to say.

—Jean-Jacques Rousseau[1]

INTRODUCTION

In the past thirty years, video games have grown into one of the most popular leisure activities among young people, with 97% of teens aged 12 to 17 in the United States engaging in video game play of some sort.[2] The value of this new "national pastime" has been a subject of constant debate, often portrayed as a dangerous activity due to the violent content of games and their addictive nature.[3] The passionate engagement that is characteristic of gameplay, together with the increasing complexity of games enabled by technological developments, has also drawn scholars to explore the educational potential of video games. A new generation of video game scholarship lauds these games as sites of freedom and exploration that offer students all the educational advantages that traditional classrooms cannot: intrinsic motivation, naturally occurring problem solving, and situated learning environments.[4]

Is the video game revolution upon us? While empirical research into the educational potential of video games is garnering increased interest and funding, the philosophical basis for the educational use of video games merits more attention.[5] Rather than exploring video games as a novel phenomenon, I wish to situate the nascent body of video games research within the progressive tradition and its emphasis on child-centered education. More specifically, I suggest that the portrayal of video games as contexts that appeal to children's natural interests and modes of learning can be better understood as a realization of Rousseau's vision of "well-regulated freedom."[6]

Broadly stated, in *Emile*, Rousseau criticizes the dominant models of education of his (and, indeed, our) time, which view learning as the transference of knowledge or skills from teacher to student. Instead, he argues that children ought to learn according to their natural capacities and interests. However, this free and exploratory mode of learning relies on various intentional (and at times elaborate) manipulations of the environment by the tutor, intended to bring about what Rousseau views as the desirable ends of Emile's education. Analogously, I contend that video games function as *constructed natural environments* in which players experience a sense of free and self-directed discovery, while the designed character of such explorations remains hidden.

Although it might be justifiable, and worthwhile in certain contexts, to orchestrate students' freedom as a means of promoting their learning, it is important to

better understand how and why such interventions are used. I begin this inquiry by exploring Rousseau's notion of well-regulated freedom: freedom employed as a method for achieving other educational ends. I then proceed to examine how video games facilitate an intensified version of well-regulated freedom by focusing on the function of *rules* and *feedback loops* in these games. I conclude by offering preliminary thoughts concerning the role of freedom in video games.

Rousseau and the Legacy of Freedom

Rousseau is often presented as "the father of progressive education." Although his educational program as it is laid out in *Emile* varies widely from contemporary progressive views, Rousseau is nevertheless often cited as the source of this movement.[7] He is credited with the break away from knowledge- and teacher-centered education toward a child-centered model that focuses on developing children's natural capacities: "He [Emile] gets his lessons from nature and not from men. He instructs himself so much the better because he sees nowhere the intention to instruct him."[8] Rousseau advocates refraining from direct instruction and discipline aimed at forcing the prevailing social norms upon children: "Do not give your pupil any kind of verbal lessons; he ought to receive them only from experience. Inflict no kind of punishment on him, for he does not know what it is to be at fault."[9]

While *Emile* was revolutionary in many ways, my interest here lies in Rousseau's conceptualization of the role of freedom in education. Rousseau claims that the tutor's role is to facilitate Emile's free exploration, and that this freedom should not be limited unless absolutely necessary. Yet, the importance of cultivating children's freedom does not imply that they should be simply left to their own devices. Rousseau espouses a very thoughtful and detailed involvement on the part of the tutor (which seemingly requires him to dedicate all his time and effort to one child). Although the tutor retains control of the educational process, the method through which the child is educated is radically different than a teacher-centered and knowledge-based model. Instead of offering the child *knowledge*, Rousseau's innovation is that the tutor is charged with orchestrating the child's *experience*: "[I]t is rarely up to you to suggest to him what he ought to learn. It is to him to desire it, to seek, to find it. It is up to you to put it within his reach, skillfully to give birth to this desire and to furnish him with the means of satisfying it."[10]

Hence, the tutor is granted the authority to determine which experiences are both natural and beneficial for the child's education, and how these can be promoted: "[Y]ou will not precisely punish them for having lied; but you will arrange it so that that all the bad effects of lying … come in league against them when they have lied."[11] Therefore, Emile's experiences cannot be simply perceived as natural; they are a result of prolonged thought and planning on behalf of the tutor. An example of the great pains the tutor goes to to engineer such "natural consequences" is worth quoting at length:

> He breaks the windows of his room; let the wind blow on him night and day without worrying about colds … Never complain of the inconveniences he causes you, but make him be the one to feel those inconveniences first. Finally, you have the windows repaired, continuing to say nothing about it. He breaks them again ... Tell him curtly but without anger, "The windows are mine; they were put there by my efforts; I want to protect them." Then you will close him

up in darkness in a place without windows … he begins by crying and ranting. No one listens to him … He moans and groans. A domestic turns up; the rebel begs him for deliverance… the domestic responds, "I too have windows to protect," and leaves. Finally, after the child has remained there several hours, long enough to get bored and to remember it, someone will suggest to him that he propose an agreement by means of which you will give him back his freedom if he no longer breaks windows … He will make you his proposition, and you will accept it on the instant, saying to him: "That is very well thought out; we will both be gainers by it. Why didn't you have this good idea sooner?"

As can be seen, the consequences of Emile's actions are natural only to the extent that the tutor perceives them as such. While Rousseau stresses the importance of freedom in education, this needs to be a form of well-regulated freedom in order to ensure that Emile experiences the consequences conducive to his development.[12] As exhibited in numerous examples such as the one above, Rousseau is not championing Emile's actual freedom, but rather, his *sense of freedom*. Adult control over the child's education is not relinquished; it is concealed in order to capitalize on the child's natural capacities for learning. Therefore, by increasing Emile's freedom, the tutor tightens his control, as Rousseau explicitly states: "There is no subjection so perfect as that which keeps the appearance of freedom."[13]

Therefore, while seeming to limit the educator's role, Rousseau simultaneously expands it. Educators are now charged with defining what children's natural interests and capacities are, both in theory (as Rousseau does in *Emile*) and in the everyday practices of education. Each natural consequence is a result of a series of decisions concerning the proper consequences of the child's actions and the best way to bring these about. As they are no longer limited by adherence to societal norms, but rather charged with the interpretation of a child's nature, educators have an amplified role in directing children's education.[14] Moreover, by locating the crux of the educational process within the child's natural interests, Rousseau obscures the educator's active role. The considerations that lead to the designation of certain behaviors as natural, and hence desirable, are attributed to the child's nature and not the tutor's judgment.

In the next section, I proceed to examine how a very similar conception of well-regulated freedom underlies much of the educational application of video games.

Video Games as Constructed Natural Environments

The tension between cultivating student freedom and pursuing predetermined educational ends is commonly overlooked in contemporary research on video games, which portrays the games as intrinsically motivating and self-directed sites of learning. In fact, games are frequently presented as an antidote to the ills of an overly structured traditional classroom education.[15]

Video games are perceived as promoting student freedom in two interrelated yet discrete ways: the freedom to choose to play, and the freedom within the game environment. The earliest proponents of educational video games presented them as advanced "behaviorist learning machines" that increase motivations for learning, offer students feedback on their performance, and adapt to students' individual pace. These early games, now (derogatively) referred to as "edutainment," functioned as more enjoyable forms of drill and practice learning and nurtured lower order skills such as memorization.[16] Recent generations of game designers and scholars distin-

guish themselves from this crude and instrumental perception of games. Backed by technological developments that allow complex simulations and immersive game worlds, they advocate games "in which the context and gameplay are inextricably linked."[17] Video games are presented as educational tools that increase player freedom *within* the game environment, facilitating naturally occurring problem solving, knowledge construction, and situated learning.[18]

This description applies both to certain commercial games as well as to specifically tailored educational games. For example, the popular commercial game series *SimCity* has garnered much academic interest. Here, players are positioned as mayors of a virtual city, and through the choices they have to take, and the consequences simulated by the game, players learn about city planning, government, geography, science, and more.[19] *Quest Atlantis*, in contrast, is a multi-user environment created specifically for educational purposes. Players fulfill various quests in an attempt to help save Atlantis, which demand engaging in collaborative, inquiry-based science learning.[20] Although empirical research is still sparse, scholars cite generally positive outcomes when games are utilized thoughtfully in classrooms as well as in alternative settings.[21]

Put differently, while the first generation of video games was perceived as an improvement on the traditional model of education, pursued through more effective means, today's games are portrayed as a break from teacher-centered models of education. In this respect, technological developments allow video games to better fulfill Rousseau's vision of child-centered and experiential education. In what follows, I illustrate how the new generation of video games – *complex simulations* and *immersive game worlds* – fulfill this vision in different ways than assumed by their proponents, as they offer players an accentuated version of Rousseau's notion of well-regulated freedom. Video games' unique ability to do so effectively derives mainly from the function of *rules* and *feedback loops* in these settings.

Rules

As famously noted by Wittgenstein, games are a notoriously difficult phenomenon to pin down.[22] Still, one of games' commonly cited characteristics is the existence of unique rules that distinguish them from utilitarian work and free play. Roger Caillois argues that in games, norms of ordinary conduct are replaced by "precise, arbitrary, unexceptionable rules that must be accepted as such and that govern the correct playing of the game."[23] What stands out in this definition is Caillois' insistence that rules "must be accepted" for the game to take place. While this might be true in traditional games – two players cannot play basketball if they do not agree (at least minimally) on the game's rules – the notion of accepting rules is starkly different in video games.

An important and frequently neglected distinction between traditional and video games is that in the latter the computer is charged with upholding the games' rules.[24] If the same two players are playing basketball on a computer, it would be very useful for them to know the rules, yet they do not need to accept these rules because the computer is programmed not to permit illegal moves. This difference has considerable advantages, as Jesper Juul notes: "This adds a lot of flexibility …

allowing for much more complex rules; it frees the player(s) from having to enforce the rules, and it allows for games where the player does not know the rules from the outset."[25] From an educational perspective, this implies that video games enable complex simulations that are unfathomable in traditional games and, therefore, that they introduce a more intricate and multi-faceted understanding of subject matter, as the case of *SimCity* exemplifies.[26] Moreover, as players do not need to know the rules upfront, a prevalent characteristic of contemporary video games is that players must explore the simulated environment in order to understand the logic underlying it, which encourages an inquiry-based mode of learning.[27]

Yet, the fact that the computer is charged with upholding the games' rules has a significant effect on players' freedom within the game. Returning to the example of basketball, while the game has a set of rules that limits permitted actions, players can choose to cheat, negotiate their proper interpretation, and even alter the rules, as often happens in non-professional contexts. In a digital version of basketball, players are not allowed to violate or alter the games' rules, unless such deviations have been accounted for in advance by the game's designers.[28] The key difference is that designers, rather than players, have the authority to determine, interpret, and enforce rules. In this respect computer game rules can be viewed as *laws of nature* that players must accept and accommodate, while traditional game rules are analogous to *laws of society*, which can be challenged, transgressed, and transformed.[29] Moreover, many of the ways in which the rules determine players conduct remains concealed within the games' "black box."[30] The implicit ways in which video games structure choice sets has raised concern among game scholars, who contend that players lack the capacity to consider and analyze the assumptions guiding the games. Ian Bogost asserts that most simulations tend to simplify choice sets to a binary distinction between good and bad gestures, which can be quantified to progress in the game.[31] David Waddington later warns that the implicit calculations built into many games encourage players to focus on "efficiency maximization."[32]

Therefore, video games intensify the Rousseauian paradox of freedom in education: increasing the amount of control possible over youth's conduct (in the game) by limiting not only the permitted actions but also the imaginable ones.[33] Moreover, the choices made by designers are more obscure (and hence "natural") as they are ingrained in the games' "laws of nature." In *Emile*, Rousseau attempts to create an artificial and isolated environment that will allow him to control the natural consequences of Emile's actions. Rousseau's scheme was unattainable; it required an implausible amount of calculation on behalf of the tutor, who dedicated himself to one student. In contrast, video games create a *constructed natural environment* (albeit much more limited in scope) in which designers can meticulously account for the varying choices taken by players and plan the ensuing consequences accordingly.

Feedback Loops

Any educational process includes some kind of feedback, whether in explicit form, such as grades or punishments, or more implicit forms, such as reactions to a student's conduct. Yet, video games introduce a new standard of intensity and complexity of feedback, as Jane McGonigal enthusiastically states: "There seems to be

no gap between your actions and the game's responses. You can literally see in the animations and count on the scoreboard your impact on the game world. You can also feel how extraordinarily attentive the game system is to your performance."[34] These tight feedback loops imply that almost every act in the game leads to tailored consequences, which in turn shape the player's next actions, and so on.

Tight feedback loops are pivotal to the presentation of video games as optimally-designed learning experiences. First, they establish an interactive learning process that is attentive to players' actions. In turn, this implies that games are more flexible and can be customized to varying paces, interests, and strengths. These loops then facilitate the development of a "cycle of expertise":

> Good games offer players a set of challenging problems and then let them solve these problems until their solutions are virtually automatic. Then the game throws a new class of problems at the players, requiring them to rethink their now taken-for granted mastery, learn something new, and integrate this new learning with their old mastery. In turn, this new mastery is consolidated through repetition (with variation), only to be challenged again.[35]

Finally, tight feedback loops mean that students are given more meaningful guidance. Instead of the decontextualized character of classroom instruction, games offer guidance "just in time" - when players need it - and "on demand" - when players actively seek assistance.[36]

At the same time, tight feedback loops increase significantly the possibility of structuring well-regulated freedom. Rousseau's window-breaking example was far-fetched because it relied on very intricate scheming by the tutor, and assumed a very specific set of reactions. However, in video games, designers can take into account a multitude of choices and structure the games' feedback loops accordingly. Beyond the intensified regulation of players' actions, tight feedback loops represent a qualitative shift in the function of feedback in games. A comparison between the feedback structures of video and traditional games might be illustrative. As traditional games are defined by a limited set of rules that players must be able to remember and follow, designers strive to create a *feedback-equilibrium*: i.e. a state in which the game's rules could support participation across a variety of contexts, levels, and styles of play. When designing a complex video game on the other hand, the goal is to create an intricate *feedback-network* that can respond to the infinite variations of players' choices, characteristic of a complex game-world.[37]

By structuring a web of tight feedback loops that trigger particular consequences, *feedback-networks* facilitate well-regulated freedom: implicitly and meticulously directing players towards the development of certain skills or conceptions concerning the game's content. In *feedback-equilibrium* on the other hand, designers strive to create a game space in which players have a wide variety of choices that cannot be fully predicted. Therefore, they afford players more freedom within the game environment.

Summary and Afterthoughts

This article strives to contribute to the lack of foundational philosophical consideration of the educational function of video games. While technology allows video games to serve as highly innovative learning tools, the value of these games is

inherently tied to the conceptualization of education that guides their use in practice. I argue that contemporary educational research on video games can be better understood as an iteration of Rousseau's notion of well-regulated freedom: harnessing students' sense of freedom as a particularly efficient way of promoting other educational ends. Due to their ingrained rule systems and feedback networks, video games create a constructed natural environment, fulfilling the Rousseauian fantasy of educating "by the laws of the possible and the impossible alone … equally unknown to him [the child], they can be expanded and contracted around him as one wants."[38]

While these naturally constructed environments have unique and important educational affordances - from virtual worlds that cultivate deep learning of scientific concepts to simulations that tackle vital social issues - the educational contribution of video games is compromised if they are employed solely as sites of well-regulated freedom.[39] Proponents of the educational potential of video games too often ignore the ways in which players' (relative) choice to play the game results in a predefined choice set within the game. Presented as sites of freedom and exploration, many contemporary video games function as educational contexts in which the majority of fundamental decisions have already been made by designers.

Consequently, the challenge facing researchers and designers today is how to diversify the educational uses of video games by creating games in which players participate in decision making not only *within the game*, but also *about the game*.[40] Such games would be characterized by feedback-equilibrium and loosely structured rules. Equilibrium based games do not allow uninhibited freedom, but they shift the balance towards cultivating meaningful student independence. The seeds for such a change already exist: from increasingly popular sandbox games such as *Minecraft*, in which players do not pursue clearly defined goals or quantifiable progress,[41] to platforms that allow the user to design their own games, rather than limiting them to the role of players.[42]

There is an intrinsic tension between facilitating student freedom and striving to promote a set of predetermined educational ends. Balancing the two should be carried out consciously and thoughtfully. This effort is particularly important in the context of games. Games are traditionally a space in which children enjoy a relative lack of adult supervision; where children are entrusted with the social responsibility of determining and upholding rules, with the moral decision making that pertains to compliance, and with the authority to negotiate rules in light of shifting circumstances.[43] If we wish to fully utilize the educational potential of video games, we must acknowledge the deep-rooted Rousseauian legacy of well-regulated freedom. The appeal of using children's sense of freedom as a means of achieving other educational aims is strong. However, the new educational horizon offered by video games challenges us to overcome the illusion that educators can cultivate children's freedom without relinquishing their control.

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1. Jean-Jacques Rousseau, *Emile or on Education*, trans. Allan Bloom (New York: Basic Books, 1979), 120.

2. Amanda Lenhart, Joseph Kahne, Ellen Middaugh, Alexandra Rankin Macgill, Chris Evans, and Jessica Vitak, "Teens, video games, and civics: teens' gaming experiences are diverse and include significant

social interaction and civic engagement," *Pew Internet & American Life Project* (2008), http://www.pewinternet.org/2008/09/16/teens-video-games-and-civics/.

3. Christopher J. Ferguson, "Do Angry Birds Make for Angry Children? A Meta-Analysis of Video Game Influences on Children's and Adolescents' Aggression, Mental Health, Prosocial Behavior, and Academic Performance," *Perspectives on Psychological Science* 10, no. 5 (2015): 646-666.

4. Some notable examples: James Paul Gee, *What Video Games Have to Teach Us about Learning and Literacy* (New York: Palgrave Macmillan, 2014); Kurt Squire, "Video Games in Education," *International Journal of Intelligent Games & Simulation* 2, no. 1 (2003): 49-62; Sasha Barab, Michael Thomas, Tyler Dodge, Robert Carteaux, and Hakan Tuzun, "Making Learning Fun: Quest Atlantis, a Game without Guns," *Educational Technology Research and Development* 53, no. 1 (2005): 86-107.

5. For an exception, see: David I. Waddington, "Dewey and Video Games: From Education through Occupations to Education through Simulations," *Educational Theory* 65, no. 1 (2015): 1-20.

6. Rousseau, *Emile*, 92.

7. Avi I. Mintz, "The Happy and Suffering Student? Rousseau's Emile and the Path Not Taken in Progressive Educational Thought," *Educational Theory* 62, no. 3 (2012): 249-265, 251.

8. Rousseau, *Emile*, 119.

9. Ibid., 92.

10. Ibid., 179.

11. Ibid., 101.

12. Scott Walter, "'The 'Flawed Parent': A Reconsideration of Rousseau's Emile and its Significance for Radical Education in the United States," *British Journal of Educational Studies* 44, no. 3 (1996): 260-274, 264.

13. Rousseau, *Emile,* 120.

14. Jürgen Oelkers, "Rousseau and the Image of 'Modern Education'," *Journal of Curriculum Studies* 34, no. 6 (2002): 679-698, 692.

15. James Paul Gee, "Good Video Games and Good Learning," *Phi Kappa Phi Forum* 85, no. 2 (2005): 33-37, 36.

16. These categories describe general trends; in any era there are games that defy common perceptions. Begoña Gros, "Digital Games in Education: The Design of Games-Based Learning Environments," *Journal of Research on Technology in Education* 40, no. 1 (2007): 23-38, 25.

17. Kurt Squire, "From Content to Context: Videogames as Designed Experience," *Educational Researcher* 35, no. 8 (2006): 19-29, 24.

18. Constance A. Steinkuehler, "Why Game (Culture) Studies Now?," *Games and Culture* 1, no. 1 (2006): 97-102.

19. For a recent review of research on SimCity, see: John Minnery and Glen Searle, "Toying with the City? Using the Computer Game SimCity™ 4 in Planning Education," *Planning Practice and Research* 29, no. 1 (2014): 41-55.

20. Barab et al., "Making Learning Fun," 87.

21. Douglas B. Clark, Emily E. Tanner-Smith, and Stephen S. Killingsworth, "Digital Games, Design, and Learning: A Systematic Review and Meta-Analysis," *Review of Educational Research* 68, no. 1 (2015): 79-122.

22. Ludwig Wittgenstein, *Philosophical Investigations*, trans. G. E. M. Anscombe (Oxford: Basil Blackwell, 1958), 32.

23. Roger Caillois, *Man, Play, and Games*, trans. Meyer Barash (Chicago: University of Illinois Press, 1961), 6.

24. Michael Liebe, "There Is No Magic Circle," in *Philosophy of Computer Games Conference Proceedings*, eds Stephan Günzel, Michael Liebe, and Dieter Mersch (Potsdam: Potsdam University Press, 2008): 333-334.

25. Jesper Juul, "The Game, the Player, the World: Looking for a Heart of Gameness," in *Level Up: Digital Games Research Conference Proceedings*, eds Marinka Copier and Joost Raessens (Utrecht: Utrecht University, 2003), 10-11.

26. Squire, "Games in Education," 6; Waddington, "Dewey and Video Games," 9.

27. Katie Salen and Eric Zimmerman, *Rules of play: Game Design Fundamentals* (Cambridge, MA: MIT Press, 2004), 90.

28. Of course, other forms of cheating have developed in video games. See: Mia Consalvo, *Cheating: Gaining Advantage in Videogames* (Cambridge, MA: MIT Press, 2007).

29. Chris DeLeon, "Rules in Computer Games Compared to Rules in Traditional Games," in *DiGRA 2013: DeFragging Game Studies Conference Proceedings* (Atlanta: Digital Games Research Association), 4.

30. Salen and Zimmerman, *Rules of Play*, 88.

31. Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge: MIT Press, 2007), 326.

32. Waddington, "Dewey and Video Games," 18.

33. Researchers have sought to alleviate this tension by accompanying gameplay with reflection on the game's "black box" (e.g., Bogost, *Persuasive Games*, 258). A valuable venture in its own right, my interest here lies in examining children's actions within the games.

34. Jane McGonigal, *Reality is Broken: Why Games Make Us Better and How They Can Change the World* (New York: Penguin, 2011), 24.

35. Gee, "Good Video Games and Good Learning," 36.

36. Ibid.

37. There are video games that do not fit this description, yet as a general trend, educational video games are characterized by feedback-networks rather than feedback-equilibrium.

38. Rousseau, *Emile*, 92.

39. Another important factor when considering children's freedom, which is beyond the scope of this article, is the ethical principles guiding the attitude towards children. See: Walter, "The 'Flawed parent'," 265.

40. This distinction echoes Carpenter's critique of the exaltation of participation afforded by digital media. Active participation in itself is not sufficient; we should explore the extent to which actors have power in a decision-making process. Henry Jenkins and Nico Carpentier, "Theorizing participatory intensities: A conversation about participation and politics," *Convergence: The International Journal of Research into New Media Technologies* 19, no. 3 (2013): 265-286, 276.

41. Sean C. Duncan, "Minecraft, beyond construction and survival," *Well Played: A Journal on Video Games, Value, and Meaning* 1, no. 1 (2011): 1-22.

42. Yasmin Kafai, "Playing and making games for learning instructionist and constructionist perspectives for game studies," *Games and Culture* 1, no. 1 (2006): 36-40.

43. Jean Piaget, *The Moral Judgment of the Child*, trans. Marjorie Gabain (New York: Simon & Schuster, 1997), 14.