

# NONVERBAL COMMUNICATION

A stylized, golden-brown humanoid figure with its arms outstretched, holding a black banner with white text. The figure is centered against a blue background. The banner is tilted and contains the text 'IN VIRTUAL WORLDS'.

IN VIRTUAL WORLDS

Understanding and Designing  
Expressive Characters

EDITED BY: JOSHUA TANENBAUM    MAGY SEIF EL-NASHI    MICHAEL NEEON

# NONVERBAL COMMUNICATION IN VIRTUAL WORLDS:

UNDERSTANDING AND DESIGNING EXPRESSIVE CHARACTERS

*Edited by*

*Joshua Tanenbaum, Magy Seif El-Nasr, & Michael Nixon*



# 8

## TIMETRAVELLER™: FIRST NATIONS NONVERBAL COMMUNICATION IN SECOND LIFE

By Elizabeth LaPensée and Jason Edward Lewis

### INTRODUCTION

In order for Indigenous knowledge to survive in a post-colonial context, Indigenous peoples must both know and understand Western culture (Mihesuah, 2003). This understanding includes how to use Western technology. For our current purposes, we are particularly interested in how the ability to manipulate digital technology can be used to reify Indigenous knowledge in virtual spaces that have the promise to be radically intercultural. Our approach to materializing Indigenous knowledge involves sharing Indigenous stories, whether traditional or contemporary, with both Indigenous and non-Indigenous peoples via digital networks. Such sharing requires that Indigenous storytelling practices, including nonverbal communication components, be adapted for new contexts.

Contemporary Art curator Candice Hopkins (Métis/Tlingit) describes Indigenous stories as continually changing, individualized and communal, original and replicated, authored and authorless (Hopkins, 2006). Hopkins employs Victor Masayesva's explication of Indigenous aesthetic—measured by the artwork's ability to subvert colonization—as a way to frame Indigenous creation in cyberspace. Drawing from Dana Claxton (2005), we can also see the futility of distinguishing between “traditional” and “contemporary” styles, given Indigenous art's situation within a context of constant change, hybridity, and timelessness. The stories told by Indigenous new media artists such as Skawennati (Fraguito, 2010), Archer Pechawis (2011), Cheryl L'Hirondelle (2011), and Ahasiw Maskegon-Iskwew (2003) incorporate these characteristics as they seek to occupy, transform, appropriate and reimagine cyberspace. Virtual worlds like Linden Lab's *Second Life*, which allow users to constantly generate new environments and perform within them, offer an ideal space for Indigenous representation in a digital context.

Accounting for nonverbal communication is essential to diverse and robust cultural representation in virtual worlds. Examining user-generated assets such as animations, clothing, and objects, as well as the placement and use of avatars can help inform intercultural communication in virtual spaces. Specifically, considering the transference of First Nations traditional and contemporary nonverbal communication into virtual worlds can be useful in future design of and research of First Nations representation in a virtual context.

Our case study for considering the role of nonverbal communication in virtual worlds focuses on *TimeTraveller*™, a machinima series and Alternate Reality Game (ARG) in *Second Life* created by Mohawk artist Skawennati. *TimeTraveller*™ is a project by Aboriginal Territories in Cyberspace (AbTeC)—a research network of artists, academics and technologists centrally concerned with Indigenous representation in digital media. AbTeC investigates innovative methods for Indigenous peoples to participate in networked culture to tell our stories, and in so doing, strengthen our communities and participate actively in shaping cyberspace. Jason Edward Lewis and Skawennati co-direct AbTeC and Elisabeth LaPensée is a Research

Assistant who writes for the *TimeTraveller*™ ARG. Although we have not directly participated in the creation of nonverbal communication assets in *TimeTraveller*™, we have in-depth knowledge of the project from personal communication with Skawennati over years of development.

We first look broadly at nonverbal communication in culture and nonverbal communication in virtual worlds. We then discuss the background, motivation, process, assets, and challenges of *TimeTraveller*™. The ongoing development of *TimeTraveller*™ offers insight into the possibilities and importance of culturally based nonverbal communication in virtual worlds.

# 1. NONVERBAL COMMUNICATION

## NONVERBAL COMMUNICATION IN CULTURE

Definitions of culture are as numerous as the number of different cultures themselves. All definitions of which we are aware, however, have a central claim that culture is learned—rather than biologically inherited—through a process that involves assigning symbolic meanings (Jandt, 2010). Cultures are distinguished by how and to what they assign these meanings. Intercultural communication both concerns the internal communication of an individual culture and cross-communication between different cultures. The integral parts of intercultural communication include perception (e.g. beliefs, values, attitudes, worldview, and social organization), verbal processes (e.g. verbal language and patterns of thought), and nonverbal processes (e.g. nonverbal behavior) (Samovar & Porter, 1991).

Nonverbal communication most generally refers to wordless communication, including gesture, body language, facial expression, intonation of speech, and clothing (Innocent & Haines, 2007). Communication scholars Samovar and Porter (1991) divide nonverbal communication into four categories: (1) kinesics, (2) proxemics, (3) paralanguage, and (4) chronemics. Kinesics refers to body movements (or body language) made during communication, such as facial expressions, eye contact, hand gestures, and touch. Proxemics refers to the use of space during communication, including the range from architecture and furniture to the distance between communicators. Paralanguage includes all sounds made with voices that are not words, such as laughter, tone, and pacing. Chronemics relates to how time is used in communication, such as perceptions of past, present, and future as well as the literal passing of time during communication.

The intercultural communication research of anthropologist Hall (1959), later developed by social psychologist and anthropologist Hofstede (1983), identifies a difference in nonverbal communication between “low context” and “high context” cultures. Low context cultures rely on individual value orientation, line logic, direct verbal interaction, and individualistic nonverbal style. High context cultures function on group value orientation, spiral logic, indirect verbal interaction, and contextual nonverbal style. Intentions and meanings in high context cultures are interpreted within a larger shared knowledge.

Indigenous cultures tend to be high context cultures, whereas Western cultures tend to be low context cultures (Hall, 1976). As with any culture, nonverbal communication is intrinsically linked with all modes of communication. Native American historian Donald L. Fixico suggests that looking at nonverbal communication in the oral storytelling tradition informs our understanding of Indigenous communities and their thought processes (Fixico, 2003). Indigenous languages are, mostly, verb-rich process and/or action-oriented languages that rely heavily on nonverbal communication (Little Bear, 2000) as well as high context environments. Further, words and hand signals usually describe “happenings” rather than individual objects (Little Bear, 2000).

It is important to note that some nonverbal communication is shared among Indigenous peoples, but often each Indigenous tribe/nation/band has its own unique set of nonverbal communications. For example, Cherokee, Navajo, and Hopi, among others, make minimal eye contact to express that they are listening fully (Chiang, 1993). While Kiowa point with their lips (Kirch, 1979), Mohawk point with their chins.

As anthropologist Claude Lévi-Strauss has noted and advocated against, the difference in contextual importance combined with colonialist dynamics have contributed to the devaluing of Indigenous cultures by Western cultures (Samovar & Porter, 1991). This devaluing privileges colonialist perspectives over Indigenous perspectives (Smith, 1999), while the discrediting of oral and nonverbal communication traditions requires that Indigenous peoples actively work to counteract misrepresentations that arise due to the exclusive valorization of written or recorded communication methods (Chamberlin, 2000). Self-representation by Indigenous individuals of nonverbal communication in virtual worlds is one method to encourage intercultural communication with diverse communities. It is also a political act designed to reassert the value of such in the real world.

## NONVERBAL COMMUNICATION IN VIRTUAL WORLDS

Virtual worlds, which act as persistent, avatar-based social spaces, afford users with opportunities for intercultural communication and self-expression (Thomas & Brown, 2009). Users share the same space, see physical representations of each other, and communicate and act in the shared space through both verbal and nonverbal means. Nonverbal communication in real world spaces is learned as part of one's cultural literacy in a deep and continuous way, such that participants are often not aware of their performance of it. In virtual worlds, however, nonverbal communication by players through their avatars requires *intentional acts* on the part of the user (Verhulsdonck & Morie, 2009). More precisely, nonverbal communication in virtual worlds is “stylized through animation, appearance, and performance of the player's avatar” (Innocent & Haines, 2007). Avatars and objects may have altered appearances, be embedded within the space, react to input and interaction, and be created, combined, and modified (Innocent & Haines, 2007). These actions all result from users choosing to design the world in which they are participating.

Most virtual worlds are capable of supporting all four of Samovar and Porter (1991)'s forms of nonverbal communication, as well as an additional category, appearance, added by Kujanpää and Manninen (2003). Kinesics (body language) is realized through animations with particular emphasis on facial animations (Kujanpää & Manninen, 2003). Proxemics (use of space) can change from moment-to-moment based on an individual avatars' placement in space but can also be statically fixed for objects such as furniture or buildings. Paralanguage (sounds) are integrated on an individual avatar basis. Chronemics (use of time) often reflect the users' perception of time acted through avatars (Halbert & Ghosh, 2008). Appearance involves customizing the physical aspects of avatars (e.g. hair color and style, skin tone, eye color) and wearing or using items (e.g. clothing and accessories).

*Second Life*, in particular, supports all of the above forms of nonverbal communication as well as text and voice chat (Ryzmaszewski, et al, 2006). Support includes preset assets provided to every participant as well as enabling users to create their own assets using internal or third party tools.

*Second Life* contains numerous user-generated assets that can be used for nonverbal communication. Thousands of skins, shapes, hairstyles, tattoos, jewelry, clothes, props and animations are available for sale by independent creators. Photoshop templates for basic clothing are freely downloadable from *Second Life's* website, as are dozens of tutorials for learning how to create assets on your own. The world supports the creation of more complex non-verbal communication assets. For example, researchers interested in integrating haptic (touch) interactions in *Second Life* created a haptic-jacket system as an add-on to the communication channel (Hossain, et al, 2010). The haptic-jacket allows avatars to activate animations such as “encouraging pat” and “comforting hug.” Similarly, a wearable humanoid robot recognizes nine

emotions from text chat in *Second Life* and haptically augments the user's emotionally immersive experience (Tsetserukou & Neviarouskaya, 2010). The hope of such projects is to enhance user interaction and immersion in virtual worlds communication.

Communication scholar Smiljana Antonijevic, who spent six months conducting an ethnographic research study of nonverbal communication in *Second Life*, found a significant difference between predefined and user-defined nonverbal communication (Antonijevic, 2008). The use of predefined nonverbal communication—meaning nonverbal acts generated by the system—was often not related to avatar physical appearance or any co-occurring textual discourse. Notably, nonverbal communication assets made by users were tied closely to an avatar's physical characteristics (e.g. skin tone, height, shape) as well as the specific local context.

By virtue of its global reach, *Second Life* provides rich opportunities for intercultural encounters and exposure to unique cultural perspectives (U-Mackey, 2011). The challenges are many in designing effective nonverbal communications for exchanges where one participant might be logging in from China, another from Egypt, and a third from the Cherokee Nation (Oklahoma). The *TimeTraveller™* project provides an interesting case study for understanding those challenges, devising design approaches appropriate for surmounting those challenges, and generally considering how culturally diverse assets for nonverbal communication can be effectively integrated into the host environment.

## 2. TIMETRAVELLER™ CASE STUDY

### BACKGROUND

Skawennati is an artist whose work addresses history, the future, and change. She has been working in new media since 1996, beginning with the pioneering online exhibition and chat space, *CyberPowWow* (1997). *Imagining Indians in the 25th Century* (Fragrito, 2001); *Thanksgiving Address: Greetings to the Technological World* (with Jason Edward Lewis, 2002); and *80 Minutes, 80 Movies, 80s Music* (2002-present), have been widely exhibited. Her awards include imagineNATIVE's 2009 Best New Media Award and a 2011 Eiteljorg Fellowship for Native American Fine Art.

Skawennati initiated *TimeTraveller™* in 2008. It is a multi-platform project featuring a website (www.TimeTravellerTM.com), a machinima series, and an Alternate Reality Game. The story revolves around Hunter, a young Mohawk man living in the 22nd Century. Hunter possesses an impressive range of traditional skills, but finds difficulty fitting in to an “overcrowded, hyperconsumerist, mediated world” (Fragrito, 2011). With the help of his edutainment system, *TimeTraveller™*, he embarks on a technologically-enabled vision quest that takes him back in time to historical conflicts that have involved First Nations. Along the way, he meets Karahkwenhawi, a young Mohawk woman from our (2011) present, whose unique perspective on Aboriginal issues deeply affects him. Together, they discover the complexity of history, place, culture, and their place within it.

The *TimeTraveller™* machinima series is based in *Second Life*. *Second Life* is a popular platform for producing machinima, or ‘machine cinema’, a form of animated film created using game engines or virtual worlds (Marino, 2004). Machinima has been used for education (Carroll, 2005), art (Picard, 2007), activism (Jones, 2007), and entertainment. The *TimeTraveller™* Alternative Reality Game (ARG)—like all ARGs, a story-driven game that utilizes the real world and virtual world as the play space—serves to extend the machinima's storyline. Together, the machinima episodes, the ARG, and the website encourage players to learn First Nations history while offering a shared experience for a diverse community of players consisting of Indigenous and non-Indigenous youth, artists, *Second Life* enthusiasts, and history buffs.

The *TimeTraveller*<sup>™</sup> story begins at TimeTravellerTM.com (Fragrito, 2009). The website is presented as if it was made by an “edutainment” company in the 22nd Century to promote its latest product, “TimeTraveller<sup>™</sup>,” and appears in our present by means of a rift in space-time. Resembling a pair of futuristic sunglasses, the TimeTraveller<sup>™</sup> device creates perfect 3D renderings of real-life locations and their inhabitants from any time in history. Through the “patented” History HUD (Heads Up Display), users can interact with these historical events in a fully-immersive experience that feels like one has actually travelled back in time.

The website also hosts the machinima episodes. In the future context, Hunter has won a contest to identify the most extreme and exciting user of the technology, and, as the winner, he is starring in a reality TV series that follows him on the adventures he undertakes with the TimeTraveller<sup>™</sup> device. The machinima episodes are presented as installments in this series.

## SECOND LIFE

Skawennati was drawn to *Second Life* in part because it promised a rich set of tools for creating and supporting nonverbal modes of communication. She initially evaluated *Second Life* as a production platform due to its similarities with The Palace, the technology she used to host four iterations of the *CyberPowWow* online gallery from 1996 to 2004. *The Palace* was a virtual 2D chat space that allowed users to create avatars and backgrounds using 2D photos and art (Time Warner Interactive, 1995). *Second Life* incorporates the shared chat functionality of The Palace while extending the virtual environment into the third dimension. Skawennati saw that *Second Life* support for creating and customizing 3D avatars, building and scripting objects, and leveraging a hybrid economy (real money exchangeable for virtual money and vice versa) to exchange objects, materials, and land (Rymaszewski, et al, 2008) was a natural evolution/progression of her work in virtual worlds.

Given that much of the *TimeTraveller*<sup>™</sup> story is based on historical events, the series requires very distinct sets, props, wardrobes, hairstyles and actor-avatars (skins and shapes) that look like they come from a specific era. In 2008, when a user opened a standard *Second Life* account, she received a small library of assets including several choices of avatars, some basic gestures (which have not changed very much), some sounds (like a kissing sound), a few textures, and a list of vendors that gave away free assets to assist with the fact that, when she started out (then, as now), she was penniless. The user discovers, however, that the world is filled with thousands of user-generated assets that can be purchased.

However, Skawennati and her team soon found that it was quite difficult to find existing assets that were (1) appropriate for Indigenous representation and (2) would work within the context of the *TimeTraveller*<sup>™</sup> storyline. After a series of exhaustive but fruitless searches of the whole range of both built-in and user-generated assets, they decided that the only way to proceed was to custom-create the appropriate assets. As a result, the team produced a whole series of assets for use in nonverbal communication, either as part of the machinima episodes or in the ARG.

The resulting nonverbal communication assets are influenced by the *TimeTraveller*<sup>™</sup> story’s particular emphasis on portraying Indigenous peoples as technologically adept to an advanced degree. Further, the design of the assets stem from the individual perspective and choices of Skawennati, an urban-based, reserve-adjacent raised, half-Italian Mohawk who is quite conscious of speaking from that context. Consequently, the assets are not intended to encompass or represent all Indigenous peoples.

However, looking closely at the creation and use of the nonverbal communication assets for *TimeTraveller*<sup>™</sup> can be quite useful in informing the design of assets for the representation of other Indigenous peoples, both in *Second Life* and in other virtual worlds. Even more generally, the project’s cultural design process has implications for the importance of nonverbal communication for enriching and broadening the diversity of cultural representation in virtual environments of all kinds.



## PROCESS

*TimeTraveller*™ originated as the brother piece to *Imagining Indians in the 25th Century* (Fraginito, 2000). *Imagining Indians* draws on two traditionally “feminine” pastimes: paper dolls and journaling. In contrast, Skawennati envisioned *TimeTraveller*™ as a first-person shooter, which is archetypically considered “masculine”. Skawennati chose *Second Life* in part because it offered the first-person point of view. Secondly, it offered the built-in physics of teleporting and flying, which was exactly what her time-travelling, jet-packing characters required.

Prior to working in *Second Life*, Skawennati had positive experiences with taking existing technologies and customizing them. She found *Second Life* to be highly customizable. She and the team spent time self-teaching using hands-on experience as well as community and company support. The process of making assets and creating machinima was initially slow due to the newness of making and shooting in *Second Life*, particularly given that there existed very few resources on how to do it. The team learned by trial and error. The workflow sped up in later episodes when challenges were resolved.

The workflow developed by Skawennati’s team incorporated a unique development process for each class of nonverbal communication asset. Animations are made using QAvimator (open-source animation software developed for use with *Second Life*). Clothing is made in Photoshop (image editing software) using the Linden Lab’s templates. Textures are made from photographs of real materials, and then post-processed in Photoshop. Simple objects (e.g. walls, floors, benches) are built in *Second Life* using the provided tools. Complex objects (e.g. the *TimeTraveller*™ glasses) are built in and exported from Maya (commercial 3D modeling and animation software).

### 3. NONVERBAL COMMUNICATION IN TIMETRAVELLER™

Most of the user-generated nonverbal communication in *TimeTraveller*™ can be divided into two categories: (1) appearance and (2) performance. “Appearance” includes assets such as skin tone, clothing, hairstyles, and objects. “Performance,” or kinesics, includes body language such as gestures, facial expressions, touch, gaze, and posture (Allmendinger, 2010). For example, the team made assets such as whispering animations for the crowd in the futuristic powwow scene of Episode 04. Nonverbal communication in *TimeTraveller*™ is not limited to these categories, however. The machinima series also uses paralanguage, proxemics, and chronemics. Paralanguage (sound) appears frequently in the actors’ voiceovers, including emphasis, volume, and intonation. Autonomous forms of paralanguage such as laughter and sighing accompany default in-world animations. Chronemics (use of time) is incorporated in voiceovers and the representation of time in the story. For example, voiceover actors use pauses during speech or take deep breaths. Proxemics (space) is used in the placement of avatars in relation to each other and the sets. An example is the face-off scene in Episode 03, where the team could not use existing assets to get the Canadian soldier avatar and Warrior avatar to stand extremely close without touching. They ended up creating poses, which are like animations but static, so that the avatars would not overlap each other when they breathed.

For the purposes of the case study, we will focus on the categories of appearance and performance. These two categories describe the majority of user-generated nonverbal communication assets for First Nations representation both in *TimeTraveller*™ and in *Second Life* in general.



Figure 8-1: Hunter's distressed Iroquois Confederacy t-shirt.



Figure 8-2: Traditional ribbon shirt.

## APPEARANCE

Clothing provides ongoing individual self-expression for avatars in the *TimeTraveller*<sup>™</sup> machinima and ARG. For Hunter (the main character), Skawennati designed a collection of “distressed” t-shirts, all black and each featuring a First Nations symbol that would have differing levels of recognition to different viewers. In Episode 01, he wears one with an Iroquois Confederacy (Haudenosaunee) symbol, supporting his stated nationality (Mohawk), but also possibly indicating his rejection of Canada’s jurisdiction over him, his people, and their territory [Figure 8-1]. In Episode 02, his shirt features a twice-bisected circle representing the Four Directions. Many viewers know this symbol as a representation of sacred Anishnaabe teachings. Skawennati’s rendition of the symbol is very modern, and followers of her practice might recognize it from her 2000 work, *Imagining Indians in the 25th Century*, where a character that visits the future as an Olympic athlete wears it and it is displayed as the symbol that has been adopted as Canada’s flag. His t-shirt in Episode 03 depicts a stylized turtle that refers to Turtle Island. The decision to make the symbols “distressed”—or worn-looking—was to convey two things: the venerability of the symbols, and Hunter’s status as an outsider, not fitting in to the society around him.

Pinky, a Mohawk activist who appears in Episode 03 during the Oka Crisis of 1990, wears t-shirts that feature 1980s bands, indicating both her age and her unстереotypical—for a Native woman— taste in music. The Mohawk Warrior motif, which has been adopted by many Indigenous groups as a symbol of resistance, is seen on t-shirts worn by a warrior in Episode 03, the four-year old version of Karahkwenhawi in Episode 03, and a punk band drummer in the future powwow scene in Episode 04. Ribbon shirts, which are worn by many First Nations and Native Americans at special occasions including ceremonies and powwows, adorn various avatars [Figure 8-2].



Figure 8-4: Long braided hair for male avatars

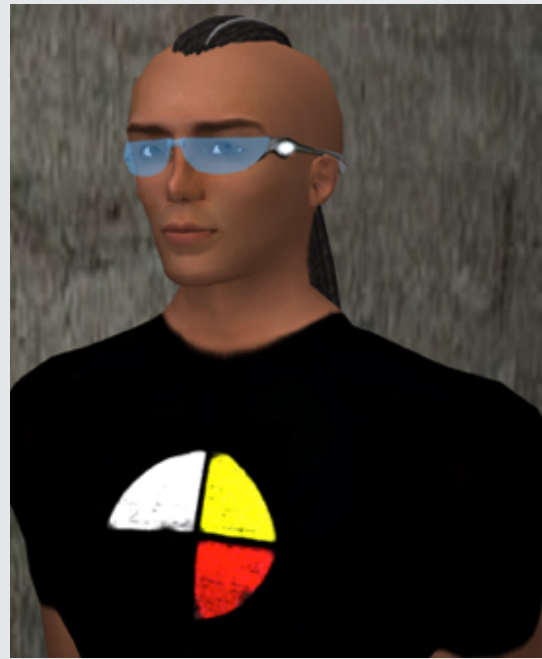


Figure 8-5: Hunter wearing the TimeTraveller™ glasses

Jingle dresses were originally worn by Anishinaabe women for healing dances and during the last few decades have been adapted to powwow culture. The “jingles” are metal cones attached to the fabric and are unique in both their appearance and in the sound that they make. They appear in an array of colors in the futuristic powwow scene in Episode 04 [Figure 8 3]. The haute couture “Ovoid” gowns from the same episode were designed by Skawennati and her team to reflect a flourishing trend in the contemporary Aboriginal world to integrate traditional textiles, styles and symbols into high fashion. The ovoid, which is one of the basic “building blocks” of West Coast imagery/design, is used to show how the future powwow embraces many Nations, including those that historically did not participate in powwows.

Hair selection proved to be especially challenging. Braided hairstyles are almost non-existent, probably because it is not possible to make them “flexi” (the in-world building tool that gives otherwise rigid objects flexibility). Hair assets were purchased for the most part. However, the team made long braided hair for one male avatar that needed a traditional hairstyle [Figure 8-4], which, unfortunately, was quite rigid.

Objects were also important for conveying the Native context of the locations and situations of the scenes. In Episode 01, Hunter’s weapons wall includes a tomahawk and bow and arrow (both purchased). In Episode 03, a shell and a custom-made sage bundle are used in a ceremony. The team made a wampum belt—traditionally woven with beads, sinew and leather and used as a mnemonic device to keep account of treaties and contracts. The TimeTraveller™ glasses worn by Hunter and later used by Karahkwenhawi in Episode 04 serve to show futuristic advanced technology in First Nations hands [Figure 8 5]. Karahkwenhawi, who lives in our present, also carries an iPhone. Hunter, by comparison, flies using a jetpack in his 2121 world.

## PERFORMANCE

Performance is most noticeable in full body movement, which was primarily customized in Episode 04. Karahkwenhawi is seen filming with her iPhone in a church. After she activates the TimeTraveller™ glasses, she joins a futuristic powwow where avatars are drumming and singing while competitors jingle dance in their dresses.

Karahkwenhawi has several hand gestures, including waving her hands in front of her face, answering the iPhone, putting on the glasses, and pressing the button on the glasses. Hunter shares the gestures required for the glasses but also uses specialized gestures including taking off his jetpack. The animations fight against stereotypes that First Nations people are not technology-capable.

In Episode 03, hand gestures from other avatars include gesturing to the flag on the treatment center, gesturing to the trees while explaining, and waving hands at the television. Hand gestures that acknowledge the subject of communication are especially important in First Nations nonverbal communication. Specialized hand positions also had to be made for holding the wampum belt and smudge shell [Figure 8-6]. The positions are meaningful since ceremonies have particular protocols.



Figure 8-6: The smudge shell and bundle of sage used in Episode 03.

Head gestures were made mainly to replace the default *Second Life* animations that were too exaggerated for *TimeTraveller*™. In Episode 03, a female warrior shakes her head. The team also made three variations on what they referred to as a “non-spastic nod of agreement.” Most notably, they made a head gesture that enables avatars to point with their chins—a specifically Mohawk form of nonverbal communication.

Touch animations vary in terms of purpose and type. In Episode 02, an avatar elbows another to “shut up.” In Episode 03, touch is used to show relationships. For example, Pinky puts a hand on Hunter’s shoulder to disengage him from the face-off with the soldier. Her simple gesture shows her sense of control of the situation, unafraid and able to guide the young warrior to make the right choice. Lance Thomas pats the young hothead on the back, to tell him he was proud of him. Mavis McCumber, an elder, kisses her male counterpart on the cheek, expressing her affection for him. Finally, Hunter picks up the four year-old Karahwehawi and playfully tosses her in the air, demonstrating the fact that he had gained her trust, and that they had become friends.

## APPROPRIATE ASSETS

The *TimeTraveller*™ machinima series and ARG required creating original nonverbal communication assets for three reasons: (1) the assets needed were simply not available in *Second Life*, and/or (2) the default assets were unsatisfactory, and/or (3) many of the user-generated assets were unsatisfactory.

Skawennati found that many of the default assets were either problematic or unusable. The gestures and facial expressions, for instance, were too extreme. Partially, the dramatic animations did not fit the tone of the machinima series. More generally, proper representation of Indigenous nonverbal communication required a full range of subtle gestures and expressions. For example, the default laugh is a belly laugh; there are no little chuckles or giggles. An angry or quizzical face had to be on or off, and even when the team's avatar operators turned them on and quickly off again, they still usually lasted too long.

Similarly, *Second Life* residents also make a lot of animations to accompany the virtual world's sex industry. Thus, one can find a plethora of physically intimate animations, yet not one animation for a kiss on the cheek—they all were designed as direct mouth-to-mouth kisses.

Skawennati also found *Second Life*'s default hair to be hideously designed (Fragnito, 2011), which is why, she suspects, there is so much user-generated hair available for purchase. Unfortunately, even with all that hair around, the team could not find long braided hair suitable for a Native male in the 1800s.

Whether default or user-generated, most assets were not appropriate for representing Indigenous cultures. In terms of cultural appropriateness, Skawennati felt that the representations of Indigenous people and cultural artifacts in *Second Life* are largely romanticized depictions based on pan-Indian stereotypes from the 1800s. Her experience observing and talking to other participants in-world points to three reasons that users create Indigenous avatars: (1) Western role-playing sims, (2) exotic eroticism, (3) and solidarity with Indigenous peoples. Western role-playing sims (simulations) invite players to role play in settings reminiscent of Western films with props and clothing such as feathered guns and moccasins. Exotic eroticism is found throughout *Second Life*, and it has been adapted to Indigenous representations through the creation of “animal hide” bikinis or outfits of feathers, skillfully placed to cover genitalia. Lastly, some ‘Indigenous’ assets are made by and for users who want to experience or express their support, understanding of, or desire to participate in Indigenous spirituality, beliefs, and politics. Clothing and accessories in this category include sage bundles, drums, flags, and political t-shirts. Animations include dances and spiritual practices.

It was rare to find any assets that seemed to be made by or for Indigenous people when Skawennati first joined *Second Life* in 2007. Skawennati's first encounter with Indigenous representations in *Second Life* was with two female avatars dressed in sexualized regalia. After, she found more clothing, but at the time, *Second Life*'s building limitations as well as the misinterpretations of Indigenous design by users resulted in poor quality assets, such as feather accessories for hair. When Skawennati started the machinima series, only light-colored skins were available for avatars. She settled on the darkest skin she could find—one identified as “Latino”—for Hunter. Because no traditional Mohawk hairstyles were available, she had to give Hunter the punk-inflected dreadhawk—though she later came to regard it as a better fit for his personality and era. In general, hair that accurately depicted both historic and contemporary Indigenous styles was the most difficult asset to find. Eventually, more clothing became available, but most of it was overtly erotic.

By the time Skawennati shot Episode 02 in 2010, the situation had improved, albeit marginally. Since Episode 02 takes place in the 1800's, the team was able to find and use a number of user-generated assets, including a bow and arrows, moccasins, raccoon hides, a pouch, a necklace, turquoise belt buckles, and feathered rifles. However, many clothing assets had to be mixed and matched for better historical accuracy—a loin cloth worn with a European-style cotton shirt, for example. For later episodes, the team was unable to locate useable ribbon shirts, fancy dance dresses, and jingle dresses.

Objects were also difficult to locate. The team found examples of shells and sage bundles available for sale for users, but they were all designed poorly. *TimeTraveller*<sup>™</sup> required objects that were realistic in size compared to the size of avatars. All of the existing options were oversized. However, the team was able to use some objects made by users, such as guns with a “Native” option (meaning they could be worn with feathers attached) that were used in Episode 02 of the machinima.

One of Skawennati’s main goals with the project was to integrate First Nations cultural imagery (historical, contemporary, and futuristic) with imagery of high-tech equipment and processes (Fraguito, 2011). Similar in concept to the “Native” versioning of guns, Skawennati integrates First Nations imagery with imagery of advanced technology. In particular, she uses screens, from large-scale home displays to tiny mobile displays, as a motif engaging screen culture and invoking issues of remediatization (Bolter & Grusin, 2000). She included objects such as an 1800’s Panorama, a big screen television in the future, a 1970’s/1980’s era television, an iPhone in the present, and a gigantic, anti-gravity revolving screen at a powwow in the future.

## CHALLENGES

Even though *Second Life* is currently the ideal virtual world for *TimeTraveller*<sup>™</sup>, the team ran into numerous disadvantages when using nonverbal communication. Avatars in *Second Life* have notable limitations: (1) they are mainly in an on or off state, (2) in-world customization is limited, and (3) default characteristics and animations are problematic.

The most challenging limitation is the fact that avatars are either in an on or off state; for example, they either sit or stand without a continuing flow of animation. Using custom animations with precise timing when shooting machinima or live performances with avatars provides a way of overcoming this challenge but doing so requires a well-organized team working in the same space to allow them to effectively communicate directly with each other out-of-world, in other words, in real space.

Secondly, in-world customization has limitations. Avatars cannot be made child-sized using *Second Life*’s controls in-world (meaning within the *Second Life* application). On the other end of the spectrum, it is also hard to make an avatar appear old in body structure. Making the necessary modifications to avatar size and structure must be done using third party software, which in turns requires separate skill sets and an often cumbersome and error-prone process for importing the subsequent models back into *Second Life*.

When Skawennati first began *TimeTraveller*<sup>™</sup>, the default walk animation was jerky. Users responded to this problem by creating Animation Overrides (AO), which are now widely available. However, AOs are problematic due to the fact that custom animations often will not work while an AO is activated.

The team’s biggest challenge was making unblinking eyes for a dead character. In fact, the team is unable to make facial expressions in *Second Life*, which is a major concern for nonverbal communication. Many of *Second Life*’s default facial expression animations are overacted. To resolve this, during the editing phase, shots are cut short to minimize the length of the animation.

However, as *Second Life* improves with software updates and users create new solutions, so do the possibilities of overcoming current challenges in customizing and using nonverbal communication.

## 4. FUTURE WORK

Development on the *TimeTraveller*™ machinima series and ARG are ongoing. Four episodes of the machinima are complete and another six are planned. Episode 05, in which Karahkwenhawi finds herself at the deathbed of the Blessed Kateri Tekakwitha, is currently in the research phase. Episode 06 will feature a recreation of part of Alcatraz Island in 1969, and Episode 07 part of the thriving metropolis of Tenochtitlan in 1490. Episodes 08 through 10 explore Karahkwenhawi's and our Future. The ARG is currently in the development stage as a *Second Life* game component. The gameplay includes a scavenger hunt that draws participants to elements of the storyline.

Future plans for the development of *TimeTraveller*™'s nonverbal communication assets include distribution to other creators, the creation of new assets, and additional research into technical and design workflows to better accommodate their creation. Currently, only the team's avatars can access the current assets. AbTeC plans to release select assets to other users through the ARG as a part of a reward mechanism to encourage participation. Ultimately, most of the assets will be made available to the general *Second Life* public through AbTeC's proposed in-world store.

Each additional episode has substantially new settings, and a constant flow of new characters. Skawennati sees each episode as an opportunity to experiment with making new assets, such as Aztec regalia and feather headdresses for Episode 06. Over time, as her team becomes more facile within the environment, she is planning for a growth in the complexity and sophistication of her assets. Already, one can see a huge jump in ambition between the first episode and Episode 04—which incorporates a detailed, to-scale replica of the real-life Saint Francis-Xavier Mission in Kahnawake Mohawk Territory, as well as the massive, Olympics-sized powwow stadium.

Once all of the assets from *TimeTraveller*™ are finished and made accessible to other *Second Life* users, AbTeC will conduct additional research to observe and analyze the acquisition and use of the *TimeTraveller*™ assets. Possible research questions include: (1) What types of avatars are using the assets (do they self-identify as Indigenous or not)?, (2) How do they use the assets?, (3) Where do they use the assets?, and (4) What is their interpretation of the assets? Answers to questions such as these will help to determine their impact as First Nations representation in virtual worlds. Virtual world builders could greatly improve the cultural reach of their environments by soliciting feedback from different cultural groups on what sort of assets should be part of the default libraries.

## 5. CONCLUSIONS

In *TimeTraveller*™ specifically, the most customizable forms of nonverbal communication assets include (1) appearance and (2) performance. Foremost, the process of making *TimeTraveller*™ resulted in a growing collection of nonverbal communication assets for First Nations representation in *Second Life*.

The process of making the assets in a self-determined context has implications for designing Indigenous assets in other current and future virtual worlds. The designer needs to operate from a specific context—which Nation, which tribe, and when—as well as have some familiarity with the actual texture of life in Indigenous communities. Indigenous people are particularly well-placed to understand and honor such contextual information, but it is possible for non-Indigenous designers to make contributions if they ground themselves in traditional forms of Indigenous nonverbal communication. The designer needs to understand how the available tools have been built with a particular set of representations in mind, and she must consciously develop ways of working around those limitations rather than accepting them and the

homogenizing results. The virtual nature of the exercise does not mean no consequences exist in the real world for these choices; the constructed nature of the exercise creates a heavy burden on the designer to take responsibility for the cultural significance of everything she makes. Designers should put pressure on the builders of virtual worlds—regardless of the cultural backgrounds of the developers—to better facilitate culturally grounded representation and self-representation by (1) expanding standard asset libraries in ways that are useful for Indigenous representation (e.g. appropriate skin tones), and (2) thinking deeply about how their customization tools can accommodate a wider range of representation and action. Skawennati's *TimeTraveller*<sup>™</sup> project—representing First Nations peoples in a future context in a way that acknowledges individual nations and expresses that First Nations peoples are indeed technologically advanced—provides a strong example of what can be done in such spaces, but only with much customization and fighting against the grain of the tools. We contend that all virtual world builders should make an effort to solicit the feedback from different cultural groups.

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