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Jakub Alejski*

ORCID: 0000-0001-5828-1536
Adam Mickiewicz University in Poznań

Elżbieta Kowalska**

ORCID: 0000-0003-0462-5617
Adam Mickiewicz University in Poznań

HOW GANDHI WENT NUCLEAR: POTENTIALITY OF THE ARCHIVERSE IN *CIVILIZATION VI*

"Nuclear Gandhi" is a surprising and controversial image of the Indian leader Mahatma Gandhi. Often portrayed against the backdrop of nuclear explosions, his poses and styles clearly suggest awe and admiration for the ongoing mass destruction. This image is related to Sid Meier's *Civilization VI* – one of the most influential video games in the history of gaming. The aim of the article is to analyze this particular case study and consider processes from many different angles that led to the emergence of this controversial phenomenon. To do so, the notion of archiverse is introduced – an assemblage (after Jane Bennett) of all cultural, political, economic and technological archives performed by the user. By following the connections between different and often seemingly distant data and contexts, it is possible to propose an archive-centric perspective for video game studies.

Keywords: new materialism, media culture, archive, game studies, assemblage, software studies, art and science

INTRODUCTION

"Nuclear Gandhi" is a surprising and controversial image of the Indian leader Mahatma Gandhi. Often portrayed against the backdrop of nuclear explosions, his poses and styles clearly suggest awe and admiration for the ongoing mass destruction. Alternatively, he is juxtaposed with some nihilistic quotes about nuclear weapons. This particular cultural trail is related to the fanbase of the *Civilization* video game series, but numerous references in pop culture or comments from people outside the world of video games – such as in an

* Corresponding author: Jakub Alejski, Uniwersytet im. Adama Mickiewicza w Poznaniu, Katedra Teatru i Sztuki Mediów, ul. Fredry 10 60-701 Poznań; e-mail: ja5447@amu.edu.pl
** Elżbieta Kowalska, Uniwersytet im. Adama Mickiewicza w Poznaniu, Katedra Teatru i Sztuki Mediów, ul. Fredry 10, 60-701 Poznań

interview with Elon Musk (Hamill, 2019) – testify to its impact on contemporary media culture. This image has become a significant element of the language of memes and GIFs, but it is also a source of numerous intertextual references (Figure 1 presents author's collage made from fans illustrations). The aim of the article is to analyze this particular case study and consider cultural, technological and social processes that led to the emergence of this controversial phenomenon. The research method of analyzing the video game series is based on a speculative perspective, followed by taking a "research in motion" approach. The article itself will emerge as an assemblage of entangled technological, cultural, economic and social archives, showing interpenetrating spheres of interaction among working objects. Jane Bennet in the second chapter of her book *Vibrant Matter* gives an extensive description of her understanding of the phenomenon of assemblage: "The distinctive efficacy of a working whole made up, variously, of somatic, technological, cultural, and atmospheric elements", they have various sources and sites of agency, and generate mobility which resists full translation, where "human and nonhumans live and act in open wholes that pulse with energies" (Bennett, 2005, pp. 447–461). Just like Mieke Bal's "wandering notions" (Bal, 2012), this text is a record of Mahatma Gandhi comprehended as a multidimensional object that is constantly changing, adding to and redefining itself. The specificity of the discussed issue is also reflected in the structure of the article – we are proposing one out of a multitude of paths that can be chosen in the research for the analysis of subsequent connections, contexts and interdependencies among the archives. We want to emphasize that this is not the only path, nor is it the best one. Each part of this case study is a tangled yet still autonomous part of the overall analysis.

Figure 1. "Nuclear Gandhi" fans illustrations collage

GAMEPLAY AND PROTOCOLS IN *CIVILIZATION VI*

One way to start analyzing the "Nuclear Gandhi" phenomenon is to understand its origins in the video game environment. Created in 2016 by Sid Meier, *Civilization VI* is the latest release in one of the most important series in the strategy games category in the history of this medium. In addition to the undoubted impact on media culture, singular versions have repeatedly been a source of academic reflection on imperialism (Poblocki, 2002), post-colonialism, and the use of video games in education (Ford, 2016). *Civilization VI* is the sixth release, not counting additions and expansions, in the main publishing axis. Every subsequent release of the game is not a continuation of the previous version, but an improvement in the content and gameplay mechanisms available in the gameplay. Despite the passage of almost three decades since the premiere of the first version in 1991, the character of the gameplay has surprisingly remained very similar to previous versions. After Alan Emrich, it can be described as a 4X strategy game, in which the game is played according to the pattern present in the genre. After choosing one of the human civilizations and its leader (this choice is important for the gameplay as it provides various bonuses and changes to the rules of the game), each player starts his first turn on a slightly uncovered map, which he can gradually explore with the help of available reconnaissance units. Meanwhile, the point of the game is to establish new cities that allow a player to use the surrounding natural resources, build infrastructure and transform the terrain according to the gameplay goals. The range of the number of players in single gameplay is set between 2 and 12 (depending on the initial settings). It is very likely that at some point there will be an armed conflict between the civilizations' units and cities. Opponents' cities can be seized and incorporated under the aegis of the player's own civilization, which is an alternative path of development to peaceful expansion.

The above activities are undertaken in order to fulfill conditions for achieving one type of victory, either scientific, cultural, religious, diplomatic, or military. There are many paths to victory, two of which are pacifistic (scientific and diplomatic), two dominated by influence (cultural and religious), and one involving the conquest of other civilizations by force.

As mentioned earlier, before starting the game, each player must decide which civilization and which leader she or he will be representing during the game. This choice significantly affects the strategies available for achieving different types of victory conditions. The perks of selecting certain civilizations and leaders give a player greater opportunities to achieve the conditions for certain types of victory. The variation of individual civilizations and leaders is much more significant for AI players. Aside from these advantages, each leader is equipped with specific protocols of behaviors and preferences used during the game, available to the player in the form of narratively presented "agendas". Each agenda suggests what reaction players can expect from a given AI leader in particular states of the gameworld. Each leader is simultaneously equipped with two agendas: the first is visible and possibly consistent with the historical description of a given character, while the second is randomly selected and is hidden from the user. Discovering the second agenda requires the user to take certain types of actions (espionage operations) during the gameplay.

GANDHI IS NUCLEAR HAPPY

The in-game encyclopedia in *Civilization VI* has not even a tiny note about the terrible fate which Mahatma Gandhi will seal for world civilizations in the final phase of the game. The historical entry is a collection of facts about his life, political activities for peace and his influence on the development of contemporary social philosophy. Neither is there anything surprising to be found in the description of his special *satyagraha* ability. *Satyagraha* is inspired by a particular form of nonviolent resistance or civil resistance coined by Mahatma Ghandi and developed throughout his life. As Gandhi describes it:

> Its root meaning is holding on to truth, hence truth-force. I have also called it love-force or soul-force. In the application of satyagraha, I discovered in the earliest stages that pursuit of truth did not admit of violence being inflicted on one's opponent but that he must be weaned from error by patience and compassion. For what appears to be truth to the one may appear to be error to the other. And patience means self-suffering. So the doctrine came to mean vindication of truth, not by infliction of suffering on the opponent, but on oneself (Gandhi, 2000, p. 91).

Further analysis leads to Gandhi's unique agenda called *Peacekeeper*, which as the leader bonus closely matches Gandhi's pacifist biography profile. Both the goals and resources of the AI-led Gandhi are focused on achieving victory in a peaceful manner. There is one exception to this coherent structure: the hidden agenda. The game code shows that Gandhi as a leader has a 70% chance that his hidden agenda will be *Nuclear Happy* – the script responsible for prioritizing the development, proliferation and use of nuclear weapons. The chances in AI-led Gandhi are much higher than in any other leaders' hidden agenda. Consequently, it is not easy to bring about a state of war with India during the game, but if somebody does, the player can expect brutal retaliation with weapons of mass destruction. The rules of the game design lead to the emergence of user strategies which treat Gandhi as a potential nuclear threat. The user, taking into account the danger from Gandhi, reproduces the idea that is one of the pillars of "Nuclear Gandhi". The phenomenon of reproducing ideas by following established rules in a video game has been described by Ian Bogost as procedural rhetoric. Procedural rhetoric leads to the production of a narrative not through text, image, or sound, but precisely the rules governing the relations between the game objects.

In this way, two completely contradictory narratives about Mahatma Gandhi are constructed during the game. On the one hand, a narrative based on historical information contained in the in-game encyclopedia, user knowledge, facts and ideas described in numerous source materials. It is a narrative about a man who rejected the concepts of violence and retaliation in line with the *satyagraha* strategy. The second narrative creates a completely different picture of Mahatma Gandhi, to some extent consistent with the first, but which under the right conditions radically negates all the former ideals in favor of a nuclear retaliation policy (against the principle of peaceful resistance). The former and the latter, set in harsh contrast, are conducted simultaneously. This leads to a cognitive dissonance, which

Clint Hocking describes as ludonarrative dissonance (Hocking, 2007). The state of strong tension between the two mutually exclusive versions of narrative is an important factor that allows performing the archives responsible for "Nuclear Gandhi". It is worth noting that not every example of ludonarrative dissonance leads to emerging phenomena like "Nuclear Gandhi". In *Civilization VI* Mahatma Gandhi is not the only leader figure that may be seen as controversial. With the release of the *Rise and Fall* expansion, a new playable civilization was introduced – *Cree Tribe*, led by Chief Poundmaker. The developer's decision was criticized by Poundmaker Cree Nation Headman Milton Tootoosis, who initially expressed enthusiasm about the concept of including his tribe in the game, but after seeing the way it was implemented, said:

> It perpetuates this myth that First Nations had similar values that the colonial culture has, and that is one of conquering other peoples and accessing their land. That is totally not in concert with our traditional ways and world vie (Smith and Sturino, 2018).

For some reason, the implementation of *Cree Tribe* is generally perceived as faulty design and cultural appropriation, not an amusing paradox like in the case of "Nuclear Gandhi". To address this problem, it is necessary to refer to the category of credibility. The dissonance in "Nuclear Gandhi" is obvious – it is difficult to not see the irony of the presentation. That is why it is safe from an educational and cultural point of view. The ludonarrative dissonance in the presentation of *Cree Tribe* is far more subtle and difficult to recognize. That is why it is considered a vessel for dangerous ideology and an issue to address in public media. In the case of "Nuclear Gandhi", the contradictions in the narrative were strong enough to separate "Nuclear Gandhi" from Mahatma Gandhi and let the former evolve autonomously.

The evolution of "Nuclear Gandhi" creates a distinctive set of connections between heterogeneous elements. Whether analog or digital, material or immaterial, those elements first and foremost are indexes of something else, referring to previous knowledge, experience, and subjects. By picking any of those elements, what one generally gets is the entity called an archive – a term intensively discussed within the past fifty years.

The word 'archive' is derived from the Greek word *arkheion,* which means in its neuter form, among others, "the residence or office of the chief magistrate", and in the plural "the public records" (Leavitt, 1961). The term 'archive' designates a site as well as its content (Giannachi, 2016, p. 3). The term *arkheion* originates from the root word *arkhē*, which came to be used to mean "beginning", "first place", "the government", or "magistracy". From those meanings Jacques Derrida introduced the nature of the archive, based on combining two principles: "the principle according to nature or history, there where things commence – physical, historical, or ontological principle – but also the principle according to the law, there where men and gods command, there where authority, social order are exercised, in this place from which order is given-nomological principle" (Derrida, 1995, p. 1). For Derrida, "archive" is inherently connected with political power. It is a presencing tool, a system based on selection, categorization, preservation, and mechanicalization.

INDEXATION IN THE *CIVILIZATION* ARCHIVES

The *Civilization* series archives are no exception here. As a historical strategic turn-based video game, equipped with a godlike perspective, it enables players to create alternative history timelines. It reinforces certain historical, social, political, and geographical concepts that have mainly been developed in Western culture. As a simulation it has an impact on human players' perception of the world, while simultaneously enabling players to feel decisive while making their choices in the gameplay. The *Civilization VI* archives refer to aspects of real-world science: climatology, atmosphere, biosphere, demographics, cultural identities, and cultural systems. They are expressed in various types of leader characters, map tiles, application languages, voice-over , infrastructure, icon design, soundtrack, and objects distilled from other archives – condensed and codified into the game development. The narrative of *Civilization VI* is a complex collection of ideas, but it omits such important issues as women's rights, discrimination against minorities, and genocide, among many others. Only selective elements of the external (cultural, historical, political, etc.) archives are included in the game design. Just as Michel Foucault writes, an archive is the system of functioning of its elements. It can be called the first law of what can be said, also governing the appearance of its elements as unique items (Foucault, 2010, p. 129). Further considerations of the *Civilization VI* archives will also deal with another important notion of the French philosopher – the archive 'emerges in fragments, regions and levels' that can be described from within or in its totality (Foucault, 2010, p. 130).

The *Civilization VI* video game mechanisms deploy earlier concepts derived from the strategy board game genre. *Civilization VI* performs visual concepts such as the honeycomb pattern of hexagonal "squares", which have accompanied the visuality of the game since *Civilization V*. This effective way to divide space was already present in Project Rand war games: the Ground War Game and Air War Game described by John Nash and R.M. Thrall in 1952. Project Rand was held by RAND Corporation as an American nonprofit global policy think tank offering research and analysis to the United States Armed Forces, including through new methods for strategic analysis and war gaming. Moreover, Sid Meier's experience in the game industry began with combat flight simulators and military strategy games. Designer experience expressed in the product characterization is part of the archives repository along with the whole game design. Inside the game archives we can also find effective psychological design aspects expressed in the game code. Rewards and punishments, win probability, and difficulty levels must be well-designed to make gameplay exciting and pleasurable for future users. Those mechanisms are derived from research focused on increasing sales and game popularity.

As specified earlier, to win the game players can lead their civilizations along paths other than wars and military actions. Still, to win the game someone has to have the best score in one of the possible achievements, which also creates a specific pathway in the experience of the players.

The archives mentioned above are connected with others, produced through different means and indexing to other elements. Forums, blogs, and online platforms made by game

users also make up part of the collections and accumulations of the archives. These archives are based on free voluntary work, where players' agency plays a major role in creating repositories. This collaborative space of records creation is made possible by network connection. While only a particular version of events was to be made public, the figure and agency of the archivist is to be emphasized. Traditionally archives were used to serve particular bureaucratic purposes and archivists were seen as safeguards, not owners, of this power. Archive records were derived from "stable, mono–hierarchical institutions", although a crucial change came with the mid-1980s and emerging new information technology. Digital records started to be created within "unstable institutions'', which indicates the role of the archivist as an active shaper of functions and transactions performed on the repository (Giannachi, 2016, p. 11). To paraphrase Hal Foster's notion of archival turn (Foster, 2004, p. 4), for users of the *Civilization* series the ideal source and space of creation is the mega-archive of the Internet. The archives of *Civilization VI* are not only constituted on platforms, stations, blogs, and forums: fans are constructing game improvements through creating additional design and script content. These improvements are called mods – developed through modding, a term derived from the practice of modifying game elements. Thanks to Brian Reynolds and Soren Johnson, co-designers with a background in modding and hacking code in popular games, since *Civilization II* capabilities for user interruptions have been constantly extended. Focusing on the mods scene of *Civilization*, designers split the game's engine into two code bases: the major graphic engine and non-gameplay code written in compiled C++ together with game play and rules written in interpreted language, which enabled seeing immediate changes while game modding (Kaltman, 2014, pp. 108–109). Those changes led to an easier entry threshold for active participation of the modder community. The results of their work are often used by the Fraxis production team and there is no doubt that users constitute a great part of the game development engine. Mods such as *Ahimsa – Gandhi Reworked*, *Gandhi Mod* or *Warmonger Gandhi* change the behaviour of both the human leader and Gandhi AI, removing Gandhi AI's nuke trait or setting him up as more aggressive than it is coded in the original version. The modding user of the *Civilization* archives is both its creator and propagator.

Nevertheless, the digital and virtual environment reinforces archives as a generative tool for global production months before users' operations on a released game. Narration about an upcoming product is present prior to early access or an official release coming out. Once the game production is announced by the company, the archives starts circulating, filled with objects of knowledge. It is not the gameplay that is the starting point in running the performativity of the archives. Marketing strategies that activate speculation about upcoming releases work on many layers of information collections. Personal and private, public and global levels are moved by this "first place". From one point of view, advertising affects the emotional relations of players and broadens discussion on online forums. On the other hand, sales predictions influence further marketing decisions, promotions, production of game-inspired gadgets, etc. Descriptions of "Nuclear Gandhi" in game reviews also influences those layers of information collections, such as "Let's take a ride through the world where [...] Mahatma Gandhi threatens to use nuclear weapons!" (Bhaskar, 2016). Reviews

are often used in marketing strategies to reinforce positive perceptions of the game, while increasing the range of the product and gaining new fans. The intentions standing behind promotion of the game contribute to the development of the archives.

PROLIFERATION OF THE *CIVILIZATION* ARCHIVES

For Jenkinson and Schellenberg archives are not collected. "They came together, and reached their final arrangement, by a natural process: are a growth; almost, you might say, as much an organism as a tree or an animal" (Stapleton, 1983, p. 77). In terms of the *Civilization VI* archives, the processes of both accumulation and collection can be observed. The archive is no longer undoubtedly a physical site, but a dynamic virtual concept, a network of nodes capable of reprogramming itself depending on its values and users. Game code is gaining not only new fragments of algorithms, classes, and functions, but already existing elements are re-programmed, adjusted to new necessities. The game is also expanding due to accumulation. Building upon Jenkinson's comparison of archive expansion to tree growth, parts of the *Civilization VI* archives, like users forums and blogs, narration around the game development, statistics, and free and fan versions of the game are adding new branches into the archives repositories. As observed earlier, even the game narration is based on branches – like a civilization technology tree that is expanding in a linear way, dividing itself in the following steps for a few more branches. A technology tree is drawn once again with every new gameplay, by agency of the algorithms, enabling slightly different, unknown narrations to appear. The starting point, after the first initiation of the archive-producing machine, can be hard to find in a plethora of connections. Even this "first place", considered as the will of creators to produce a game, is not a first archive, because it is built on a previous archive of experiences of the producers, cultural and technological development, etc. However, it is hard to claim that like in Deleuze and Guattari's rhizome, the pivot is lost (Deleuze and Guattari, 1987, p. 7). The individual archive is constructed upon its strata, revealing layers of information, allowing the privileged reader to discover occurring connotations (Giannachi, 2016, p. xviii).

LIMITED ACCESS OF THE ARCHIVES

While the world experienced a crucial shift from the industrial and bureaucratic era to digital economies based on computers and database technology, there was also a change in setting up the rules for archives, along with their construction and accessibility (Giannachi, 2016, p. 9). During this period, the influential archival theorists Hilary Jenkinson and Theodore Schellenberg introduced important notions on the changing position of the archive in global circulation. Like Jean-François Lyotard, they underlined the role of the knowledge-commodity, which for Lyotard became "the principle force of production" (Giannachi, 2016, p. 9).

Digital technologies created fundamentals for fast growing databases of information, fostering governmental power, global production, and education, and producing new spaces for sharing knowledge. So whatever is included in *Civilization VI* accumulations and collections, it gains wider range due to digital means of production. Although archives have become more open than previously, they have not become entirely democratic tools. Their access is limited, only open for those who know how to gather information and how to read them. In the *Civilization VI* archives repository there is a wide range of knowledge, tools, and commodities within the game to which players have limited access due to the overwhelming information and data that come along with *Civilization*. As well, everything that is outside the main thread of the narration – additional screenplays, the world map builder – is less visible than the main path designed by the production team.

There are multitudes of indexed objects in the *Civilization* archives that seem to be loosely related to the game itself. Gameplay, articles, video reviews, and research study are constituted upon and tightly related to indexed physical hardware and internet infrastructure. *Civilization I* was programmed as a three-megabyte IBM PC computer game, released first for Amiga 500, DOS operating systems, Super Nintendo Entertainment System, and Sega Genesis game consoles. It was programmed with the use of 640K memory computer capabilities and 16-color EGA graphics. The possibilities of the hardware also determined the design of the Gandhi leader image – Ghandi in a certain pose was created in *Civilization I*, and this image is used through the following versions of the game.

The hardware mentioned above is just a small part of a huge collection of cables, wires, circuits, mouses, keyboards, hard disks, graphic cards, floppy disks, home computers, laptops, earphones and many more that were and are still used in game production. Hardware parts, products of mining industries, are linked to the whole gaming industry (sales, actual game play, personal client equipment, etc.), archived in physical and online shops, company storehouses, and production companies. Technological progress is enabling technical media culture to exist and flourish while producing electronic waste on an unimaginable scale. Undersea fiber-optic cables and telecommunication companies are providing a distributed information superhighway, through which multiplayer gameplay and game updates are made possible. In *Civilization VI* data about network conditions are visible in Frames Per Second (FPS) rate and Ping readouts in gameplay. We assume that hardware and internet infrastructure is indexed in many different archives, extending those mentioned above.

PERFORMABILITY OF ARCHIVES

The *Civilization* game series is designed for human players, but they are not the only ones who are running the archives. The AI built into the game is a crucial part of the system, enabling many mechanisms to happen, especially single player mode with AI competitors and their design as part of the overall game experience (Figure 2 presents one of the functions used in writing Civilization VI AI). Game AI is also used by many players as a source of

knowledge on how to achieve the best score through observing AI against AI gameplay. So the performativity of the archives can be run almost without the participation of human players. This minimum plan keeps things going just after choosing the appropriate option in the game panel. In the model plan, when the human player is fully active in front of the screen, it is interesting to notice AI leaders operating under different rules than leaders played by human players. As Soren Johnson said in GoogleTechTalks in 2010 about *Civilization VI* AI, human players have a wider palette of options during the game play. Moreover, AI cheating is not linear, although it is supposed to be felt as fair gameplay. In *Civilization I* AI gets free wonders, and in the game there is a line of code that will cause AI to declare war against a human player if two conditions are fulfilled: the human player is in the lead and it is year 1900. "Nuclear Gandhi" AI-leader behaviour is of course to be mentioned here too, although it is hard to state whether it was intended script or a bug.

```
int CvPlayerAI::AI_techValue(TechTypes eTech)
{
	int iValue = 1;
	iValue += getTeam().getResearchProgress(eTech); // which technology to research first
	if(getTechInfo(eTech).isIrrigation()) // does this technology provide Irrigation?
	{
		iValue += 400; // adding value to overal sum
	}
	if(GC.getTechInfo(eTech).isOpenBordersTrading()) // does it enables Open Borders?
	{
		if(getTeam().getHasMetCount()>0) // has AI met any other player?
		{
			iValue += 400; // adding value to overal sum
			if(getTeam().getNumCoastalCities()>0) // are Coastal Cities present (enables trading)?
			{
				iValue += 400; // adding value to overal sum
			}
		}
	}
	return(iValue + getGame().getRandNum(2000)); // random noise
}
```

Figure 2. Short script of Soft-Coded AI from *Civilization IV* (from Soren Johnson GoogleTalk)

When considering the *Civilization* archives it is also worth mentioning other code collections and accumulations. Unrelated to the Fraxis company, AI and Machine Learning (ML) projects use *Civilization* as a testbed for new developments in computer science. A project led by Regina Barzilay at MIT uses machine learning word association to teach a computer how to play civilization through using the game manual (Geere, 2011). The Arago Company created the HIRO AI product, which can beat some human players in the Freeciv game, a free version based on *Civilization* (Etherington, 2016).

ARCHIVERSE AS AN ASSEMBLAGE

Given the above analysis the important conclusion emerges: "Nuclear Gandhi" is not an object. Nuclear Gandhi is a process resulting from the performing of numerous cultural, social, technological and political archives. It should be perceived as a process because its meaning and contexts depend on ever-changing archives belonging to a common assemblage, the composition of which may change over time. In other words, in order for a process called "Nuclear Gandhi" to traverse from potential to actual mode, it is necessary to perform different objects of individual archives. Through mutual interactions between them, the process of "Nuclear Gandhi" is able to occur. The assemblage of the archives that allow Nuclear Gandhi to happen is an archiverse.

An archiverse is secondary to the process that is updated within its framework. It cannot be described until the researcher's entry point into the assemblage is determined. From that point, the archiverse potentially expands endlessly, both in spatial and temporal terms. This multidimensional expansion means that the archiverse goes beyond the standard category of the object and requires a different approach. Timothy Morton, writing about ecology from the perspective of new materialism, uses the concept of a hyperobject to describe objects that are "so massively distributed in time and space as to transcend spatiotemporal specificity" (Morton, 2010). Hyperobjects are objects which have a vitality to them, but it is impossible to touch them as a complete material object. From a slightly different perspective Ian Bogost uses the example of ethics to describe his understanding of the term. In *Alien Phenomenology* he writes that "ethics itself is revealed to be a hyperobject: a massive, tangled chain of objects lampooning one another through weird relation, mistaking their own essences for that of the alien object they encounter, exploding the very idea of ethics to infinity" (Bogost, 2012, pp. 78–79). Effects of hyperobjects may be experienced even if they cannot necessarily be touched.

Individual archives belonging to different archiverses may differ significantly from each other, as does the nature of the interdependence between them. However, it is possible to designate several common properties for each archiverse. These properties are decentralization, speculativeness, dynamics and continuity. Each of them are described briefly further in the text.

A. DECENTRALIZATION

An archive does not have a fixed, hierarchical structure. For the purposes of analysis, it is possible to take a specific point or object as an entry point, but it can be in a different place each time. Any apparent hierarchy of linking archives is the result of temporary reorganization movements in the course of research. In this analysis, it is justified to adopt the "Nuclear Gandhi" process as the entry point into the assemblage of archives in the archiverse. However, every time an analysis is conducted, the entry point and configuration of influences in the assemblage could be significantly different (Figure 3 represents one of the possible configurations of analysing the Nuclear Gandhi archiverse). Nevertheless, there is no doubt that this arrangement would be the result of performing the same assembly of archives as in the first case.

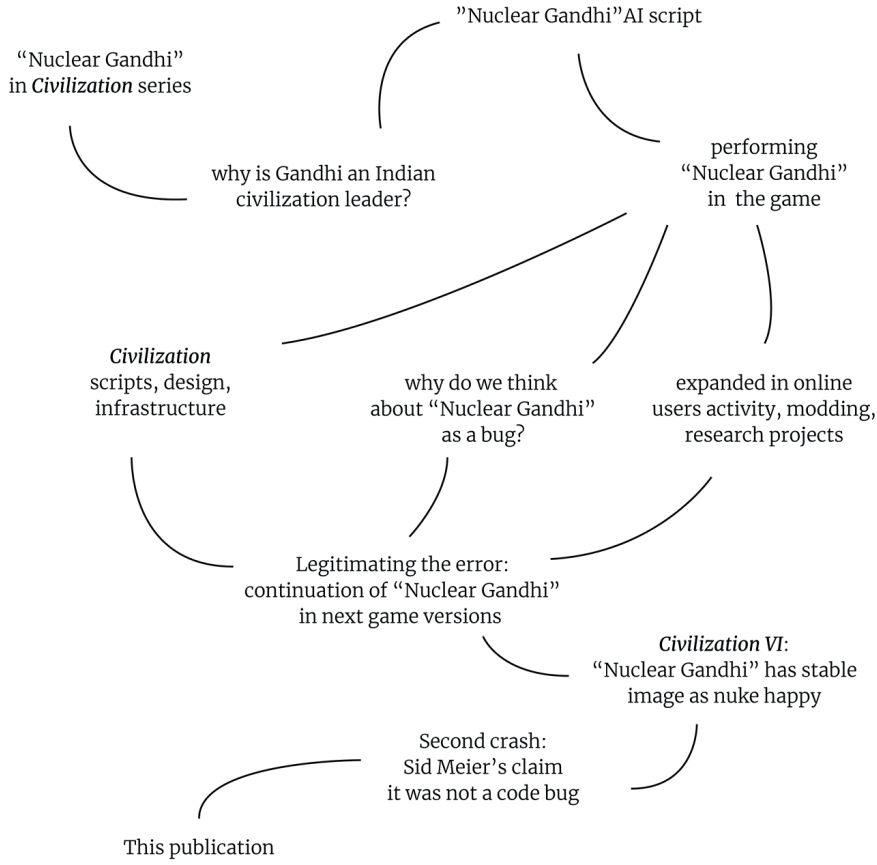

Figure 3. One of the possible paths of analysing the Archiverse

B. SPECULATIVENESS

Initially, the archive is potential. The phenomena and processes occurring within the archives are updated during the assembly of the archives. Depending on which archives are included and which are omitted, the current form of the analyzed process may manifest itself in different ways. The archiverse with all its potentialities remains an autonomous entity regardless of how it is perceived, but its current forms directly depend on the movements that perform it. The timeliness of the archive is always a temporary condition.

C. DYNAMICS

One of the challenges of conducting research on contemporary digital phenomena is the enormous scale of their dynamics. Phenomena become outdated in less time than is needed to

investigate them. Anyone who tries to observe and describe such phenomena is doomed to use past narratives of those phenomena. For this reason, a very important property of the archives is their open dynamics. An assemblage of archives is always open to its potentialities, both in the face of archives joining and disconnecting from it, and in the face of transformations of the objects that make up these archives. The game code of *Civilization VI* is constantly being performed, in the form of official updates and additions provided by the publisher, creators and users of fan modifications (who constantly make changes to its structure), as well as in the form of individual gameplay acts in which both hardware and software modify data. When researching the movements of the performing archives, it is extremely important to take into account its dynamic, pulsating and time-changing character.

D. CONTINUITY

This last characteristic leads to the last point, dealing with continuity. The archives are in a constant jitter between the potential and the present. This movement means that the archives should be understood as an ever-updating process that never stops and never ends. Regardless of how Nuclear Gandhi is up to date, the archives that led to its creation will continue to be performed in future *Civilization* updates, in the form of texts, gameplay strategies, data stored on servers, and the memories and preferences of players, which have the potential to be causative in further transforming the archives.

CONCLUSION

The main principle of conducting research on an archiverse is to take into account both conditions that determine the structure of the archives: their actual state and their potential state. The continuous "research in motion" of a hyperobject is constantly reconfiguring and expanding with new information, connections, and archives. The autobiography of Sid Meier presents another branch of connotations in the "Nuclear Gandhi" archiverse. Published in September 2020, the autobiography touches upon memories related to the game design of *Civilization*. As Meier claims, the "Nuclear Gandhi" code bug was an intentional act – everything that happens during the gameplay was as intended by the design. Meier does not, however, reveal the motivation behind the "Nuclear Gandhi" design, as he writes: "it's one of those mysteries that it's almost fun to keep mysterious".

Sid Meier's statement, however, does not contradict the archives previously attached to the archiverse. This new information merely shifts one of the many archives containing the narratives about "Nuclear Gandhi" from its potential to its actual state. Countless elements of the archives emerge from this additional archive layer, and this leads to an even more dynamic performativity of the archiverse. Meier's statement again emphasizes that archives cannot be read in isolation and that the means of transmission of information have crucial influence on how archives, within the archiverse, are constituted.

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