

# DINOTOPIA

By

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Scholarly Research Paper  
Presenting to Toronto Metropolitan University

in partial fulfillment of the requirement for the degree of

Master of Arts  
in the Program of  
Literatures of Modernity

Toronto, Ontario, Canada, 2024

Charalambos Papoutsis 2024

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## ABSTRACT

Dinotopia explores the two principle works, the novel *Jurassic Park* by Michael Crichton and a video game, *Dino Crisis* by Capcom through a philosophical lens. The paper explores the roots of scientific horror using Mary Shelley's *Frankenstein*, which provides both a history and a definition, and acts to provide a differentiation to both principle works. I discuss *Jurassic Park* as using science for profit, which highlights on how discovery can become horror through a capitalistic angle. In my assessment of *Dino Crisis*, I explore using science for power by discussing energy (nuclear) research shown in the game. I also assess *Dino Crisis* and its procedural rhetoric as I argue interactivity is the next stage in the genre's evolution. Finally, I conclude my analysis at the end.

### **Key Words:**

A comparative paper on the philosophy and ethics of scientific horror portrayed in *Jurassic Park* and *Dino Crisis* used the key words: scientific horror; procedural rhetoric; interactivity; discovery; science.

## Introduction

In the horror genre, dinosaurs would seem like an obvious-go-to culprit for a situation gone awry, especially when one factors in their enormous sizes and cunning lethality as conventionally depicted in popular media. However, unlike vampires, zombies, ghosts, insane serial killers, killer robots, and the like, there have been very few successful works that have used dinosaurs as the focal point for horror. The earliest literary work that depicted dinosaurs and humans interacting was Edgar Rice Burroughs' *At The Earth's Core* (1914) which combines cavemen with dinosaurs in the fictional Pellucidar, a realm inspired by the Hollow Earth Theory. However, Burroughs' work is not considered horror but fantasy. I will explore two works of science fiction featuring dinosaurs and how they are used to explore how scientific discovery turns into scientific horror. Despite their infrequent use, dinosaurs make for intriguing and unique horror creatures because they are real (or were) but anachronistic; because they are 'prehistoric,' have never coexisted with human beings, their appearance in the present is fundamentally strange and unsettling. I will be exploring the philosophical ramifications of scientific experimentation and the folly of trying to master nature, especially when greed and the desire for power are motivators, in connection to dinosaurs as treated in Michael Crichton's novel *Jurassic Park* (1990) and in a videogame, Capcom's *Dino Crisis* (1999).

The connection between *Dino Crisis* and *Jurassic Park* beyond their use of dinosaurs is their representation and exploration of the potential horrors of scientific research when driven by unethical motives. *Jurassic Park* uses the character of the chaos theorist, Dr. Ian Malcolm, as a mouthpiece to criticize the character John Hammond's capitalist foray into

utilizing regenerated dinosaurs as an island theme park attraction. Malcolm's role in the novel mirrors that of Cassandra, a figure in Greek mythology who was granted the power of prophecy by an enamored Apollo but whose rejection caused the god to sabotage that power with a curse, so that no one would believe her (as it turned out, true) prophecies about the destruction of Troy. Similarly, Malcolm's theory-based prediction that the dinosaurs will eventually escape human control and wreak havoc on the park are ignored; no one believes him. Similarly, in *Dino Crisis*, Ibis Island is the centre of scientific research led by the single-minded Dr. Edward Kirk into what is called Third Energy, which creates an energy source responsible for time displacement (time travel) that leads to dinosaurs 'transported' to the island in the present. While Kirk is only interested in furthering his research, this research is funded by a government that is interested in the potential of Third Energy as a weapon (and the player character is part of a team that is trying to obtain this research for another government interested in its possibilities as a weapon). In these works, we see a critique of and cautionary tale about scientific experimentation and hubris, particularly relating to genetic and atomic/nuclear research, as they transform from stories about the heroism of scientific discovery into the immorality that leads to scientific horror.

## Scientific Horror

Scientific horror has a rich legacy that dates to Mary Shelley's *Frankenstein; or The Modern Prometheus* (1818). The novel was written in the wake of the Age of Enlightenment, an intellectual movement that saw people adopt more secular, scientific thinking. However, in his "The Gothic Origins of Science Fiction" (1980), Paul Brantlinger describes the primary message of the gothic romance, which emerged near the end of the

Enlightenment, as “involving an assertion of the power of the irrational over the rational” (Brantlinger 31). This assertion of the irrational over the rational is seen in other classic works of science fiction, for example in H. G. Wells’ *The Island of Dr. Moreau* (1896) and the title’s character’s grotesque experiments creating Beast Folk, human-animal hybrids. So, the gothic origins of scientific horror evoke “a rejection or a symbolic putting to sleep of reason; they are both forms of apocalyptic nightmare fantasy characterized by themes of demonic possession and monstrous distortion” (Brantlinger 31).

*Frankenstein* is the most significant literary contribution that intersects science with horror because it narrates Victor Frankenstein’s attempt to create an intelligent humanoid lifeform. Frankenstein’s initial motivations for animating a lifeform stem from his inability to accept human mortality. The death of his mother is the catalyst for his scientific experimentation, as he initially wanted to raise the dead; however, he turns this to exploring the possibility of creating new life. In “Frankenstein: Creation as Catastrophe” (1981), Paul Sherwin argues that the monstrosity of the Creature is only perceivable by Frankenstein upon animation, that is, after it is too late for Frankenstein to understand the folly of his research: “the Creature is a sleeping beauty until its orgasmic stirring rouses Frankenstein to recognize the monstrosity before him” (Sherwin 885). The empowerment of scientific experimentation followed by the horror of disempowerment thus transforms the Creature from an emblem of divinity, a new Adam, to an embodiment of the menacing grotesque. We can understand *Frankenstein* as a cautionary tale that explores the dangerous potential of unrestrained scientific inquiry; it depicts Victor Frankenstein assuming the same role as God, a creator of life. When he rejects his creation, he becomes like Prometheus, a figure in

Greek mythology who was said to have created humans and who gifted fire to them and was punished by Zeus, king of the gods. In this case, we witness a perversion of the creation punishing the creator. In *Jurassic Park* and *Dino Crisis*, the exploration and exploitation of scientific experimentation are also aligned with hubris and the triumph of irrational desire, but rather than being motivated by the death of a loved one (as in Frankenstein's case), in these works it is greed and power that is placed over reason.

### *Jurassic Park: Using Science for Profit*

In *Jurassic Park* John Hammond, a businessman who owns a bioengineering company, InGen, plans to unveil a theme park with regenerated dinosaurs as its main attraction. To confirm the park's safety and verify the authenticity of the dinosaurs, he invites specialists to assess the park. These specialists are a paleontologist, Alan Grant; a paleobotanist, Ellie Sattler (Grant's graduate student); chaos theorist/mathematician, Ian Malcolm, and a lawyer, Donald Gennaro, a representative of Hammond's investors, who have become skittish in the wake of the recent attacks on a couple of locals by some unknown creatures.

Crichton's novel is a response to recent developments in gene-splicing, as attested by the timeline of the "History of Genetic Engineering and the Rise of Genome Editing Tools" (*Synthego*). In fact, in 1990, the year *Jurassic Park* was published, "the Human Genome project succeeded in mapping the human genome with more than 20 thousand genes identified and their genomic loci documented." (*Synthego*, "1990s: Cloning and GMOs"). The jumpstart of cloning and the successful identification of the human genome

subsequently created the “genetic essentialism” movement as described by Dorothy Nelkin in her *The DNA Mystique: The Gene as a Cultural Icon* (2004).

... the idea of genetic essentialism can serve many different social agendas, so it also intersects with important American values. Genetic explanations of behaviour and disease appear to locate social problems in the individual rather than in society, conforming to the ideology of individualism. [...] By elevating DNA and granting it extraordinary powers of agency and control, genetic essentialism erases complexity and ambiguity. (Nelkin 200-02)

At its heart, genetic essentialism assumes science can strip away the veneer of ambiguity and complexity of human and animal behaviour by suggesting that DNA can be manipulated to assert absolute power and control over biological entities (in this case, dinosaurs). This idea that science can assume absolute control over nature (including genes) is criticized near the start of the novel in a conversation between Malcolm and Gennaro:

“And Hammond's project,” Malcolm said, “is another apparently simple system—animals within a zoo environment—that will eventually show unpredictable behavior.”

“You know this because of . . .”

“Theory,” Malcolm said.

“But hadn't you better see the island, to see what he's actually done?”

“No. That is quite unnecessary. The details don't matter. [Chaos] Theory tells me that the island will quickly proceed to behave in unpredictable fashion.”

“And you're confident of your theory.”

“Oh, yes,” Malcolm said. “Totally confident.” He sat back in the chair. “There is a problem with that island. It is an accident waiting to happen.” (Crichton 74)

With no guardrails in place, and no intelligent policy implemented to control this monumental scientific breakthrough in biotechnology, Hammond's dinosaur theme park attraction was unquestionably going to fail. The fatal assumption with Jurassic Park was that humans can have ultimate control over natural processes.

Crichton uses Malcolm to criticize emergent genetic engineering and the lack of a scientific ethic that would restrain that experimentation:

We are witnessing the end of the scientific era. Science, like other outmoded systems, is destroying itself. As it gains in power, it proves itself incapable of handling the power. Because things are going very fast now. Fifty years ago, everyone was gaga over the atomic bomb. That was power. No one could imagine anything more. Yet, a bare decade after the bomb, we began to have genetic power. And genetic power is far more potent than atomic power. And it will be in everyone's hands. It will be in kits for backyard gardeners. Experiments for schoolchildren. Cheap labs for terrorists and dictators, And that will force everyone to ask the same question—What should I do with my power?—which is the very question science says it cannot answer. (Crichton 305)

The moral themes in *Jurassic Park* echo *Frankenstein* considerably. One of these is the lack of awareness of ethical boundaries when engaged in scientific experimentation and



exploitation, a lack which is punished when the experiment gets out of control. In *The Fabrication of Man: The Ethics of Genetic Research* (1970), theologian Paul Ramsey writes, “we should not play God before we have learned to be men, and as we learn to be men [,] we will not want to play God” (Ramsey 151). This has traditionally been shortened to “playing God.” So, when Malcolm says “there is no humility before nature” he is essentially proclaiming that Hammond is playing God. Crichton differs from Shelley in his subtle critique of the misapplication of scientific research for capitalist profit. Malcolm’s fear about Hammond’s ignorance and his lack of discipline are the keynotes of the primary message depicted in science fiction and the gothic romance, although in Hammond’s case, he is not the scientist but the uncomprehending exploiter of scientific discovery for profit.

Hammond’s goal in creating the park is to make money, and this goal has prevented him from appreciating (or caring about) the scientific risks of his capitalist undertaking. Hammond’s lack of humility, fostered by hubris, is evidenced by Malcolm’s speech to Hammond, where he says:

Scientific power is like inherited wealth: attained without discipline. You read what others have done, and you take the next step. You can do it very young. You can make progress very fast. There is no discipline lasting many decades. There is no mastery: old scientists are ignored. There is no humility before nature. There is only a get-rich-quick, make-a-name-for-yourself-fast philosophy. Cheat, lie, falsify-it doesn't matter. Not to you, or to your colleagues. No one will criticize you. No one

has any standards. They are all trying to do the same thing: to do something big, and do it fast.

Because you can stand on the shoulders of giants, you can accomplish something quickly. You don't even know exactly what you have done, but already you have reported it, patented it, and sold it. And the buyer will have even less discipline than you. The buyer simply purchases the power, like any commodity. The buyer doesn't even conceive that any discipline might be necessary. (Crichton 298)

Hammond tells Dr. Henry Wu, his lead geneticist, that “the newly emerging technology of genetic engineering [is going] to make money. A lot of money” (Crichton 194). That promise of money engenders corporate rivalry and sabotage. Sabotage is the catalyst for *Jurassic Park's* science to become horror, and this sabotage is motivated by the desire for economic power: in the novel, Lewis Dodgson is the head of research at Biosyn, a rival to Hammond's InGen. He wishes to illegally acquire InGen's dinosaur embryos to reverse engineer the cloning techniques and make dinosaurs himself (Crichton 66). This criminal act is motivated by corporate competition: in a meeting with the board of directors of Biosyn, Dodgson says, “genetically engineered animals can now be patented. The Supreme Court ruled on that in favor of Harvard in 1987. InGen will own its dinosaurs, and no one else can legally make them” (Crichton 66). This ties into Crichton's portrayal of the misapplication of scientific research for capitalist profit; it subsequently touches on Hammond's hubris and lack of humility because he owns the legal rights to clone dinosaurs and seeks to profit on them. And Hammond wants to maximize profits as much as possible: he tells the lawyer

Donald Gennaro that “the secret to making money in the park is to limit your Personnel costs [...] to make a park that runs with minimal staff [so] we automated whenever we could” (Crichton 61). This creates an unintended cascading effect: Hammond’s ‘cost-savings’ results in him underpaying and compromising the loyalty of chief programmer Dennis Nedry, which leads to Nedry’s decision to steal the dinosaur embryos and sell them to Biosyn (Crichton 68; 173-4).

In his essay/chapter, “Superiority Is Our Weakness?” in *Jurassic Park and Philosophy: The Truth Is Terrifying* (2014), Christopher Ketcham writes, “that our genes are selfish” (Ketcham 167). He adds,

I think our feeling of superiority is a selfish gene trait—It’s a way of convincing ourselves that we’re above all in order to justify our taming and exploiting the world. Some humans believe God tells them they are the chosen beings, and believe that when God punished us for our sinfulness, he let Noah and his family on the ark so that we could survive. God didn’t spare the raptor and other dinosaurs. . . . But wait. The mosquito sipped from dinosaur veins and in the end, raptor DNA was preserved in amber, so it could thrive again. God? Selfish Genes? What? (171)

Ketcham is pulling at a delicate thread, which reflects the interplay between science, hubris, and horror. This feeling of superiority in the human spirit inevitably leads to the downfall of Jurassic Park, and to the untimely deaths of its instrumental creators Dr. Henry Wu and John Hammond (both killed by the dinosaurs they created). That in and of itself reflects *Frankenstein*, where catastrophe follows creation, but these aspects are, I believe, inherently Biblical because catastrophe followed the creation of the first man and woman,

who were led to sin and were afterwards cast out of the Garden of Eden by God. I think creation and scientific experimentation go hand in hand with chaos and destruction. We can understand this based on Malcolm's predictions of Hammond's park failing. All Malcolm had to do was trust in Chaos Theory to infer that the regenerated dinosaurs would overtake the systematic control implemented by InGen. Therefore, discovery, experimentation, and horror all eventually coincide into destruction of considerable magnitude.

## *Dino Crisis: Using Science for Power*

In *Dino Crisis* “[a] special [American] commando unit is sent to a remote island, where a mad scientist, Doctor Kirk, has been researching a way to harvest energy directly from air, causing an unimaginable disaster. Their goal is to locate a missing government agent sent to infiltrate the facility and spy on Kirk and his secretive dealings with the [Borginian] military” (IMDB). The cast of characters in *Dino Crisis* are Regina (the protagonist and player character), a special intelligence operative attached to S.O.R.T. (Secret Operation Raid Team); government agent Rick, a technology and computer security expert assigned to S.O.R.T; Gail, the S.O.R.T. team leader; and Dr. Edward Kirk, an energy researcher whose work was initially funded by the US government. In *Dino Crisis*, we witness experimentation on something called Third Energy, which was developed by Kirk to serve as a replacement for nuclear power or ‘Second Energy’ (Dino Crisis Wiki). The goal of Third Energy research was to provide a form of energy that was not hazardous (polluting) and inexhaustible. The side effects of Third Energy, however, include time displacement—“at extraordinary power levels, it will result in space and time manipulation” (Dino Crisis

Wiki). In effect, the manipulation of the space-time continuum essentially replaces a portion of the landscape with a landscape that existed in a former time, as in the case of the incident on Ibis Island in *Dino Crisis*; in effect, this creates the geospatial abnormalities that produce the conditions of horror: a portion of the island is replaced with a landscape from a time when dinosaurs roamed the earth. Crichton's influence on scientific horror was so profound that *Jurassic Park* is referenced in *Dino Crisis*: "This is just like that movie," Rick says to Regina, a clear nod to the film version of Crichton's novel.

Despite its noble origins, Third Energy was seized by the Borginian Republic to be used as a weapon, rather than a clean energy source. The potential weaponizing of Third Energy mirrors the real-world applications of atomic/nuclear research. The Borginian Republic's interest in Third Energy as a potential weapon mirrors real-world military interest into the weaponization of scientific research. Furthermore, the creation of Third Energy also involves dabbling with forces that we might attribute to God, and which has a wide array of applications: from sustainable clean energy to potential nuclear power. Edward Kirk mirrors Victor Frankenstein in some capacity because he represents a typical amoral ("mad") scientist who is resolved to do whatever it takes to continue his research. This is why Kirk commits treason against the United States when he entered negotiation with the Borginian Republic after the US-government cut funding to his research, thereafter, agreeing to develop it into a weapon. In effect, Kirk is unconcerned about the real-world consequences of Third Energy, including unleashing dinosaurs into the present.

The choice to focus in *Dino Crisis* on atomic (or more broadly energy) research over genetic research and geopolitical tensions that threaten the use of weapons of mass destruction may have to do with the Kosovo War.

The worsening in U.S.-Russian relations threatens the Comprehensive Test Ban Treaty, efforts to halt the spread of weapons of mass destruction, revisions on a treaty on troops and conventional arms in Europe, and plans for joint early-warning cooperation to avoid an accidental missile attack. (*Washington Post Foreign Service, Arms Control Damaged by Kosovo War, 1999*)

The attempts to ban “the spread of weapons of mass destruction” probably influenced the political lore of *Dino Crisis*, as Regina, alongside Rick and Gail, is tasked by the US government to find and detain Dr. Kirk while ensuring his experiment does not fall into enemy hands. It is also important to point out that S.O.R.T. represents the US, and they want to get a hold of Kirk’s research, so they can use it as a weapon. Kirk’s research as a weapon is observable in this memo written by him for unknown parties, most likely the Borginian Republic, however.

If the Third Energy reaction exceeds the critical point, it evokes the "overload" phenomenon. When this happens, we can't control it. The huge amount of energy creates chain reactions and begins to disintegrate the surrounding air. The ensuing explosion will vaporize anything in the near vicinity. If we could control the area where the "overload" occurs, the Third Energy will literally become the "Ultimate Weapon." The power of the weapon depends on how much energy we can restrain before the explosion occurs. In other words, the capability of the Stabilizer is the key

to everything. The Third Energy was supposed to be the project of the development policy: "Create the basic power source for the Permanently Stationed Weapon."

If we change the policy of the project here and now, this government will be able to obtain the most deadly destructive device in the world. However, our current budget is completely out of the question. You'll find my estimate of the budget in the next chapter. Please review and consider. ("Third Energy as the Final Weapon", Dino Crisis Wiki)

Additionally, in *Dino Crisis* the player is allowed to determine the game's objectives based on which character they will side with: Rick, who is more level-headed and strategic, or Gail, who tends to charge in guns blazing, and ask questions later (perhaps an allegory of the stereotypical American man). Based on either choice, the game will either become more puzzle-centric or dinosaur-centric. Since Third Energy started as a US-regulated research experiment, the game's plot becomes deeply enmeshed in, not so much the threat of dinosaurs, but the pursuit and eventual detainment of Edward Kirk. The subsequent encounter with dinosaurs is secondary to S.O.R.T.'s true objective, so I would further argue that *Dino Crisis* is similarly depicting the same theme as *Jurassic Park*: the misapplication of scientific research for capitalist profit with the dinosaurs acting as tangible consequences.

## Procedural Rhetoric in *Dino Crisis*

A key distinction between the two works of scientific horror being examined here is that *Dino Crisis* is a video game. I argue the importance of *Dino Crisis* is its ability to

transmediate scientific horror because it follows a logical genre-defining evolution as video games entered mainstream entertainment in the late 20<sup>th</sup> century after the emergence of cinema in the early 20<sup>th</sup> century. Video games are the only medium in the world to facilitate interaction between the user interface and/or controller and the player, and because *Dino Crisis* was influenced immensely by *Jurassic Park*, I argue that its imprint as a form of art (perhaps even literature) is an integral one because the player is an active participant in the game's events. *Dino Crisis*, unlike *Jurassic Park*, uses player actions to influence the narrative.

*Dino Crisis* accomplishes this by incorporating procedural rhetoric into the mix. In his *Persuasive Games: The Expressive Power of Videogames* (2007), Dr. Ian Bogost coins and defines the concept of 'procedural rhetoric'. "Procedural rhetoric [...] is a practice of using processes persuasively" (Bogost 3). The intellectual appeal behind *Dino Crisis* is its ability to immerse the player directly into the catastrophic events depicted in the video game. As I previously discussed, the player possesses the ability to determine the game's objectives, the freedom to decide player objectives ultimately determines Kirk's fate and by extension the secret of Third Energy, based on who they will side with: Rick or Gail. Bogost understands game design "frameworks, and other common groupings of procedural tropes as commensurate with forms of literary or artistic expression, such as the sonnet, the short story, or the feature film" (Bogost 14). Therefore, *Dino Crisis* becomes rhetorically significant because it not only communicates through text or visuals but through interactivity. *Jurassic Park* confines the would-be reader to their imagination and their reactions, but *Dino Crisis* provides an experiential simulation such that the consequences



of scientific horror produce vivid weight through player choice. By this, I mean the player must undertake certain moral decisions as the narrative unfolds, and so player agency can create cascading ripple effects throughout the game. If players side with Rick over Gail throughout the whole game, then Kirk will die. If Kirk dies, then the secret of Third Energy inevitably perishes with him, thus the United States will lose access to such knowledge. In this case, the exploration of scientific horror in an interactive mode through *Dino Crisis* allows us to take direct control over the consequences of scientific horror, and perhaps by allowing Third Energy to die with Edward Kirk, it will prevent further incidents like those depicted in the game (sadly not as per the events of *Dino Crisis 2*, where the US carried on similar experiments and suffered the same fate— there is a lesson here somewhere).

In a response to a question about whether video games are the best medium to express horror, Shinji Mikami replied:

Well, in certain ways it is the best medium, because in a videogame you can control the character, so you feel the shock when things happen. At the same time, in a videogame we can't describe how you are actually feeling, internally, moment to moment. This can be done best in books, and secondarily in movies. So we cannot tell you what you should be feeling. Videogames need their "horror factor" to be a lot more concentrated. It's also tough because you don't control the pacing, like you can in a movie. You never know where a player will want to go next. But we solve this by setting some parameters or objectives that the player must achieve before enabling them to go further into the game. (Dino Crisis Wiki)

Effectually, I believe *Dino Crisis* is the best medium to represent scientific horror (with dinosaurs!) resulting from misappropriated scientific research because the player must make these discoveries for themselves by directing the narrative through the completion of objectives. For example, the game is host to a multiplicity of lore-related documentation that the player has the freedom to read, which can reveal more about the nature of Third Energy and life at Ibis Island prior to the manifestation of dinosaurs.

Active participation in *Dino Crisis* invites a degree of autonomy and ambiguity—autonomy because the player can dictate the game’s objectives and ambiguity because the player has no idea what the consequences will be. Bogost discusses the concept of ideological frames in video games, for example writing, “Frames or contexts are not merely theoretical structures for intellectual navel-gazing; they are operational models that are actively influencing public policy” (Bogost 100-1). In the opening of *Dino Crisis*, an undercover agent (from S.O.R.T) working at Ibis Island narrates:

I have successfully infiltrated under the guise of a researcher as planned. I have encountered no information regarding top secret development of new-type weapons, but I have discovered there is an unexpected individual at this facility. The man is Dr. Kirk; the leading authority of our nation’s energy research.

...Recommending that necessary actions be taken immediately. (*Dino Crisis*)

The keyword ‘action’ is important as the game invites the player’s participation, which behaves as the nexus between scientific discovery and scientific horror. Case in point, the player can only learn about the events that transpired on Ibis Island by reading this in-game letter:

It is easy to unleash any kind of power. The real task is keeping the power under control. The improvement of the "Initializer" ignition device has enhanced energy efficiency to the maximum. Despite that progress, we have been unable to advance the development of the "Stabilizer" safety valve since the accident that happened [three years ago](#). The "Third Energy Theory" will surely alter human history drastically. [...] The result of tonight's experiment may please the military people in a sense. The giant creatures [dinosaurs] that emerged just after the experiment [the one which occurred prior to the events of the game] have given me much inspiration. ("Doctor's Journal", Dino Crisis Wiki)

I stipulated before that the player has the freedom to peruse and read the in-game documents, thus it is entirely possible to miss these minute nuances so integral to the scientific horror experience. Nevertheless, the transmediation of scientific horror in *Dino Crisis* certainly achieves a level of interactivity and immersion not found in *Jurassic Park* because unlike Crichton's text, the player must make their own decisions as a moral agent and as indicated, uncover these scientific discoveries on their own, which is why I argue that *Dino Crisis* is the next stage in witnessing the evolution of scientific horror because it is a video game.

## Conclusion

In *Jurassic Park* and *Dino Crisis*, the dinosaurs represent scientific horror resulting from misappropriated scientific research. In each case, the experimentation and exploitation of scientific research underscores the fatal flaw identified in *Jurassic Park* and similarly in *Dino Crisis*, that human beings believe they maintain ultimate control over natural processes. Like my argument of human beings attempting to master nature, the nonhuman, or animal, element of *Jurassic Park* and *Dino Crisis* can additionally offer, not merely a horror, but also moral lens. In Steven Spielberg's film adaptation of *Jurassic Park*, Ellie Sattler says: "the question is - - how much can you know about an extinct ecosystem, and therefore, how could you assume you can control it? [...] these are aggressive living things that have no idea what century they're living in and will defend themselves. Violently, if necessary" (Koepp, David, *Jurassic Park* (1992) screenplay).

In effect, in *Jurassic Park* and *Dino Crisis*, it becomes evident that the consequences of the experiments remain irreversible—the dinosaurs remain, and science experimentation, once begun, cannot be put 'back in the bottle.' The lesson here, as Ian Malcolm says, is "life [or nature] finds a way" (Crichton 156): the dinosaurs acclimate to their newfound environment and conditions and begin to thrive in the modern world. Thus, scientific experimentation will always predicate an unpredictable outcome despite all barriers or forms of control. For example, as popularly depicted, the dinosaurs in *Jurassic Park*, despite being all female were able to change their sex to breed. This was an unforeseen consequence after Dr. Wu introduced amphibian DNA into their gene pool, to

fill in the gaps. Likewise, the experiments on Ibis Island were initially highly regulated and in a controlled environment until Edward Kirk sabotaged his own research to fake his death and disappear. Furthermore, as a video game, *Dino Crisis* enters a continuing genre-defining legacy in scientific horror for its ability to transmediate the genre. Thus, what *Dino Crisis* adds, that *Jurassic Park* does not, is making the player a moral agent. Do you, as Regina, detain Dr. Edward Kirk as part of your job, or do you have an agenda of your own?

This paper has endeavoured to assess and critique the depiction of scientific experimentation in *Jurassic Park* and *Dino Crisis* as particularly demonstrated with genetic and atomic/nuclear research related to dinosaurs. These works show a clear link between scientific discovery and horror and that there is a tether binding the two together in the hubris of the belief in human control of nature.

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