

Salmon grief in Sámi digital games

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ABSTRACT

The aim of this article is to explore the role of Indigenous digital game creation at the time dramatic environmental and ecological changes. Our study focuses on the river–human relations of Sámi people in the Ohcejohka (Utsjoki) area, Northern Fennoscandia, which has recently faced a radical decline in salmon stock. We analyze the creation of two little digital games made in Finnish Sápmi in 2023 – *The Story of the Rainbow Salmon* (Laiti 2023a) and *The Rainbow Salmon Talks With Fish* (Laiti 2023b) – by employing a decolonial and Indigenous autoethnographic approach. The results showed that the two games discussed did not only become makeshift playgrounds for expressing *luossamoraš* (salmon grief), but also involved creative grief towards survivance in a larger environmental, cultural, and political context and the sustainability situation faced by the Sámi on the River Deatnu. The game creation goes beyond expression, and is also about reciprocal relations of beings, both humans and more-than-humans.

Keywords

Sámi, Indigenous games, grief, sustainability, salmon

INTRODUCTION

Making and playing games have diverse purposes and relate to many experiences. In settings, in which people are experiencing a dramatic environmental change, digital games relate strongly to that surrounding environment. In this article, we ask how digital game creation is accommodated in these situations and what kind of role it plays for Indigenous people. Our study focuses on the Sámi people in the Ohcejohka (Utsjoki) area, Northern Fennoscandia, which has faced a decline in Atlantic salmon stock. The Sámi lands have been colonized for centuries, and recent megaprojects, such as mining, logging, and the creation of wind turbine parks, take place in their lands causing environmental destruction within vulnerable ecosystems. In this article, we aim at understanding Sámi game design processes in relation to the emotion of grief and the changing environmental landscape. The decline in salmon has led to different kinds of fishing bans for tourists, local non-Sámi fishers, and the Sámi. The

Proceedings of DiGRA 2024

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Sami living in the River Deatnu area have protested that the state regulations did not recognize the importance of traditional fishing, which is closely linked to losses of traditional ecological knowledge and language related to the river and to fishing (Holmberg 2018; Hiedanpää et al. 2020), all causing grief.

This study focuses on the creation of two little games, *The Story of the Rainbow Salmon* (Laiti 2023a) and *The Rainbow Salmon Talks With Fish* (Laiti 2023b), created in a three-day online Skins workshop in spring 2023. The event aimed at enhancing local Sámi sovereign game creation. Our methodological approach draws from decolonial Indigenous research and the creation of the two games is analyzed by applying the Indigenous game design model (Laiti 2021). Sovereign games are Indigenous self-determined games where Indigenous people take an active role during the game development process and have the power over decision making processes (LaPensée et al. 2022). Sovereign games deal with issues relevant to Indigenous peoples themselves (cf. Banks and Ruby 2011). The Sámi inhabit lands in the Global North, and this brings them greater access to digital technologies, which are now woven into the fabric of many social interactions.

Our case shows how the digital storytelling deals with larger salmon–human–river relations, creating makeshift playgrounds and emotional spaces for expressing loss. The game design process itself is crucial for the Sámi collective to deal with local *luossamoraš* (salmon grief), which is also an expression of a broader grief about lack of sustainability experienced. At the time of environmental changes and green imperialism, finding a grieving language for *luossamoraš* can be understood as an ecocritical approach that highlights the potency of the Sámi local community through game design. This does not only point to grief of humans, but also to the perspective of salmon, who is the main character of the games. The two games thus places human–river relations and more-than-human world at the center. On the other hand, when the focus is shifted from highlighting the end products to the storytelling process behind game design choices, we argue that survivance in Indigenous game design is, among its other meanings, an act of “constructive” grief. Thus, at the emotional level, grief in human–river relations can be explored through the journey towards survivance.

METHODS AND THE CONTEXT

This study draws from Indigenous research methodologies (Smith 1999, Virtanen et al. 2021), highlighting careful attention to local ways of producing knowledge and research ethics, namely collective engagement, and consent. These are central to this study, and the main data consists of the experiences from the two games created by the first author. Her knowledge and experience are rooted in the riverbanks of Deatnu in Ohcejohka (Utsjoki), in the Northernmost municipality of Finland. Along with creating the games, she was also one of the main organizers of the workshop series in 2023. This research draws from the development of the two games as a dialogue with the first author and the collective during the workshop and during game making. It also relates to gaming overall and to Ohcejohka, the first author’s home area. The second author contributes to the analysis by following the Ohcejohka salmon situation and earlier contributions to Indigenous sustainability theorizing. As a research journey, the first author’s starting point was to consider games in their creative setting autoethnographically (Lapadat 2017). Indigenous autoethnography, an Indigenous knowledge-centered decolonial method (Bainbridge 2007, Bishop 2020, Francis and Munson 2017, Houston 2007, Iosefo 2018, McIvor 2010, RedCorn 2017, Whitinui 2014), takes into account collectively produced knowledge.

Our study looks at the creation of two little digital games, *The Story of the Rainbow Salmon*, and *The Rainbow Salmon Talks with the Fish*, which were made during the Skins workshops “Interactive Storytelling with Twine” and “Game Design with Bitsy” on January 3–5, 2023. The Skins workshops, organized by the Aboriginal Territories in Cyberspace (AbTeC) and the Initiative for Indigenous Futures (IIF), are designed to empower Indigenous youth in game design. The workshop series in Ohcejohka with the Skins workshops were specifically organized in collaboration with the municipality of Ohcejohka (Utsjoki) to enhance local Sámi sovereign game creation and global Indigenous collaboration. The first two days were reserved for Twine and the final day for Bitsy. As the Covid-19 pandemic was ongoing, the workshops took place via Discord, a free online chat and VoIP-application used especially in online gaming communities. As the online workshops were led by Skins workshops in Canada, and the participants were mostly on Eastern European time, the working hours were fitted to both time zones. January is one of the polar night months in the Arctic, in the winter season of the Sámi annual cycle, and the first week of the month was also in the winter school holidays. The workshops were scheduled 15.00-18.00 (EET), as this was during office hours in both Montreal (Canada) and Ohcejohka (Finland). With this timing it was also possible to advertise the workshops to children on vacation as well as to working adults.

The workshops introduced two free tools for interactive storytelling: Twine and Bitsy. Twine is a tool for making online open-source interactive stories. It allows users to create nonlinear stories, including text-based adventures, visual novels, and role-playing games. It is known for its user-friendly interface and versatility, making it a popular choice for both beginners and experienced game developers. Bitsy is “a little engine for little games, worlds, and stories,” a free, open-source game engine designed for creating short, pixel-art games. It is known for its simple and intuitive interface, which makes it an easy-to-learn tool for beginners and non-programmers. Bitsy games are typically small and focused on narrative or exploration rather than complex mechanics or action gameplay. In what follows, we briefly introduce the two games.

The Story of the Rainbow Salmon is a story-driven game made with Twine. The story is short but includes some options that the player can choose. It offers two different endings. The online description also refers to the situation in the Ohcejohka region (Laiti 2023a):

The Story of the Rainbow Salmon is a Twine game that explores the status of the Atlantic Salmon stocks in the River Teno (Tana). The numbers of fish migrating upstream to the river gets smaller every year. Because of the weak status of the salmon stocks, the salmon fishing is banned by the states of Finland and Norway. Why is the birthrate dropping? The Story of the Rainbow Salmon is a happy game with a serious topic.

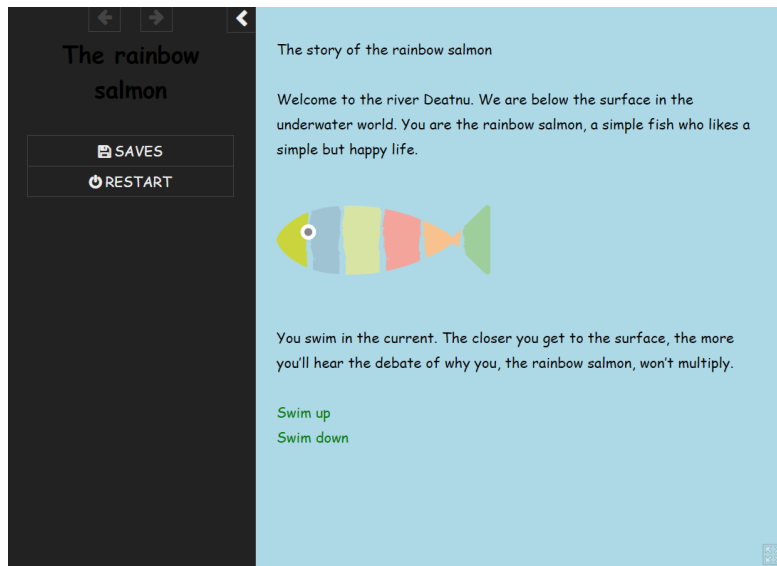


Figure 2: The start screen of *The Story of the Rainbow Salmon*.

The game start screen introduces the Rainbow Salmon, a colorful character described as “a simple fish who likes a simple but happy life.” The story starts in the Deatnu River, where the Rainbow Salmon is swimming in the current and hearing discussions about salmon reproduction. The player can choose to swim up and closer to the voices or swim down.

The other digital game, *The Rainbow Salmon Talks With the Fish*, is a story-driven adventure game made with Bitsy. The opening screen includes the title of the game (Fig 2.) followed by a scene with fish differing a bit from the animated Rainbow Salmon.



Figure 3: The start screen of *The Rainbow Salmon Talks With the Fish*.

A happy tune plays in the background. The online description the game (Laiti 2023b) also refers to the fishing bans and the consequences at the local level:

Dive in the sea of love! The Rainbow Salmon Talks With Fish is a Bitsy game that explores the status of the Atlantic Salmon stocks in the River Teno (Tana). The number of fish migrating upstream to the river gets smaller every year. Because of the weak status of the salmon stocks, the salmon fishing is banned by the states of Finland and Norway. Why is the birthrate dropping? The Rainbow Salmon is a happy game with a serious topic.

In this game, the fish stay in their place, while the figure called Rainbow Salmon can swim in the ocean guided by the player. The game area consists of two screens, one on top of the other, so that the player can dive deeper in the ocean. If the Rainbow Salmon meets a fish, the fish “talks,” meaning that the happy music pauses, and a rainbow-colored line is presented on the screen. After the player meets and talks with the fish, the plot is revealed. All the fish communicate through fish puns:

- The thing salmon don’t like about tunas is everything’s a big sea-cret!
- You’re blushing like a salmon that’s just seen the bottom of the ocean!
- You look e-fish-ent!
- What did you think of the Eurovision fin-ale?
- I’ve met the gill of my dreams!
- Fish children should piscine and not heard!
- I’m so soFIShticated!
- We are so happy here! I’m not squidding!

Both games are freely available online (Laiti 2023a and 2023b) and they can be played in a browser. They are also published without polishing them after the workshops. The games were made on the side of responsibilities of organizing the workshops and the first author wanted that to show.

The research materials are explored through the Indigenous Game Design Model (Laiti 2021). Laiti’s (2021) Indigenous Game Design Model describes survivance as both the beginning and the end of a creative game design process. Survivance reflects the resilient Sámi life politics of getting along in the spirit of the North Sámi concept of birget [to get along] (Laiti 2021, 67). The model uses Sámi lavvu (a traditional tipi-like dwelling) smoke hole as seen from the inside to describe Indigenous game development (Fig. 3.), which has also earlier been developed as a Sámi research methodology (Porsanger and Seurujärvi-Kari 2021).

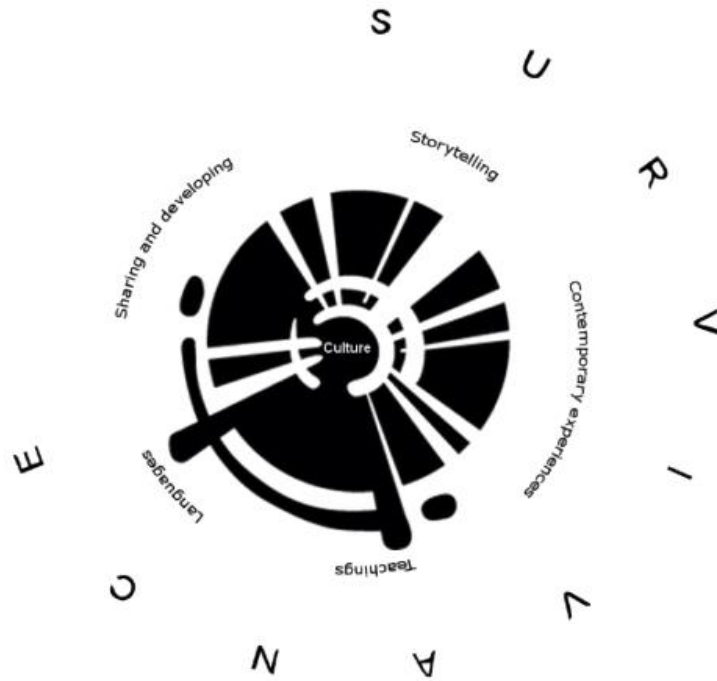


Figure 1: Indigenous game design model (Laiti 2021).

The lavvu poles that support the walls are loosely positioned and depict the five aspects of game design: Storytelling, Contemporary experiences, Teachings, Language, and Sharing and developing. In the center of the smoke hole, where you can also see a bit of sky, can be seen glimpses of communal phenomena the game developer wishes to show.

In this article, we use the model by centering a communal phenomenon, in this case salmon grief, and head towards survivance by following the storytelling pole. In-game storytelling is seen as a journey that engages with grief and heads towards survivance. This can be seen as an adaptation of storywork, a decolonial method giving space for Indigenous storytelling traditions and ways of knowing (Archibald 2008). Thus, storytelling in this study is more than entertainment or an in-game narrative: it works as a method to engage with the story in its origins, because game creation is different than play, and creating a story is more powerful than following a story through play. If a story is born out of grief, then storywork can be the interactive relation between grief and game creation.

THE BUILDING BLOCKS OF MAKESHIFT PLAYGROUNDS

The environmental change of River Deatnu

Sápmi is a playground for the Sámi, but it has also become a playground for many outsiders, especially for those with extractivist objectives. In Sámi communities, the connection between work and play is also educational, as Sámi children grow to be community members not only through observation and experience (see e.g. Balto 2005), but also through imitation and play. Colonialism and climate change, however, have limited the ways of playing and learning (see e.g. Frandy 2021) by reducing the forms of play and affecting the rules.

The Great Deatnu River is one of the living hearts of Sámi culture, especially for the North Sámi speakers in Ohcejohka region. The River Deatnu is over 350 kilometers long, flowing for the most part along the Finnish-Norwegian border in the Sámi region, Sápmi, or Northern Fennoscandia. The area also suffers many other infrastructure building projects, such as mining and deforestation, and faces climate change alterations. Political regulations concerning Atlantic salmon fishing in the Deatnu River have been in place since 1873. However, in spring 2017, the Finnish and Norwegian authorities made a decision known as “The New Deatnu Agreement.” This agreement offered “a framework for regulating sustainable fishing” (Parliament of Finland 2022), leading to a ban on fishing in 2020. Since that time it has not been legal to fish Atlantic salmon in the River Deatnu (Kuokkanen 2020). The situation of Atlantic salmon in its original areas calls for action. The number of salmon in the River Deatnu has radically dropped and new invasive species have migrated to the river. As the reasons remain unclear, the only action for salmon fishing so far has been to close the River Deatnu and its tributaries. The building blocks of this local playground are situated in the geopolitical and economic situation of the Sámi lands, which also has an impact on the emotions fueling the Indigenous game design.

The situation in the Deatnu valley is complex, as there are two nation states (Finland and Norway) with their differing state legislations and international Indigenous rights. For the Sámi community in the Ohcejohka area, the state regulations have not taken into consideration Indigenous rights and the Sámi’s historical presence in the area. Ultimately, it comes to different systems of knowing when protecting Atlantic salmon: non-Sámi experts are interested in increasing the salmon population by cutting off the human from human–river relations and thus separating nature from culture (Joks and Law 2017; Holmberg 2018). The Sámi community stated in 2016 that the new Deatnu agreement violates the constitutional rights of the Sámi. Furthermore, as the new agreement aimed to cut down fishing 30%, the calculated impact in decreasing tourist fishery would be 40% and, when combining traditional Sámi fishing methods and fishing, the Sámi fishing rights would be decreased by 80% (Aikio et al. 2016, Kuokkanen 2020). Kuokkanen (2020) argues that the continuance of the Deatnu agreements from 1873 to 2017 is a form of settler colonialism that functions by building “a metaphorical wall” between the Sámi and their living, cultural environment, the River Deatnu. The wall becomes a reality in time: when the River Sámi culture can no longer exist, the Sámi diaspora accelerates, and the River Sámi are replaced with “non-local anglers transforming the land into their image” (Kuokkanen 2020). This begs the question of how are the consequences of not being able to fish, its further losses and its response, grief, dealt and coped with, or are they? We already know that Arctic Indigenous people such as the Sámi have higher suicide rates compared to non-Indigenous people, and individualistic mental health approaches fail to recognize the relation of this to community challenges (Stoor, Eriksen and Silviken 2021).

Loss is often described as something indescribable, beyond words. Its response, grief, can to some extent involve building a new language that integrates the loss into the changed environment (Neimeyer 2010, Neimeyer and Thompson 2014). Sámi communities that have long traditions of salmon–human–river relations along the riverbanks of the Deatnu have recently started to talk about *luossamoraš*, a North Sámi term that can be literally understood as salmon grief. It was first noticed when Harry Johansen introduced the *Luossamoraš* filming project (2024). The short description of the movie described the documentary as “*En ny dokumentarfilm om det og ikke lengere få lov til å fiske [A new documentary film about it (salmon grief)*

and no longer being allowed to fish] (FeFo 2023).” The Home River movie, a film by Kati Eriksen and Scott Thornton, described *luossamoraš* as one of the many emotions in a legal fight over Sámi rights, and used “*luossamoraš*” as one of the hashtags in their marketing campaign (Home River 2023). *Luossamoraš* responds to the loss of diverse issues linked to fishing, such as the Sámi language and traditional ecological knowledge.

Grief in Indigenous Game Design

Video games are a platform to explore complex human emotions, and grief is no exception. Several games like *Gris* (Nomada Studio 2018) and *That Dragon, Cancer* (Numinous Games 2016) have tackled this delicate subject with sensitivity and nuance, offering players a unique way to connect with the experience of loss. Game design can be harnessed for grief processing in that it offers grievers a dynamic vocabulary to work with (Harrer and Schoenau-Fog 2015). This means that building a game can also be about building a grief narrative. By exploring these emotional narratives through interactive experiences, games can offer a valuable tool for understanding and processing grief, both for individuals who have experienced loss and for those who want to better understand the grieving process.

The emotion of grief has also kickstarted Indigenous game projects. Rhett Loban (2023) reflects upon cultural grief in *Embedding Culture into Video Games and Game Design: The Palm, the Dogai and the Tombstone*. The Dogai’s game *Torres Strait Virtual Reality* (TSVR) is inspired by, but not limited to, the grieving cultural traditions and knowledge of Torres Strait. The player’s journey is framed by the Tombstone Opening grieving ceremony, which signifies the end of the mourning period after someone’s passing (Loban 2023). While Loban centers TSVR around community grieving, the creation process of *Skábma – Snowfall*, a multi-platform video game inspired by Sámi stories, has been fueled by a personal journey accompanied by identity grief. Marjaana Auranen, a Sámi co-founder and writer of the Red Stage Entertainment gaming company, states in a Gamesindustry.biz interview of the “wounds” and “tears” related to the creation of *Skábma – Snowfall*:

When you have these wounds in your identity, or it's not whole so to speak, and there are these tears, as an artist it means that you want to handle those through your art. I had this urge to write about Sámi, write about my culture.” (Dealessandri 2022)

In the case of *Skábma*, grief is rooted to colonialism as the feelings of loss derive from Sámi assimilation history and its impact on Sáminess. Grief is something that can be processed by the arts (see e.g. Neimeyer 2010, Neimeyer and Thompson 2014), hinting that game development may function as a coping mechanism, something that addresses grief. In Indigenous game design, Meagan Byrne (2021) suggests that video games can function as a unique and important digital sacred space for Indigenous healing, as these sacred spaces can be completely controlled by their creators. Sacred spaces are defined by their makers, and they hold a deeper meaning in that they cannot necessarily be explained by science alone. They carry rules like who can be there and what is allowed – in other words they create spaces marked Read-Only, that in computer terminology refers to files that can be used but not changed (Byrne 2021, see also Crogan et al. 2008). This allows Indigenous people to create games that tell their stories and protect their culture from “vandalism and theft,” outside exploitation, and to prevent voyeurism, “pain tourism,” that is fed by Indigenous

trauma and grief (Byrne 2021). This led to the concept of survivance, first coined by Gerald Vizenor (1999), describing the active, attitudinal survival of Indigenous people.

Even though survivance is considered a positive concept, it carries the load of the word survival, the main goal for all Indigenous people, especially when dealing with colonization and assimilation policies (see e.g. Smith 1999). When expanding to Indigenous game design, it can function as the origins of all creative work (LaPensée 2018), a key aspect of the gaming experience, and the underlying structural principle that governs the game mechanics shaped by Indigenous epistemologies (LaPensée 2014, Madsen 2017). Having said that, survivance can be seen to engage with grief. Deborah Madsen, for example, has examined the concept of survivance in *Invaders* (LaPensée 2015), Elizabeth LaPensée's interpretation of *Space Invaders* (Taito 1978). According to Madsen (2017), *Invaders* the game puts the player in a situation of constant defeat, forcing the player to experience a feeling of loss. Fighting overwhelming enemies makes the player question why they fight, but keeps the player engaged in resisting. The game is about surviving, not winning, and fighting back against impossible odds. In-game survival can thus be seen as dealing with grief, learning through losses, and making surviving knowledge cultural capital. As an active and attitudinal moving forward, it is engaging with grief, not escaping, or waiting for the grief to disappear as if by magic. This is in contrast with, for example, Elisabeth Kübler-Ross's theory "five stages of grief" (1970), where grief is described as "stages" you can successfully "pass" and be finally "purified" from grief.

STORYING WITH AND THROUGH SALMON

Processing grief was divided into creation and storytelling. The creation stage focused on how loss is expressed through the design of the main character and the game world. The main character backstory, motivations, and appearance can all hint at an experienced loss. The stage of storytelling explored loss through players' choices – how they interact with the world, or how they choose to move forward – can engage players with themes of grief. These stages are addressed in the order in which they were created during the workshops: the creation of the main character and building the storyline. Loss is expressed especially through worldbuilding and atmosphere, as well as player agency and choice.

The birth of the Rainbow Salmon

The Twine workshop started with planning of the main characters: who they are, what they look like, how they behave and where they live. The stories in both games introduce the main character, Rainbow Salmon, a name which has been inspired by the same fish family species as rainbow trout. Rainbow trout were first named *salmo iridea* [salmo=salmon, iridea=rainbow] by William P. Gibbons around the 1850s; this was later corrected to *irideus* (see e.g. Jordan 1965). The rainbow as a symbol has another globally known link with LGBTI+-rights as the pride rainbow. Rainbow flags are used in pride parades when celebrating and promoting diversity (Wolowic et al. 2017). The appearance of the fish is colorful and is in essence a color spectrum, suggesting diversity and inclusion. For the sake of time and resources, the graphics of the game were based on the free picture archives of the internet.

Rainbow Salmon is represented as a simple fish who loves the simple life, like watching the Eurovision Song Contest. This simple fish, however, feels the pressure of the Deatnu Agreement legislation, on one hand, and reproduction discussions by

outsiders on the other. At that time, Finnish politicians started demands to increase the human birth rate. The Rainbow Salmon game draws from these public debates and uses them as conversations about falling human birth rates. These debates are familiar in the common discussions of Western welfare states and often highlight the role of females. Salmon reproduction discussions also underline the importance of older female salmon as they can lay eggs in multiple reproduction cycles and, thus, are vital for the salmon population in the River Deatnu. The Rainbow Salmon character creates a human–salmon connection by using the reproduction conversations and possible player experiences about reproduction pressure.

Worldbuilding took place with character creation. Rainbow Salmon lives in two places in the games: the river and the sea. These two living areas have a different meaning in the life span of salmon, making them both environments that express loss. The river is where salmon reproduction should happen, and the sea is for other fish life. These environments are represented with blue, and the sea scenes also have some green animated seaweed. When Rainbow Salmon is in the river, the colors of the rainbow are added to the fish. As this was not possible in Bitsy, the rainbow colors were added to all the in-game texts instead. Marking a space with a rainbow flag can mean, albeit not necessarily, that the space is diversity friendly (Wolowic et al. 2017). Defining these in-game environments as Read-Only Sacred Spaces (Byrne 2021), the designer states that “this gaming environment is my creation and important to me, you can look but don’t touch.” Colonization of the Sámi is still taking place today in the form of, for example, aggressively reshaping the lives of the river Sámi through the Deatnu Agreement (Holmberg 2018, Kuokkanen 2020). However, the creation of a restricted environment is counteracted through Indigenous game design, which challenges restriction, transforming it into a sacred space by drawing its outer lines with the global use of rainbow symbolism. Rainbow Salmon as a character symbolizes Sámi pride, counteracting non-Sámi and outsider experts who might belittle and lack the intergenerational knowledge of the Sámi-salmon-river relations.

The aspects of loss and grieving are not underlined in world building. For example, the music and sound design of the games does not provide any grieving ambience. Rainbow Salmon is a silent game without a soundtrack, and Rainbow Salmon Talks With Fish uses a happy tune from the Bitsy library. This also highlights sacred space boundaries: the games are freely available and playable online, salmon grief being hidden from those who lack the human–river connection.

Grief in Sámi digital storytelling

Rainbow Salmon engages with Sámi storytelling through descriptions of the character. Twine branches can be used in nonlinear storytelling, as linear storytelling is not typical of the Sámi storytelling tradition (e.g. Aikio and Aikio 1978). In this case, when time for game development was seriously limited, the storytelling focus was on exploring the essence of Rainbow Salmon’s story and how this hero behaves in different situations (see e.g. Enges 2015). The game starts from a setting where simplicity is highlighted: Rainbow Salmon, a simple fish, likes the simple life. As the relationship of Sámi people and River Deatnu has been burdened by external rules and regulations for centuries, the simplicity of life can be seen as a counteraction to that. The main story of both games is based on the player’s agency and thus on player-driven narratives, as the player’s choices can have an impact on the unfolding of the story. In the Rainbow Salmon game, choices come with consequences: the two endings offer two different stories of how Rainbow Salmon reacts when simplicity

confronts pressure. The two choices give the player very little agency: either to swim up, or to swim down. If the player chooses to swim up, the pressure to reproduce increases. The player is suddenly in a lower-level position of “the other” under the surface. In the second scene, the player can choose between swimming down and starting a family, “making lots and lots of babies.” If the player decides to swim down, that can be seen as a counteraction to the pressure of reproduction. The choice is between individual vs. community interests. If players choose to swim down in the first scene, then they jump to the third scene. The third scene also offers two options: “Now go and watch some Eurovision Song Contest” and repeats the option of “Making lots and lots of babies”.

The pressure of reproduction is present in *Rainbow Salmon*’s in-game life, popping up on the surface scene by scene. This also addresses the grief of not being able to reproduce and childlessness. Salmon reproduction cannot be compared to human “baby-making” processes. For example, one female salmon can lay eggs that may grow to be “lots and lots of babies” at once. For humans, that kind of baby booming is not possible. For salmon, difficulties in reproduction can mean the loss of spawning grounds in the Deatnu River due to ecological reasons, like water warming up and invasive species in the river. For humans, the reasons behind infertility are mainly body-related and have very little to do with the surroundings, even though ecological reasons may lead to voluntary childlessness and can still cause grief. If the player chooses to watch the Eurovision Song Contest, the game ends in a party screen, meaning that the *Rainbow Salmon* did not reproduce and the pressure of doing so is lifted. Having that said, the real-life public reactions to the decrease in the salmon population are shock and sadness both inside and outside Sámi communities and have nothing to do with partying. The party screen can be seen as a celebration of the freedom to make one’s own choices and not to surrender under reproduction pressure. The game itself does not offer the opportunity to win, nor right or wrong responses. For example, players can choose “to make lots and lots of babies” even though it might seem like a bad choice at first. If salmon reproduction is successful, that is the first step towards a healthy salmon population in the Deatnu River. Moreover, when the Deatnu River is in balance, the river Sámi culture can heal as well. The two endings are not the opposite endings of one phenomenon, instead they are describing balance seeking.

Storytelling in *The Rainbow Salmon Talks with the Fish* begins in the sea with the same main character. Although the Deatnu River is the place where Atlantic salmon reproduce in cycles, the sea is where they mainly live. This leaves the immediate pressure of reproduction out of the scene. The lack of pressure is embedded into the game mechanics: the game is virtually a swimming simulator with fish puns. The fish puns are linked to salmon to suit their creative context: salmon don’t like tuna, the fish are still talking about the Eurovision Song Contest, and reproduction is still a topic through meeting “the dream gill” and educational advice for fish children. Dark humor is a way of expressing feelings in a stressful situation and keeping one’s distance concerning the matter at hand to remain functional, “getting through the day” (Rowe and Regehr 2010). The grieving journey towards survivance is, in a sense, sharing the idea of living to fight another day. The puns play with words, reminding the player of something known as “dad jokes” that are, for example, lame puns that teach the audience how to handle emotions like embarrassment (Hye-Knudsen 2022). Players can swim in the sea and talk with other salmon in the sea as much as they want.

The game ends when a player touches a small circle at the bottom of the ocean. The end screen welcomes the player to come again “to the sea of love,” referring to a song by Robert Plant, *The Honeydrippers*, from the album *The Honeydrippers Vol. 1* from 1984. The song is originally a love song for someone who has “been there” for a long time. The sea of love is manifested as a sea full of fish, pointing to what is loved. Losing these fish is like the loss of a loved one, ending up with grief.

Both games deal with loss, but that is not their central theme. Experiencing loss, *luossamoraš*, in these games is linked to larger issues to which the Deatnu River Sámi are connected. At the center of the relations are several river-based actions that include salmon, river, language, and the current political, social, ecological, and economic situation. Loss and salmon grief must thus be understood in the broader context of sustainability grief (see e.g. Op de Beke, Raessens and Werning 2024), which involves the issues of traditional knowledge, language, and the land-based history of the Sámi in the Deatnu River region.

CONCLUSIONS

The aim of this article was to address the role of Indigenous digital game creation at the time dramatic environmental and ecological changes. Our case was the Sámi sovereign game design and two games created at the time of the radical fall of salmon population in the River Deatnu. They clearly offered a way to deal with local *luossamoraš*, salmon grief, and the process of creating the two games manifested itself in storying from the perspective of salmon, or rather with and through salmon. As digital games may often be associated with leisure time and distancing people from their immediate environments, and with Western consumerism, they can also function as a makeshift playground for Indigenous game designers to express themselves. Yet, the game creation goes beyond expression, and is also about reciprocal relations of beings, both humans and more-than-humans.

The meaning of these playgrounds can be identified through three aspects: the meaning for self-determination, the meaning for the players, and the meaning for the medium. The meaning for self-determination can be explored through the designer in the Sámi game design context. The creation of these digital games and the process of salmon constitute a personal journey of the first author towards survivance with the help of in-game storywork (cf. Archibald 2008). The process of making the games created not only a shared sacred space where genuine expression was invited and radically embraced, it also created memories to be cherished, like the shared communal space of creating games with other developers. To express grief through game development, there was no need to use complicated game design tools or a great deal of time. In a relatively short period of time in-game “grief chapters” were created which both engage with grief and are entities that give previously unspeakable loss inner (“I create this as I see fit”) and interpersonal (“the River Deatnu community can recognize this and possibly relate”) validation (see Harrer and Schoenau-Fog 2015). The makeshift playground functions as a playground for dealing with grief, not to imitate the real-life environments as such. Making games is an act of processing grief through creating meaning: the salmon is the meaning, game design is the making, and the vocabulary of Indigenous game design are the ways of expressing it. Makeshift is thus shifting worlds from broken towards sustaining.

The meaning for the players can be seen through different gaming journeys. Players experience the games differently, and for a player with no connections to the River Deatnu may just see the two games we analyzed as two colorful and happy games.

For Sámi players, whose home or roots are in the Ohcejohka region, the games may offer a way to strengthen sustainability survivance and develop its diverse dimensions, which the dominant society may categorize as “cultural”, “economic”, and “environmental” aspects of sustainability. The games addressed and engaged multidimensional emotions, which have been called *luossamoraš*, and may give these emotions mutual validation to those, both human and more-than-human, who can relate to them.

Transformation towards the next digital era has raised expectations of novel opportunities to develop Indigenous sustainability knowledge (cf. Whyte 2019, Virtanen et al. 2020). Through the medium of games Indigenous grief can be directed toward self-determination. Grieving does not only look back – it also looks toward the future. Even though these makeshift playgrounds are born out of the grief of losing real-life human–river relationship knowledge, their creation also ties together actual physical sacred spaces and their virtual expansions through knowledge. Grief is a common theme in Indigenous games, because grief is a part of Indigenous lives in a variety of forms, such as colonial grief (Byrne 2021, LaPensée 2014, Loban 2023) or as in this case, sustainability grief (see also Op de Beke et al. 2024). Even if this outside forced grief somehow disappeared, grief is still a part of human–river relations. Communities that live beside the Deatnu River, for example, have lost their members to the river in different seasons. The loss of a community member causes grief, but also increases community knowledge about how to coexist with the river. In the case of these Sámi games, dealing with grief via digital platforms shows human–river–knowledge nuances, and creates an understanding of analog/ digital intertwined sacredness. Thus, creating games that engage with grief can also advance the sustainability of Indigenous self-determined games, as it recognizes the importance of capacity building in new spaces. This also involves Indigenous language use and community involvement in game development and futurity thinking.

ACKNOWLEDGEMENTS

We would like to thank the Kone Foundation (*Biocultural Heritage and Non-linear time* project) for funding and the anonymous reviewers for their constructive comments.

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