

## Animating Traditional Amazonian Storytelling: New Methods and Lessons from the Field

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“We have taught you many things,  
said Kisibi and Deyubari.  
Did you understand it well?  
Let’s try to sing now.”

*Livro dos Antigos Desana  
Guahari Dipuhtiro Porã.<sup>1</sup>*

In this paper I describe the development of digital animation of Desano traditional stories as a way to foster the inclusion of the Desano language in mainstream digital technology media, while promoting language maintenance and dissemination of cultural knowledge among youths and young adults. The project considers the shifting contexts in which many Desano people live in the contemporary period. Digital animated Desano stories provide important public, community, and scholarly validation for the language as living, dynamic, and vital. Qualitatively different from other written materials produced for the Desano communities, animated digital materials importantly make use of oral language (i.e., animation is accompanied by the original audio in Desano and Desano subtitles), thus exposing younger generations to the sounds and orthography of the language. Oral language-based resources via animation and narration of traditional stories can aid in the group’s language maintenance efforts as they reinforce the spoken language, familiarize the community with the orthography, and celebrate traditional knowledge.

**1. Introduction**<sup>2</sup> This paper describes a recent initiative to create digital animations of traditional Desano (Eastern Tukanoan) stories, as part of a larger language documentation enterprise. The creation of such materials involves ‘community-based’ collaboration, following a ‘participatory model’ in which community members play

<sup>1</sup>Sampaio Galvão & Castro Galvão (2004:287).

<sup>2</sup>I thank the Desano communities of San José de Viña and São Sebastião do Umari for supporting this work. Thanks to Frank Matos, a Desano consultant and friend; Luis Gomes Lana e Ercolino Alves, for sharing their knowledge; Isabel Marte and Zachariah Bellucci for creating the animations; and FOIRN for their logistic support. I gratefully acknowledge the support of the National Endowment for the Humanities/DEL PD-50023-12, and the National Science Foundation/DEL BCS-1500755. I also thank the two anonymous reviewers for their feedback. The findings and conclusions, including any errors, in this material are those of the author and do not necessarily reflect the views of the NSF, the NEH, or the reviewers.



a central role in the activities (cf. Yamada 2007, Stebbins 2012). It also involves interdisciplinary collaboration between a linguist, indigenous educators, and film and digital animation professionals. The project's innovative techniques are a response to the shifting contexts in which many Desano people live in the contemporary period, including increasingly strong external influences in many communities, such as electricity, television, and new forms of social interaction and entertainment.

Although electronic media and technologies such as television have been viewed as drivers of language shift—for example, as having a potentially negative impact in the traditional indigenous lifestyle and indigenous language retention (Krauss 1992)—they also offer potentially positive aspects, such as being the instruments for the very survival of languages in this (electronic and) digital era (Browne 1996, Kornai 2013). Thus, digital technology plays an important role in language documentation and revitalization efforts (Eisenlohr 2004; Nathan 2006; Jones 2014).

The creation of digital materials for Desano is inspired by a 'digital storytelling' approach, characterized as the application of oral narratives and multimedia objects to produce short film or related media (Rossiter & Garcia 2010). However, the new Desano animations differ from other forms of digital storytelling insofar as in the former, the characters and events in the stories are digitally animated, whereas in the latter they are not. In the context of an endangered language such as Desano, these materials provide important public, community, and scholarly validation for the language as living, dynamic, and vital. Qualitatively different from other written materials produced for the community, these new digital materials importantly make use of primary oral data (i.e., animation is accompanied by the original audio in Desano), thus exposing people to the sounds of the language by senior custodians of the community.

This paper begins with a description of access to electronic and digital technologies in the Vaupés currently, including access that the Desano people have to such technologies in remote communities, in §2. In §3, I present a brief description of the Desano Language Documentation Project (DLDP hereafter) and its goal for creating language materials in collaboration with community members. I then discuss the creation of Desano language materials using electronic and digital technologies, and describe the creation of digital animations. I offer some initial thoughts on how digital animations may be shared by community members as 'viral sharing' patterns associated with urban settings moves into isolated village communities.<sup>3</sup> Finally, in §4 I conclude with a discussion of ongoing efforts toward teaching Desano artists to use digital tools for creating animations as a way to empower them to create their own digital illustrations for future animations.

**2. Background & context** In this section, I provide an overview of the current context in which the Desano people live, the existing language documentation and revitalization activities, the increasing access to electronic and digital technologies in the region, and community members' attitudes toward technology.

<sup>3</sup>This 'viral sharing' pattern is somewhat similar to the network of digital media distribution in some remote indigenous communities in Australia (see Mansfield 2013).

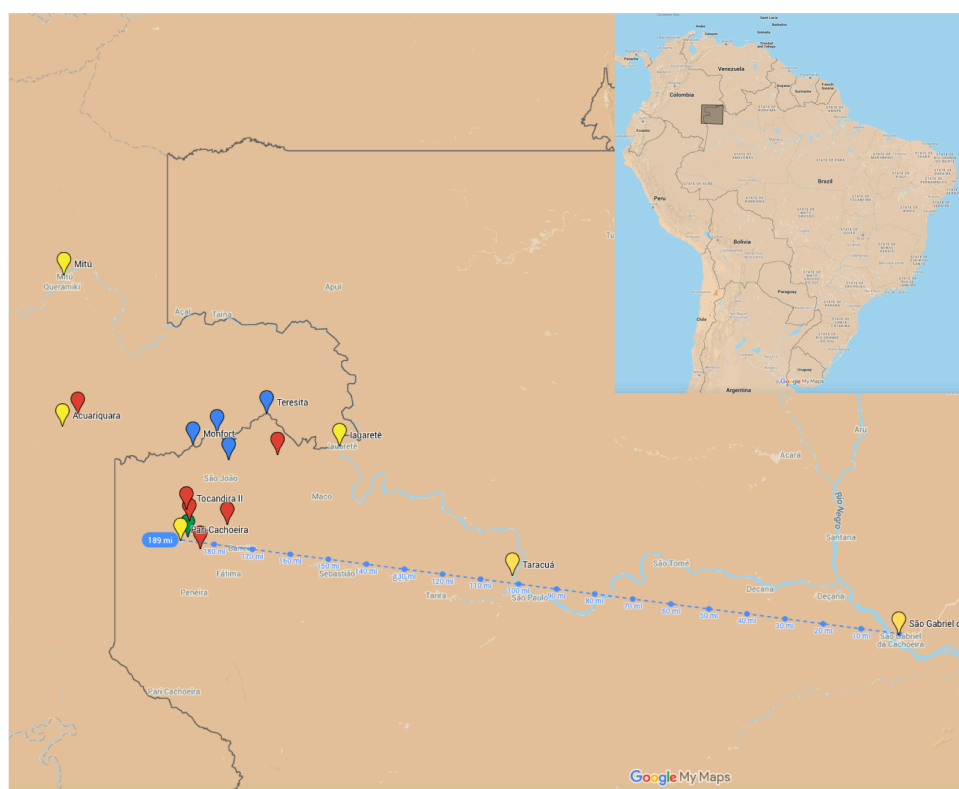
**2.1 The Desano language and its speakers** Desano is an endangered Eastern Tukanoan language spoken of the Vaupés Region of northwest Amazonia, in the Brazil-Colombia border. The Desano communities are located along the Papurí River (Colombia) and the Tiquié River (Brazil) and their tributaries. In Brazil, many of the Desano people who still live in the traditional communities are abandoning their traditional language and switching to Tukano, the dominant indigenous language in the region.

In the communities with access to electricity, people are exposed to non-indigenous languages (e.g., Portuguese and Spanish), and some traditional evening practices, such as storytelling, singing and dancing—which are important for the continuity of the culture and language—are being replaced by television watching. Another factor that contributes to the endangerment of the language is largely a result of migration from traditional communities to other towns or bigger villages, after which these people abandon their traditional lifestyle and replace their language with Tukano (or either Spanish or Portuguese, if they move to the urban areas).

Since 2008, I have been working closely with two Desano communities (*São Sebastião do Umari*, in the Tiquié River area in Brazil; and *San José del Viña*, Papuri River area in Colombia); these communities serve as my primary research sites. The people in these communities contend that priority should be given to the production of language material in the language. More specifically, they are interested in promoting the language to younger speakers, especially to the children. These communities took the initiative to build a structure that serves as a school/community center where language documentation and revitalization activities can take place en masse; they are also physically located near other Desano communities, making extended participation and inclusiveness possible. The map in Figure 1 shows the location of the Desano communities in the Vaupés Region. The communities that participated in the workshop to create illustrations for the animations in 2015 (see §3.2.1) are in red; other Desano communities are in blue. The nearest mission towns/urban areas (including the towns of São Gabriel da Cachoeira [Brazil] and Mitú [Colombia] are in yellow.

**2.2 The Desano Language Documentation Project (DLDP) and language revitalization activities** The Desano people are aware that their language—and with it, much traditional knowledge—is highly endangered. In 2008, a group of local activists and myself began the community activities of the DLDP.<sup>4</sup> One of the goals of the project from the outset was the creation of educational materials to aid in the language maintenance efforts. In the same year, members of the group (i.e., teachers and community members) began to organize workshops to discuss the development of a practical orthography. The project activities have received, since their inception, logistical support from the *Federação das Organizações Indígenas do Rio Negro* (FOIRN), the official indigenous organization in the region.

<sup>4</sup>The work on Desano started in 2007, with support from the *Endangered Language Fund*. Since then, the project has received support from *The Hans Rausing Endangered Language Project* (Field Trip Grant FTG-0155, 2008); NSF-DEL Doctoral Dissertation Improvement Grant (BCS-0756067, 2008-2010); PRODOCLIN-Museu do Índio/FUNAI, Rio de Janeiro, 2010-2013); NEH-DEL (PD-50023-12, 2012-2014).



**Figure 1.** Location of Desano communities and urban villages/towns in the Vaupés Region of northwest Amazonia

The Desano people are highly motivated to find ways to preserve their language. An example of their own initiative for linguistic and cultural preservation efforts is the *Projeto Bayawi* (Bayawi Project) conducted between 2007–2010 that targeted youth engagement.<sup>5</sup> The practical orthography developed in the Desano communities in Brazil is now being used in the Desano communities in Colombia, as part of an effort to consolidate the orthographies in Desano communities across national borders. All Desano language materials (storybooks, language primers, etc.) are distributed to the communities across the borders, aiding efforts for the consolidation of one orthography that can be representative of the different varieties of the language.

Electricity was installed in São Sebastião do Umari in 2011, and, since then, people have acquired personal electronic devices and home appliances. The ‘community center’ is now equipped with a television, speakers, and DVD player. This community center serves as the ‘satellite’ location for the project activities as it is in a central point between the missionary village of Pari Cachoeira, where many Desano people live, and two other Desano communities in the Umari Creek. However, while in São

<sup>5</sup>The *Bayawi Project* was supported by PDPI/FUNAI, the Indigenous Foundation in Brazil (an organ of the Brazilian Federal Government), and aimed to revitalize Desano traditions through an immersion program targeting youth.

Sebastião do Umari electricity is available all day long, in San José de Viña access to electricity relies on a generator and is thus less consistent.

During the project workshop in both communities, we exchanged ideas for the development of language materials. Members of both communities expressed their concern that the youth are very interested in watching television and playing videogames primarily in Portuguese, to the detriment of Desano knowledge. The idea for exploring the use of electronic and digital technologies for the communities' language revitalization efforts developed in the context of community meetings.

**2.3 Access to electronic and digital technologies in the Vaupés** Access to new technologies, especially electronic devices, is rapidly increasing in the villages in the Vaupés region and becoming part of everyday life. Although many remote villages still lack electricity, all the main villages and mission towns have been equipped with modern electronic technologies. In the nearest towns (e.g., Mitú, Colombia; São Gabriel da Cachoeira, Brazil), access to hourly internet is available and reasonably affordable.

In traveling between different isolated villages in the region, I have observed that it is very common for people to own an electronic device of some sort, ranging from a simple AM/FM radio to a laptop computer, even if it is not put to use in their everyday life (due to the availability of electricity). Many teenagers possess smartphones, which are generally used to listen to music, to text message, to play games, to take pictures and to make short videos they share with friends. USB storage devices seem to be particularly common for storing (nontraditional) music, short videos, and photos.<sup>6</sup>

This is not to say that the indigenous people in the Vaupés are wholly integrated with the digital technology era. Individuals who own a computer and/or a smartphone, for example, are either school teachers and/or work in the urban areas; however, access to such technologies is increasing among people of different age groups, particularly among the youth, who are fascinated by these new technologies. The advance of such electronic and digital technologies (especially television, DVD/CD players, and even laptop computers) into the indigenous communities in the region is inevitable. These new technologies bring with them the dominant language (Portuguese/Spanish) into new domains, such as the community and the speakers' homes. In view of these cultural changes, and considering the concern of community leaders regarding language and cultural loss (for example, it was reported that in the Desano communities in the Tiquié River there is no intergenerational transfer of the Desano language), it is important to address the need to incorporate the language to these new electronic and digital media, as has been undertaken with indigenous groups in other contexts (cf. Auld et al. 2012; Carew et al. 2015; Gawne 2015).

**2.4 The Desano people and access to electronic and digital technologies** Many Desanos are currently living in urban centers (for example, São Gabriel da Cachoeira and Mitú). Access to education is perhaps the main motivation for families to relocate

<sup>6</sup>When I make videos or take photos during my fieldwork, it is quite common for someone to come to me with a USB storage device and ask for a copy of the material I collected.

to urban areas. When living in urban areas, Desanos become exposed to electronic and digital technologies. All households will have a television, which is usually turned on most of the day, even when no one is watching it. When kids are not in school, they are usually at home watching cartoons, or other TV shows. It is common to see teenagers with smartphone devices, which they use for texting and playing video games. In urban towns, such as São Gabriel da Cachoeira, there are a few internet cafés, which are popular among teenagers and young adults for providing online gaming and access to social media.

During a language documentation workshop in São Sebastião do Umari, in 2013, the leader of the community (a Tukano whose mother is Desano) expressed the following concern: “now that we have electricity in our community, watching TV became our children’s favorite form of entertainment, and everything they watch is in Portuguese.” When I raised the idea of creating digital animation (cartoons) based on the narratives we have collected, community members embraced it enthusiastically.

Until recently, the main threat to the Desano language was Tukano, the dominant language in the community, and the lingua franca in the region. Now, Desano faces the dominance of Portuguese through new digital technologies. Thus, the project seeks to give Desano the opportunity to occupy a space in this rapidly changing environment where electronic and digital technologies are still novelties.

**3. Going digital: Development of language resources for Desano** Until recently, most of the language resources developed for the Desano communities have been in the form of printed storybooks and language primers based on materials collected in workshops done in the communities. Besides these materials, copies of DVDs with video recordings of cultural practices (e.g., dances and craft production) and CDs with audio files of short stories are distributed to the communities participating in the projects activities. Currently, a Desano digital dictionary is in a primary stage of development in a format that can be distributed on a CD-ROM. At the time of writing, the DLDP is focusing on technology that does not require or rely on the use of internet or other wireless technologies.

For the time being, the goal is to develop digital language materials, using contemporary media production technologies, involving community members in the creation process. This project is part of an interdisciplinary collaboration involving researchers, (undergraduate) students in film and animation, and members of the Desano communities, in an initiative to produce a collection of short digital animations based on Desano traditional narratives.

**3.1 The animation of traditional narratives** The project for the development of digital animation of Desano stories aims to create digital storytelling materials based on traditional narratives collected as part of the language documentation activities. The goal is that the project will foster the inclusion of the Desano language in the mainstream digital technology media, while promoting language maintenance and dissemination of cultural knowledge among youth and young adults, promoting a practice of communal or ‘viral’ (Nahon & Hemsley 2013:15) sharing of the animated videos.

The idea for the creation of digital animation emerged in 2014, during a language documentation workshop in San José de Viña. When exploring ideas for language materials, such as storybooks, one individual inquired about ‘claymation’ (a form of stop motion animation, Taylor 1996), something he had seen on TV in Acariquara (Colombia), as a possible vehicle to ‘captivate’ children’s attention and interest.

**3.1.1 The traditional stories** Several narratives have been recorded since the beginning of the activities to document the language in 2008; at the time, we did not have in mind using them for the purpose of producing animations. The narratives for this project were recorded in uncompressed WAV digital format using a Marantz PMD661 MKII digital recorder, with an Audio-Technica Pro 70 lavalier microphone. It is important that the stories being used in animation have excellent sound quality.

The narratives to be animated were chosen according to the following criteria: (1) short stories that are part of Desano oral traditions (e.g., hunting stories and anecdotes); (2) stories told by speakers from different villages, representing different Desano varieties; and, (3) stories that members of the group, and speakers who told the stories, have granted us permission to disseminate. All the stories to be animated are transcribed phonetically, and with the practical orthography; glossed morpheme-by-morpheme; and translated into Portuguese and English.

To date, five narratives have been animated and previewed in the communities, and here I focus on the first two completed. The first story, *The Hunter and the Monkey*, was told by Ercolino Alves, a sixty-year old male Desano speaker from the Santa Marta creek on the Brazilian side of the Papuri River, Brazil. The narrative is one minute and forty-five seconds in length. It consists of an anecdote about the speaker’s grandfather, Cândido, and his experience hunting for monkeys using a traditional blow-darting technique.

While walking in the forest, Cândido sees some monkeys on a tree—one of them is a big monkey, probably the senior male; the others are smaller monkeys. Cândido hides behind a tree quietly and gets his blowdart ready. He walks towards the monkeys, and shoots a dart at the big monkey. The poisoned dart hits the monkey’s ear and the monkey falls on the ground. Believing that he has killed the monkey, Cândido picks it up and carries it on his back; however, the poison was insufficient to kill the monkey. The monkey regains consciousness and bites Cândido’s buttocks. He throws the monkey to the ground, and the monkey tries to escape. Cândido grabs a piece of wood and hits the monkey on the head, killing it.

This folk tale form exhibits anecdotal characteristics, but within a broader parable structure. The speaker retells a story about an unusual incident that happened to his grandfather, providing details of the incident. It describes how his grandfather reacted to the event, and ends with a broader reflection on the incident and how it is allegorically instructive for future similar hunting engagements. The anecdote is relayed in the third person, and with numerous direct quotations.

The second story, *The Hunter and the Anteater*, was told by Luís Lana, a sixty-year old male Desano speaker from the Tiquié River in Brazil. It runs a minute and thirty-five seconds in length. This story describes a comical, fictional event. The hunter,

a *Hupda* man, goes hunting for an anteater. He tries to club the creature but the anteater seizes the hunter from behind, sinking his claws into the torso of the hunter. In order to escape from the anteater's big claws, the hunter sexually stimulates the anteater, and as the anteater climaxes, it releases him.

This second story differs from the first in form insofar as it is an apocryphal anecdote that concerns something that did not really happen. It is narrated in the third person, without direct quotation. The human character, victim of the anteater attack, is a *Hupda*. It is very common in anecdotes of this type—one in which the human character is the object of ridicule—for the human character to be someone from another neighboring language group. This anecdote involves humorous sexual reference based on a shared cultural knowledge about the anteater: “when pursued and cornered, [the anteater] tries to castrate the hunter with its sharp claws” (Reichel-Dolmatoff 1971:101).

Together these two short stories express a similar general theme: hunters must be careful with animals, as they may take revenge on their predators. Other short narratives have similar themes, including those with animals and birds (tortoise, jaguar, various birds, etc.). Some animals in these stories have apparent trickster characteristics, mirroring those found in the traditional stories of Native North American groups (e.g., the ‘coyote’ in many tales, Ramsey 1999). For example, in a collection of Desano tales with a tortoise as the main character (Silva & Matos 2014b), the tortoise is portrayed as evil-spirited, egotistical, and greedy.

Although many of these Desano tales have been used in children's storybooks, they are not stories for children alone. These stories are usually told and retold by adults to other adults, as they provide important cultural knowledge, including moral instructions and social identity (cf. Kroskrity 2012). According to Field (2013:92), traditional stories can “bring together two aspects of communicative competence: cultural knowledge in the form of social values and behavioral norms and expectations as well as traditional language.”

For this project, we also sought out materials that are representative of the different Desano varieties. Languages in the Vaupés are markers of people's identity (Jackson 1983:166), and at least for the Desano people, different dialects are also important markers of a person's sib. Thus, by producing a collection of digital animations based on narratives told by speakers from different Desano dialects, we intend to promote the different varieties of the language as spoken in different Desano communities, and avoid unintentionally giving a variety of the language more prestige.

**3.2 Animation development** The first two pilot animations were directed and produced by Wilson Silva, with animation work completed by Zachariah Bellucci and Isabel Marte, two undergraduate students studying film and digital animation at the Rochester Institute of Technology, in Rochester, New York.<sup>7</sup> They undertook the work during the Spring 2015 semester, with the goal that the animations would be

<sup>7</sup>As part of the Field Linguistics and Language Documentation Lab activities.



ready to preview to several Desano communities in the summer of the same year.<sup>8</sup> The short stories were selected from a collection of audio materials containing transcriptions and translations, and for which we had illustrations (i.e., drawings) produced by members of the Desano community in previous language workshops.

The first two animations were made with consent of the Desano people. However, because the students had not visited the field site, they used illustrations (i.e., drawings and paintings) previously produced in the context of earlier community workshops for inspiration about the artistic dimensions of their work. They also had available for consultation hundreds of photos and short videos illustrating the local environment (i.e., human characters, vegetation, rivers, creeks, villages, animals, etc.).

As the linguist working both in the field and advising the two students at RIT, I had two main tasks as director and executive producer. First, in the field, I worked closely with community members and Desano research assistants in transcribing and translating the narratives using ELAN (Wittenburg, Brugman, Russel, Klassmann & Sloetjes, 2006). It was important that the narratives were annotated in detail, including the full particulars of the characters in the stories and of the environment (scene) in which the events being narrated take place. All this information is used as a resource by the students creating the animations. Of course, there are questions that emerge which only a knowledgeable Desano speaker may be able to answer. These were addressed in the community workshop in which the animation sketches were screened in a preview format in June 2015.

Under my production supervision, the work undertaken by the students for creating the digital animations includes several activities. First, they study the English translation of the story and research the specific characters (animals, birds, Desano community members, etc.) identified in the particular story, render the characterization as accurate as possible, while also ensuring the characterization is adaptable to digital animation. The next step is to use ELAN to view the timing of each line of annotated story to determine the ideal number of different scenes. After determining the number of scenes, they create storyboards for each line of the text, and sketch the scenes. The students use Adobe Illustrator (a graphic design vector-based program) to create the digital ‘puppets’ (mock-ups) for each animation sequence, such as the characters and the background. Vector drawings of characters are drafted from multiple perspectives; these vector drawings and the background illustrations created with Adobe Illustrator are then animated using Adobe Flash. Finally, they edit the animation sequence in its entirety for beta (trial) viewing by Desano community members.

The preliminary beta versions of the first two animated stories were presented to community members during workshops in the communities in June 2015, and screened on approximately a dozen occasions to more than sixty people from different Desano communities. The goal of these initial screenings was for the Desano people, including the speakers who narrated the stories in the animation, to provide

<sup>8</sup>Each student worked on average ten hours per week for ten weeks, for a total of two hundred hours to create two animations.

feedback and suggest revisions for the final version of the animation. A second set of three beta animations was presented to Desano communities in June 2016.

**3.2.1 Community workshop: preparing materials for animation** One of the goals of this project is to promote community-based activities fostering the involvement (including training) of members of the Desano communities, especially teenagers and young adults in using digital technologies for creating language resources. The first workshop in which we included activities to produce materials to create digital animations took place in São Sebastião do Umari in June 2015. Desano speakers from nearby communities in the Tiquié River came together to discuss the ideas for the development of digital language materials for Desano.

Besides the general purpose of the workshop to promote language documentation training to community members, the goal of this particular workshop was twofold: (1) to present the prototype of the animation sketches created by students at the Rochester Institute of Technology and provide an opportunity for the community members to review these two videos; and (2) to work with community members in creating illustrations for stories to be animated at a future date.

The workshop provided a collaborative and inclusive environment for Desano speakers from different communities to actively participate in the discussion of the development of language materials which can be used uniformly by members of different communities—it is usually the case that when language materials are developed in one community, without the participation of members of other community, these materials are not well received by other Desanos, because it is seen as representing only the community where it was developed. Representatives of different communities expressed their concerns about the status of the language in their community and each shared the activities underway in their community to try to reverse the loss of the Desano language. More than 20 people from different Desano communities in the region participated in the workshop. These included language teachers and educators from São Gabriel da Cachoeira, representatives from FOIRN, Desano community representatives, and a linguist.

The workshop lasted four days, and was designed to cover activities involving production of texts for practicing the practical orthography; transcription of audio and video materials; using of digital technologies (audio- and video- recorders, computers) for language documentation; and adaptation of board-games (e.g., Mastermind, Clue, Scattergories).<sup>9</sup>

On the first day, six groups were formed based on the communities they represented. Each group had a Desano language teacher as a member. All the workshop activities (i.e., practice of practical orthography/production of texts, transcriptions of audio material, using digital audio- and video- recorders for language documentation) were conducted in groups. A separate group consisted of three Desano artists (illustrators) and a few children from the hosting community who were in charge of drawing the illustrations for selected short stories. These activities were undertaken

<sup>9</sup>The use of board games provides a novel way to collect naturally occurring speech (see for example Silva & AnderBois 2016).

during the day. The evenings were reserved for presentation of traditional dances, storytelling by senior participants, and other activities, including the screening of the animations.



**Figure 2.** Community workshop: Desano children presenting their illustrations of traditional stories, São Sebastião do Umari, 2015. Photo credit: Wilson Silva

**3.2.2 Revision and final product** The majority of the feedback provided by the Desano people concerned minor details regarding the representation of the animals in the stories (e.g., the size and shape of the monkey's tail, and the color of the anteater), and the position and movements of the characters in a few scenes. This feedback provided important insight in the interpretation of some of the verb serialization constructions in these stories. No major changes to the animations were suggested or demanded by the communities. Some teachers suggested the *Hunter and the Anteater* story ought not to be a topic for a school setting, although it was originally recounted in the presence of children.<sup>10</sup>

Each of the two short films were presented with subtitles in three versions: with the Desano practical orthography, with Portuguese/Spanish subtitles, and with no subtitles. When asked which version they preferred, however, community members overwhelmingly indicated that they would like them to appear with Desano subtitles only. The reasoning behind this choice, according to them, was that Desano subtitles would encourage people to learn the oral language, while simultaneously becoming

<sup>10</sup>Although the theme in the narrative is not a taboo, my impression is that teachers would prefer not having to talk about that specific story in the classroom.

familiar with its recently developed standardized writing system. The version with no subtitles was also liked by many (especially those who speak the language fluently). However, many people who do not speak the language well, but are also learning to write and read in Desano, found it helpful to see their orthography on the screen.

The first two videos were received enthusiastically, and community members requested the production of more videos. The final versions of the two stories are to be distributed in the Desano communities in DVD format. I expect that the people in the area will share these digital materials widely if they are available in a format that is easy to share. Thus, copies of these animated videos will also be distributed in a format that facilitates sharing, like MPEG-4 (or MP4), as it provides high quality videos compressed in a file size that can easily be shared using flash drives, and then uploaded to people's computers, including laptops and other devices. The DVD players owned by some Desanos (including the one in the community of São Sebastião do Umari) have a USB port on the front, making it easy to play media (MP4 and MP3) from a flash drive. This format is also the preferred format for sharing videos online.

The digital animation for the hunter and the monkey story can be seen here: <https://vimeo.com/160387346>.



**Figure 3.** Posters created by Isabel Marte and Zachariah Bellucci to advertise the first two Desano digital animations

**4. Discussion and conclusions** New technologies are changing the language ecologies in the indigenous communities in the Vaupés Region of northwest Amazonia.

New digital technologies offer a practical means to document, record, and digitize expressions of traditional cultures and disseminate them in provocative and creative ways. Digital animation responds to a strong desire in indigenous communities to preserve, revitalize, and promote cultural heritage in general, and language in particular, and to pass it on to subsequent generations. However, the documentation and digitization of living languages, which embodies both communal creativity and individual artistic expression, is highly complex.

From a linguistic perspective, the process of creating animation is helpful for understanding certain grammatical constructions, such as verb serialization—since the action and event expressed by such verb constructions need to be depicted visually in the animation. These animation materials are potentially of great value to curricular development for language revitalization activities and for the fostering of the use of the language among youth. This initiative recognizes the importance of engaging an endangered language such as Desano to increase access to electronic and (digital) media in remote communities. These Desano animations operate as an important enhancement to the body of existing printed language materials. One particular advantage of these digital materials is that they do not rely on internet access, and are not restricted to ‘viral’ sharing behaviors and technologies. As many households have TVs and DVD players, and as the animations can be easily copied and transferred to other media (e.g., to a flash memory drive, or to a computer), people can also watch them in their village settings.

Digital animation of traditional stories offers an entirely new way to connect with the younger generation of Desano speakers who regularly use these new technologies, especially computers. Animation stories can become an integral part of education in the schools in the Desano communities. In combination with cultural texts, animation can “motivate and teach students about language, society and culture” (Fukunaga 2006:206). The idea of merging traditional storytelling with rapidly developing digital tools for educational use is spreading globally (Yuksel et al. 2011). However, there has been little research or practice with respect to digital animation stories for endangered languages, such as Desano. Digital storytelling, via animation and narration of traditional stories, reinforces the spoken language, traditional knowledge and appeals to different age groups. By creating Desano-language visual texts that can be shared virally, using DVDs and flash drives (and possibly smart phones), we create a new access point for younger generations of Desano speakers.

Ethical considerations regarding dissemination and intended use of these language materials are decided in close consultation with the research team, Desano storytellers, and community members. Desano community members have already expressed their desire to use animation to introduce new themes, such as health education materials in their language. All of this supports and reinforces the value of Desano as a language of communication on par with Portuguese or Spanish, the only languages available in the local media.

The next step of this project is to provide training and capacity development for members of the Desano communities, especially teenagers and young adults, on using digital tools for creating animations. A second two-week-long workshop was



undertaken in São Gabriel da Cachoeira, Brazil, in June 2016, with support from the National Science Foundation.<sup>11</sup> This workshop was led by a RIT animation student (Isabel Marte), who worked with a group of three young Desano speakers (known in their respective communities as highly skilled illustrators). Each workshop participant received a computer and a digital drawing tablet.<sup>12</sup> The participants learned how to use digital drawing programs such as Microsoft Paint and Pencil 2D (a beginner animation program to draw frame by frame animation), as they were trained to create storyboards for the oral narratives they chose to illustrate. Finally, they learned how to use Windows Movie Maker to create digital storytelling materials.



**Figure 4.** Animation workshop in São Gabriel da Cachoeira, Brazil, June 2016, featuring (front row left to right) Gelison Paulo Aguiar, Germano Sampaio, Sérgio Massa, (back row left to right) Frank Matos, Wilson Silva (author), Isabel Marte. Photograph Credit: Benjamin N. Lawrance

By the conclusion of the intensive workshop, six new digital storytelling videos had been drafted in beta version (i.e., the combination of the oral narratives and the digital illustrations using the movie maker application).<sup>13</sup> These materials created by the Desano speakers will be used as the basis for the next short animated films. By enabling Desano participants to create these digital materials themselves via a

<sup>11</sup>This digital animation workshop was funded by a NSF Supplement Grant (BCS-1500755).

<sup>12</sup>Wacom Intuos Draw CTL490DW Digital Drawing and Graphics Tablet.

<sup>13</sup>Workshop participants met for six hours a day for twelve days, with a total of 72 hours to create six digital storytelling materials averaging four minute in length each.

coordinated technology transfer module such as a workshop, the hope is that these new skills will promote the active participation of members of the group from the very inception of the animation project to create products by them and for them.

There are numerous successful initiatives for creating digital resources to enhance digital literacies and promote digital inclusion (see for example Carew et al. 2015; Nicholas 2015). This initiative for the creation of Desano digital animation is a response to the strong desire in the communities to preserve, revitalize, and promote Desano cultural heritage, and to pass it on to succeeding generations, while adapting to this non-traditional environment that electronic and digital technologies bring to their communities.

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