
Pepa Kūlana

Ka 'ina Hana 'Ōiwi
a me ka
Waihona 'Ike Hakuhia

He Pū'ulu Ho'oholomua o ke Ka'ina Hana 'Ōiwi
A me ka Waihona 'Ike Hakuhia

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Pepa Kūlana Ka'ina Hana 'Ōiwi a Waihona 'Ike Hakuhia

Mana 'Ōlelo Hawai'i

Ka Mea Unuhi: 'Ika'aka Nāhuewai

Ka Mea Ho'oponopono: Kaleimomi Wai'oli

E ha'akuhi 'ia kēia pepa:

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Palapala Ho'okuleana

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SECTION 1

Ho'olauna



Learning E Hō Mai. Image by Sergio Garzon, 2019.

I.○

Ho‘olauna

“ ‘O ke aloha ka waihona ‘ike e launa ai me ka nohona.”

— na Olana Kaipo Ai¹

“ Aia ko kākou kuleana i loko o ka pilina. Na wai e kūkulu nei? ‘O ke kanaka Hawai‘i, ‘o ke kanaka Honua paha? ‘O ka pōhaku, ‘o ka minelala, pili pū ke kanaka me ka pōhaku. Na lāua i haku kēia papahana. ‘O nā mea a pau e pili ana i ke kanaka, ‘o ke kanaka, ‘o kona mau hewa, ‘o ka hakakino hunaola nō ho‘i kekahi e haku pū ‘ia i loko o ka pōhaku. Pono ke kanaka i ke kuapele, ‘o nā hunaola e haku ‘ia ai ka puna. He pono ka ‘ākoakoa o kākou me ka ‘uhane; inā ka‘awale na‘e a na ka ‘uhane kākou e ho‘one‘e, ‘a‘ohe pilina ‘ohana. ‘O ke kuleana kanaka ka ho‘omaopopo ‘ana mai, aia nō ka ‘ikehu e pa‘a ai ke akua i loko ou. Inā na‘e ‘a‘ohe ma laila, pehea e hiki ai ke pili i ka lani, ke pili ho‘i me

¹ “Aloha is the intelligence with which we meet life.”

kāu mea e haku nei? ‘O ka ‘ikepili i pa‘a, aia nō kekahi i loko ou, a ‘o ‘oe i loko o laila.”

— na Kekuhi Keali‘ikanaka‘oleohaililani²

“ ‘A‘ole ‘o ke kanaka ka wēlau a ‘o waena paha o ke kumu honua. He ‘i‘o maoli kēia mana‘o i nā kālaimana‘o ‘Ōiwi like ‘ole. He kahua pa‘a ke ala o ka na‘auao a me ka ‘ōlelo e ‘ike ‘ia nei ka pilina ‘ohana e pāhola aku ana i ka holoholona a me ka mea kanu, ka makani i ka pōhaku, ka mauna i ka moana. Pa‘a mai nei nā ‘ōlelo a me nā lōina i nā kaiāulu ‘Ōiwi i hiki ke kūkā kama‘ilio me ke ēwe kanaka ‘ole, e haku ‘ia ai ke au like o ke kūkā ‘ana ma nā mea ‘oko‘a i ke kino, ke ola, a me ka mo‘okū‘auhau.”

—na Lewis, Arista, Pechawis a me Kite³

He Kumuhana Kūkā E Kupu Mau Ana

He wahi ho‘omaka kēia pepa kuana no ke Ka‘ina Hana ‘Ōiwi⁴ (KH‘O) a me ka Waihona ‘ike Hakuhi⁵ (W‘IH) no ka po‘e e ake nei e haku a hana he W‘IK mai ke kuana‘ike kūpono e ho‘okele ‘ia nei e ka mana‘o ‘Ōiwi. He ki‘ina hana ko kēlā a me kēia kaiāulu ‘Ōiwi i nā nīnau a mākou e ui a‘e ai. ‘A‘ole kēia mea a mākou i kākau ai he pani i ke kūkulu a mālama ‘ana i ka pilina kāko‘o kekahi i kekahi me kekahi mau kaiāulu ‘Ōiwi. Eia na‘e, hāpai a‘e kēia palapala i kekahi mau mana‘o e no‘ono‘o ai ke komo i kēia mau kama‘ilio ‘ana ‘o ka ho‘omaka koho ‘ana i ke kuana‘ike ‘Ōiwi i ka haku ‘ana he waihona ‘ike hakuhi.

He ho‘ā‘o kēia wahi pepa kūlana e hō‘ili‘ili i nā ‘ano kama‘ilio like ‘ole no 20 mahina, no 20 kā‘ei hola, no ‘elua hālāwai ho‘ona‘auao, a ma waena ho‘i o kekahi mau po‘e ‘Ōiwi (a ‘Ōiwi ‘ole ho‘i) no nā

² “Our responsibility is in the relationship. Who is building them? Is it the kanaka or the human? The rock, the mineral, the rock and the human are engulfed. They birthed this program. Everything that comes with the kanaka—the human—his faults, his cellular structure, that gets folded in with the mineral. You need the volcanic activity, the structures that create the calcium. We have to interface with the spirit; if we disconnect and let the spirit just move us, we are not having a kinship. The human’s responsibility is to realize that the energy that makes up the god is in you somewhere. If it is not there, how is it possible to interface with sky, interface with the thing you are creating? The fact is that some of you is in it. And some of it is in you.”- Kekuhi Kealiikanakaoleohaililani

³ “Man is neither height nor centre of creation. This belief is core to many Indigenous epistemologies. It underpins ways of knowing and speaking that acknowledge kinship networks that extend to animal and plant, wind and rock, mountain and ocean. Indigenous communities worldwide have retained the languages and protocols that enable us to engage in dialogue with our non-human kin, creating mutually intelligible discourses across differences in material, vibrancy, and genealogy.”

—Lewis, Arista, Pechawis and Kite

⁴ Ka‘ina Hana ‘Ōiwi = Indigenous Protocol

⁵ Waihona ‘Ike Hakuhi = Artificial Intelligence

kaiāulu like 'ole i Aotearoa, Nū Hōlani, 'Amelika 'Ākau a me ka Pākīpika. 'O ke kia nō na'e, 'a'ole 'o ka ho'olōkahi 'ana he leo. Pa'a nō ka 'ike 'Ōiwi i kekahi mau 'āina a aupuni kiko'i a puni ka honua. Ho'ohuli aku kēia mau 'āina a mō'aukala like 'ole i nā kaiāulu 'oko'a a me ko lākou mau ka'ina hana 'Ōiwi i ke au o ka manawa. 'A'ohē "kuana'ike 'Ōiwi ho'okahi", a ho'omau a haku 'ia nā kālaikuhi'ike⁶ e ka ho'okumu 'ana o kekahi mau kaiāulu kiko'i i loko o kahi mau 'āina. Ma mua, he hopena ulūlu o ke kālaikuhi'ike a kālaikuhikanaka⁷ ko ka lōina na'auao i ho'ā'o e na'i a ho'ohilimia i ka lōina 'Ōiwi, a ho'ohāiki 'ia ke 'ano o ka mana'o a kuana'ike 'Ōiwi. 'O ko mākou pahuhopu ke kālele 'ana i nā 'ōnaehana 'ike 'Ōiwi like 'ole a me ke 'ano o ka 'enehana e hāpai i ka nīnau 'o ka W'IH. Ma muli o ia palena, a ma kahi o ka ho'oku'iku'i 'ana he mana'o lōkahi, he hō'ili'ili kēia pepa kūlana o kēlā 'ano kēia 'ano o ka mo'okalaleo: 'o nā mana'o ho'okele hakulau 'oe, 'o ka 'atikala akeakamai 'oe, 'o ka wehewehena o ka mana 'enehana mua 'oe, a 'o ka poema 'oe. I ko mākou mana'o, he 'oloke'a kūpono maoli nā leo a kuana'ike 'oko'a i ka 'oia'i'o he pae kinohi maoli nō kēia kama'ilio 'ana, a he hō'ike i ka mea heluhelu no nā kuana'ike i kupu mai i loko o nā hālāwai ho'ona'auao.

Makemake pū mākou e ho'ākāka aku, 'a'ole mākou e ho'ā'o nei e lilo kā mākou 'o ia ka 'ōlelo no ia mau kaiāulu, 'a'ole ho'i he 'ōlelo laulā na ka po'e 'Ōiwi. Loa'a nā mana'o 'Ōiwi o kēlā 'ano kēia 'ano, ma waena o ka lāhui a ma loko ho'i o ka po'e. 'A'ole he kū 'ana no ha'i, he paipai nō na'e i ke kūkā 'ana no nā kuana'ike a pau.

'O ka hapa nui o ka po'e e komo pū ana i kēia mau papahana KH'O W'IH, aia ma kekahi ala e hui pū ai ka mo'omeheu a me ka 'enehana hou. 'O ke kūkā 'ana no ke KH'O W'IH, he kūikawā no nā mō'aukala lō'ihī loa o ka no'ono'o 'ana, a ua komo nā mana'o o nā kānaka i loko o nā hālāwai ho'ona'auao, a no laila i kupu a ha'i nui 'ia mai ai nā mō'aukala mai kinohi. 'O kekahi pahu ho'omaka, ko Angie Abdilla mana'o "Indigenous Knowledge Systems and Pattern Thinking: An Expanded Analysis of the First Indigenous Robotics Prototype Workshop," he pepa i kākau pū 'ia me ha'i a he kālailai i ka ho'oili, ho'omaopopo a ho'oka'a'ike 'ana aku i ka 'ike ku'una a 'ike 'Ōiwi a pehea i pili ai i ke ka'ina huli hā'ina⁸ o ka lopako.⁹ He pahu ho'omaka nō ho'i 'o "Making Kin with the Machines," he pepa i kākau pū 'ia na Jason Edward Lewis, Kauka Noelani Arista, Archer Pechawis a me Suzanne Kite ma ka makahiki 2018, na ia pepa e hāpai ana i ka mana'o 'o ka lu'u 'ana i loko o nā lōina 'ohana 'Ōiwi e ho'āno hou i ke kālaikuhi'ike a me ke kālaikuhikanaka o ke kūkulu 'ana i ka 'ōnaehana W'IH.¹⁰ E hāpai 'ia iho ana nā pahu ho'omaka 'ē a'e ma lalo iho nei.

⁶ kālaikuhi'ike = epistemology

⁷ kālaikuhikanaka = ontology

⁸ ke ka'ina huli hā'ina = algorithm

⁹ Abdilla, A. and Fitch, R. (2017). "FCJ-209 Indigenous Knowledge Systems and Pattern Thinking: An Expanded Analysis of the First Indigenous Robotics Prototype Workshop," *The Fibreculture Journal* 28. <twentyeight.fibreculturejournal.

¹⁰ Lewis, et al.

‘O ke kuleana kōkī o mākou, ‘o ka hō‘ihi, ke komo aku a komo mai o nā mana‘o kekahi i kekahi i loko o ko kākou mau kaiāulu. No mākou ke kuleana mua, a he wahi manawa kēia pepa kūlana i loko o ke kūkā ‘ana i makemake ‘ia, a e kūpale, loiloi, nīele, a paio nui ‘ia ana i loko o ke au o ka manawa, he ho‘ololi a he liliuwe.

No ke Aha ka Waihona ‘Ike Hakuhiā?

Ke lilo hikiwawe loa nei ka ‘ōnaehana Waihona ‘Ike Hakuhiā he ‘enehana kahua, pa‘a pū me ka uila a me ka pūnaewe. E pā ana ka hapanui o ka nohona o ka nui po‘e:

E like me ka pā loli nui ‘ana o Kanakā a me ka honua i ke ka‘aahi, ka “industrial revolution” a me ka pūnaewe, he pā like loa ana paha ko ka W‘IH. A, e like me ka holomua o ka W‘IH a laha a ma‘amau loa, ‘o kona kuleana, ‘o ka hiki, nā mana‘o kūpono a me ka ho‘okele waiwai, pēlā ana ka mana‘o ‘ana i ke kia‘i a me ke kū kānāwai ‘ana.¹¹

No ka mō‘aukala lō‘ihi o ka ‘enehana hou e pā ‘ino ana ka po‘e ‘Ōiwi,¹² he ko‘iko‘i maoli nō ka hui pū ‘ana me kēia au loli o ka ‘enehana ma ka wikiwiki loa a me ka nui loa i hiki me ka mana‘o e komo i ka ho‘omohala ‘ana i ke ala kūpono iā kākou.

‘Ikea i waena o ke kenekulia 21, ‘o ka ho‘ohana kūpono ‘ia o ka W‘IH a me ka ‘oloke‘a kūpono i ho‘ohana ‘ia e nā mea haku, he kūkā e kama‘ilio ākea ‘ia ana. E like me kā kekahi o mākou ma kahi ‘ē a‘e,¹³ ua hopohopo mākou i ke kālaikuhi‘ike Haole nāna kēia mau W‘IH, he palena iki ko lākou i ka no‘ono‘o, ke kūkulu mana‘o, a me ka ‘ōlelo e pā maika‘i wale ai nō nā kālaikuhikanaka e haku ‘ia ana e nā hanauna e hiki mai ana o ka ‘ōnaehana hana ha‘ina.¹⁴ Inā ma ke kuana‘ike Haole wale nō ke ala e no‘ono‘o ai kākou no kēia mau ‘ōnaehana, ‘a‘ole ana e ‘apo piha i ka hiki i ia mau ‘ōnaehana. Ma ka ‘oi loa, ua hiki maoli nō paha ke kau ka pā‘ewa‘ewa a me ka ho‘okae i pa‘a iā kākou. Ma ka ‘ino loa, ua hiki i ka pili ke like me ka haku i kāna kauā.

Eia kākou nei ma kinohi o kekahi pahū ‘ana o ka ho‘omohala ‘enehana. ‘O kēia ka manawa e kūkā ‘ia kēia mau kumuhana, i ka wā ho‘i e akāka nei ke kinona o ka W‘IH, a ma mua na‘e o ka paepae ‘ia o ke kahua. Ua ho‘olaha aku nei nā moku‘āina, ‘ahahuina, hui aupuni/uku o Montreal, Toronto, ka EU a pēlā aku i nā kauoha a me nā mo‘omana‘o no ka mīkini kūpono a me nā mana‘o kūpono no ke kūkulu ‘ōnaehana W‘IH

¹¹ Like the way in which railroads, the industrial revolution, and the Internet profoundly changed Canada and the world, AI is very likely to be transformative. And, as AI continues to advance and become more commonplace, its accountability, accessibility (costs, digital literacy), and ethical implications, in addition to economic, security and legal aspects may also have to be considered.

¹² Diamond, J. (2017). *Guns, Germs, and Steel: The Fates of Human Societies*. WW Norton.

¹³ Lewis et al. and Fox Harrell, D. *Phantasmal Media* (2013).

¹⁴ See also previous critiques such as Terry Winograd and Fernando Flores, (1987). *Understanding Computers and Cognition: A New Foundation for Design*.

'ana, (Montreal Declaration; Toronto Declaration; Declaration of Cooperation on Artificial Intelligence).¹⁵ Eia mau nō, koi 'ia ka ho'omaka koho 'ana o ke ki'ina hana 'Ōiwi i ke kanaka ma mua o nā mea a pau. I la'ana, 'o ka pahuhopu o ka Institute of Electrical and Electronics Engineers' ke ola kino maika'i 'ana i ka ho'omohala W'IH (ka 'oloke'a kūpono). A hiki i kēia, 'a'ohē paio 'ana o ia mau ho'ā'o i ka mana'o kanaka kōkī¹⁶ o ka 'epekeka a 'enehana Haole, a no laila 'a'ohē o lākou hāpai 'ana i nā mana'o 'Ōiwi o nēia mau 'enehana hou. Mana'o mākou, 'o ka hāpai 'ana i kēia mau 'ōnaehana 'ike i ke kūkā W'IH, e hāpai ana ke kaiāulu i nā mea i pono loa ai ke ka'akālai no nā paio i kēia māhele.

Nui nā kālaikuhi 'ike 'Ōiwi hō'ole i ka mana'o kōkī kanaka.¹⁷ Hō'ike nui loa ka 'enehana o kēia mau au mana'o 'ana o ka manawa i kūkulu 'ia ma ka lōina a me ke ki'ina hana o ka mauō kanaka a me ka mauō 'āina i loko o ko kākou mau mo'omeheu, e like me ke kālai'āina, mālama 'āina, a me ke kele moana. Ma ka ho'ononiakahi 'ana i nā mīkini hou ma ia mana'o, wehe 'ia a'e nā mea hou i hiki ke ho'omohala pilina ma ke kahua o ka hō'ihī kekahi i kekahi a me ke kākō'o.

No ke Aha ka Loina?

'Ike laulā 'ia ka lōina i nā pō'aiapili 'Ōiwi, he ka'ina hana i ka ho'omaka, ka ho'omau, a me ka ho'oliliuewe 'ana i ka pilina. Hiki ke pili me nā kānaka 'ē a'e, a ua hiki pū i nā pilina holoholona, pōhaku, a me ka makani.

'Ikea pū ka lōina, he ka'ina hana kiko'i me ka lawena i kekahi hana:

Ua loa'a ka lōina ma ke 'ano he pae o ka lawena e ho'ohana 'ia e ke kanaka e hō'ihī aku kekahi i kekahi. Pili ka hana mo'omeheu i ka lōina, mo'okalaleo a me ka lawena o kekahi lāhui kiko'i a me ke 'ano e ho'okō 'ia ai ka 'oihana. Pili pū nō ho'i i ka lōina a me ke ki'ina hana e ho'ohana 'ia e alaka'i i ka lawe 'ia 'ana o ka 'ike ku'una, a pēia pū ke ala e ho'ohana, ho'opa'a a a'o 'ia ai ia 'ike ku'una.¹⁸

Ua kupu mai ka lāhui 'Ōiwi mai kekahi lōina kiko'i: 'o ka hana a ma'amau 'ana o kekahi hana, a i ke au o ka manawa, lilo ia hana he ma'amau kūpono. Pa'a loa iho kēia mau pono, lōina, a me ka ho'omana i kekahi pilina noho like i ka 'āina pono'i i

¹⁵ Amnesty International. (2018). The Toronto Declaration: Protecting the right to equality and non-discrimination in machine learning systems. <[accessnow.org/cms/assets/uploads/2018/08/The-Toronto-Declaration_ENG_08-2018.pdf](https://www.accessnow.org/cms/assets/uploads/2018/08/The-Toronto-Declaration_ENG_08-2018.pdf)>; Université de Montréal. (2018). The Montreal Declaration for responsible AI development. <montrealdeclaration-responsibleai.com/the-declaration>. Commission on AI. (2018). Declaration: Cooperation on artificial intelligence.

¹⁶ mana'o kanaka kōkī = anthropocentrism

¹⁷ Lewis et al.

¹⁸ Protocols exist as standards of behaviour used by people to show respect to one another. Cultural protocol refers to the customs, lore and codes of behaviour of a particular cultural group and a way of conducting business. It also refers to the protocols and procedures used to guide the observance of traditional knowledge and practices, including how traditional knowledge is used, recorded and disseminated.

ulu a'ela ia mau loina mo'omeheu 'Ōiwi.¹⁹

He ko'iko'i nō ke a'o, hahai, a maopopo 'ana o ka loina kūpono i nā hanana 'Ōiwi, he pa'alula, 'a'ole paha. Ua ho'olālā nā lāhui a pēia nā kaiāulu i ko lākou mau loina pono'i i welo mai kahi kālaikuhī'ike mai o ke kaiāulu nāna e ho'ohana ana. Pāhola ka loina i nā hanana like 'ole; 'o ka loina 'aha 'oe, 'o ka loina pilina kupuna i ka mo'opuna 'oe.

'O ke kumumana'o i ho'oholo 'ia ma nā hālāwai Ka'ina Hana 'Ōiwi a Waihona 'Ike Hakuhiā, 'o ia ho'i ka loiloī, kālailai, a makawalu pono 'ana i kā kākou pili me ka W'IH. 'O ka mea kiko'i, ua hāpai 'ia ka nīnau, e 'ae 'ia paha ka W'IH i ko kākou mau kīpuka a pilina pono'i, a inā 'ae, pehea e ho'ononiakahi 'ia ai a puni kākou. Hiki i ko kākou mau ka'ina hana loina 'Ōiwi ke kuhī aku i kahi e kūkulu 'ia ai ke kuana'ike māhuahua i kā kākou mau pilina me nā 'ōnaehana W'IH, a ua hiki ke lilo he mana'o ho'okele no ka mea kūkulu W'IH.²⁰ I loko nō o ka mana'o o ka po'e e kūkulu ana he pono hana, he kākō'o ho'i ia mau loina i ka pono pilina e komo ai lākou.

He mau mana'o pū ko ka loina no ka helu lolouila a me ka 'epekema i pono ai ma ka makahi'o 'ana ma waena o nā ma'i'o mēkia. I nā hualekikona helu lolouila,²¹ he pili ka loina i kekahi pae e lula ana i ka ho'ononiakahi 'ana i nā 'enehana kiko'i...[e] ho'okumu he mau mea e pono ai e 'aelike 'ia ai ka pae kūpono o ka hana.^{22 23} He pono ka loina i nā papa o ka helu lolouila e 'ae 'ia ai ka lako polokalamu e ho'olauka'i kekahi i kekahi a ho'one'e i ka 'ikepili a puni ka pūnaewe.

Kūkulu 'ia ka loina helu lolouila e nā papahana like 'ole, a pēia pū nā 'ano mahele aupuni o kēlā 'ano kēia 'ano, 'o nā 'oihana pono'i a pēia ko nā 'āina like 'ole. He 'ano wehewehe - eia ka hana e ho'oka'a'ike ma waena o X me Y - a he 'ano kuhikuhī - eia ka lawena a mākou e paipai nei a me nā loina e kia'i 'ia ai. Ma ke 'ano kuhikuhī e 'ike akāka ai ke ala e pa'a ai nā kuhī wale i nā loina, a me ka lawena 'kūpono' he 'ikepili paha, nā 'ano hana kūpono, a me ka mea e 'ike 'ia he ho'oka'a'ike maika'i.

Ma ka pō'aiapili 'epekema, pili laulā ka loina i ka wehewehe li'ili'i 'ana aku i ka hana e ho'okolohua ai. I la'ana, i ke kālaimeaoa he helu kiko'i e pono ai ka lātoma, 'a'ole na'e he pono e pa'a ai ka lātoma. Hāpai ka hana e kūkulu ana he loina no ka lawelawe 'ana i ka 'a'a'a hunaola lolo no ka noi'i lolo, i ka mana'o Maori tikanga, he hāpai i kekahi kia kūpono kaiāulu e haku 'ia ai ka loina hou e hui pū 'ia ai ka 'ike ku'una me ka noi'i 'oi kelakela.²⁴

¹⁹ Aboriginal societies developed through a custodial ethic: the repetition of an action such as that, gradually over time, the ethic becomes the norm. These rights, rituals and customs are firmly rooted by a deep, symbiotic relationship to Country itself and are the basis of Aboriginal cultural practices.

²⁰ Lewis et al.

²² "protocols refer to standards governing the implementation on specific technologies... [to] establish points necessary to enact an agreed upon standard of action ... vetted out between negotiating parties and then materialized in the real world."

²³ Lewis et al.

²⁴ Cheung, M. J., Gibbons, H. M., Dragunow, M., & Faull, R. L. (2007). "Tikanga in the Laboratory: Engaging Safe Practice," *MAI Review*, 1, pp. 1-7.

No ka KH'Ō WH'I, hoihoi mākou i ke kilo 'ana i ke kuana'ike e hakuhia ai nā kino hou o ka loina no ke kūkulu a me ka hana 'ana me ka WH'I. E haku 'ia ka WH'I me nā loina pūli'uli'u e kama'ilio kekahi me kekahi: 'o ka pahuhopu 'oia'i 'o ka ho'omaopopo 'ana i nā loina mo'omeheu i noi'i mua 'ia, e ho'okino me ka mana'o i ka loina a me nā kauoha e kōkua a kākō'o ai i ko kākou mau kaiāulu, a e loiloi pono pū 'ia ke 'ano o ka pilina a mākou e ho'olele ai i ka honua.

Iā Hawai'i?

He ko'iko'i i ka loina 'Ōiwi ke kia 'ana i ka wahi pana. No kekahi mau kumu i koho ai mākou iā Hawai'i 'o kahi no ka hālāwai ho'ona'auao Ka'ina Hana 'Ōiwi a Waihona 'Ike Hakuhia.

Ka Po'e

I loko o ka pepa 'o "Making Kin with the Machines" he pepa mai kekahi pūka'ina o nā pāpā'ōlelo na nā polopeka 'o Arista lāua 'o Lewis. He Kanaka Maoli 'o Arista no O'ahu a he polopeka hope Mō'aūkala Hawai'i ma ke Kulanui o Hawai'i ma Mānoa. He lālā ho'i 'o Lewis na ke Kanaka Maoli, hānai 'ia aku, a mai ka makahiki 2014, e makahi'o ana i ka ho'i i ka mo'omeheu Hawai'i. Ua hana pū lāua ma kekahi hālāwai ho'ona'auao pā'ani wikiō i Honolulu na ka pū'ulu i alaka'i 'ia e Lewis, 'o ka Initiative for Indigenous Futures, a he kumuhana kūkā ia no kekahi wā mai nā 'ano e ho'ohana 'ia ai ka 'enehana kikoho'e e nā Kānaka Maoli no ka hō'ike mo'omeheu 'ana. I ka wā i kāhea 'ia ai no ka ho'okūkū pepa 'o Resisting Reduction i puka maila 'o "Making Kin with the Machines." Ho'opane'e akula 'o Arista iā Lewis a hāpai akula he pō'aiapili e hō'ike 'ia ai kekahi o nā mana'o e pili ana i ke kuana'ike Hawai'i e no'ono'o 'ia ai ka 'enehana.

Ma ke kūkala 'ana o CIFAR i ka ho'okūkū moku'āina o ka honua o ke kaiāulu W'IH, 'o nā lima kōkua 'elua i hāpai 'ia maila, 'o Arista lāua 'o Kauka 'Ōiwi Parker Jones. He Kanaka Maoli pū 'o Parker Jones, a ua hānau a hānai 'ia i ka mokupuni o Hawai'i ma kona 'ano he hanauna mua o nā 'ohana e komo i ke kula kaia'ōlelo. E like me ko Arista lāua 'o Lewis hoihoi i ka lawelawe 'ia 'ana o ka mo'omeheu Hawai'i i ke ki'ina hana helu lolouila, pēia pū ka hoihoi 'o Parker Jones. I loko o ka pilina o nā mea ho'okumu 'ekolu iā Hawai'i, ua mana'o 'ia 'o Hawai'i kahi hekau e pa'a ai kēia kūkā 'ana, a ua hiki ke ho'olauka' i nā hālāwai ho'ona'auao i loko o kekahi wā pōkole.

Ke Kahua Mo'omeheu

Hele a hua nā mele ko'ihonua Hawai'i he pilina wehe 'ole ma waena o ka home Hawai'i a me ka hanauna noho papa o ka po'e Hawai'i.^{25 26} He hohonu a ākea nui nō kēia pilina, e pa'a ai nā Kānaka Maoli i kekahi 'upena o nā pilina e pahola aku ana i nā kini o ka 'āina o ka pae 'āina o Hawai'i a pēia aku i ka wā iō kikilo mai.

²⁵ "inextricable connection between island home and successive generations of island people."

²⁶ Arista, N. (2019). *The Kingdom and the Republic: Sovereign Hawai'i and the Early United States*. Philadelphia: University of Pennsylvania Press, p. 17.

Ua mana'o mākou ma ke kuana'ike Kanaka Maoli i lawe 'ia mai ai ka 'ikepili i hiki ke no'ono'o i kā kākou pilina i ka 'enehana ma ka laulā, a i ka W'IH me ke kiko'i:

Hō'ike akāka ka lolina Hawai'i i ka pilina wehe 'ole ma waena o ka honua a me ke kanaka. I laila e pono ai ke kuana'ike Kanaka Maoli 'o ke koho i ka nui kānaka, 'a'ole i ka ho'okahi, he hō'ike i nā la'ana, pāheona, a me nā mea kūpono, ma o ka ho'omoemoeā, haku, a kūkulu 'ana i nā pilina ma waena o nā kānaka a me ka W'IH.^{27 28}

I Hawai'i, 'a'ole nui ka piliwi 'ia o ke kuana'ike koloniao e mana'o ana 'o ka po'e 'Ōiwi he po'e makakumu a he hiki 'ole ke kākō'o i ke kūkulu 'ana i ka 'enehana 'hou'. Mālama ka mo'omeheu Hawai'i i kekahi ho'oka'a'ike nui 'ana aku no ka haku hou 'ana he mole no kekahi mō'aūkala o ka makahi'o a ho'okolohua 'ana o ka Hawai'i. No ka pa'a 'ana o kēia mākau ma ke 'ano he po'e haku, 'ae 'ia mai ana nā kūkā 'ana i Hawai'i no ka huina o nā ala 'o ka 'enehana a me ka mo'omeheu 'Ōiwi mai kinohi mai a mai kekahi kahua pa'a me ka mākaukau 'enehana.

He mea nui nō ho'i ka nui o ke kālena o ka haku a 'enekini polokalamu 'ana i ka honua, a pēia pū nā kānaka haku i 'ōlelo Hawai'i a lawe mai i ka 'ike i loko o ka haku polokalamu 'ana. Kākō'o 'ia kēia e kekahi pū'ulu haku mau e kia ana i ka haku 'ana i nā 'enehana hou ma luna o ke kahua o ka 'ike ku'una a me ke kia i ka haku mauō 'ana no ka nohona mokupuni.

Ka Hō'ike Honua

Ua ho'okō ka po'e ho'olauka'i mai kinohi mai i ka nui o nā 'elele mai nā lāhui like 'ole o ka honua. Aia 'o Hawai'i ma waena konu o ka Pākīpika, a 'ike 'ia e ka po'e 'Ōiwi he mea ho'olōkahi o nā kaiāulu 'oko'a. Aia nā mokupuni ma waena o Aotearoa, Nū Hōlani a me nā lālā o 'Amelika 'Ākau, a he hō'ōia 'ana, 'a'ole e paupauho ka po'e e lele ana mai ka 'ākau a hema paha ma ka lele loa 'ana.

Po'omana'o

I ke au o ka hālāwai ho'ona'auao mua, ua pua'i mana'o nui ka po'e i ka pane 'ana i ka nīnau alaka'i o ka papahana: mai ke kuana'ike 'Ōiwi, pehea ka pilina a kākou me ka W'IH? Mai loko aku o nā kama'ilio 'ana i puka maila 'elima po'omana'o:

Ke Ea o ka Lako Pa'a a Lako Polokalamu

E lula ana i ka 'ōnaehana W'IH a kākou e ho'ohana ana i mea e hilina'i ai iā lākou i ke kākō'o 'ana mai i ka ho'okō i nā kuleana o ko kākou mau kaiāulu.

²⁷ Hawaiian custom and practice make clear that humans are inextricably tied to the earth and one another. Kanaka maoli ontologies that privilege multiplicity over singularity supply useful and appropriate models, aesthetics, and ethics through which imagining, creating and developing beneficial relationships among humans and AI is made pono (correct, harmonious, balanced, beneficial).

²⁸ Lewis, et al.

Pehea e Kūkulu Kūpono aku ai

‘O ka haku a kūkulu ‘ana i ka ‘ōnaehana W‘IH me ka hō‘ike ‘ana i ko kākou mau mana‘o a me ka ‘ohana ‘ana i nā kino kanaka ‘ole a pēia ka pilina hō‘ihi me lākou.

Ka ‘Ōlelo, ka ‘Āina, a me ka Mo‘omeheu

‘O ka hō‘oia ‘ana i ka maopopo a hō‘ihi i ka panalā‘au– a ‘o ka ‘ōlelo a me ka mo‘omeheu e kupa mai ana mai nā panalā‘au kiko‘ī– e kūkulu ‘ia i ke kahua o ka ‘ōnaehana W‘IH i mea e kōkua ai i ka mālama ‘ana ma kahi o ka hana ‘ino ‘ana.

He Loia Waiwai ka Loia Pāheona

‘O ka hō‘oia ‘ana i ke kuleana o ka pāheona i loko o ka haku a ka‘analike ‘ana i ka ‘ike i nā kaiāulu ‘Ōiwi, a me ka pono o kēia ‘ano papahana e ‘ae ai iā mākou e no‘ono‘o no ka liliuewe ‘ana o ka ‘ōnaehana W‘IH, a ma ka mana‘o e maopopo a e ho‘okomo ka po‘e kūkulu i ia mau loia ‘Ōiwi.

W‘IH ma ke ‘ano he Kāko‘o

‘O ka ‘imi ‘ana i ke kahua o waena o ka Blade Runner (he kauā ka W‘IH) a me ka *Terminator* (he ali‘i ‘ino ka W‘IH), a i kahi e ‘āwili ‘ia ai ka pilina ma waena o ka W‘IH a me ke kanaka me ke kāko‘o a me ke aloha.

Hō‘ulu‘ulu ‘ia o ke Kāko‘o

He 12 kāko‘o ‘ana o kēia pepa kūlana, a ‘o nā mea a pau e pane ana i nā po‘omana‘o ma kekahi ‘ano a pēia pū ka ho‘ākea ‘ana i ka pae o ka no‘ono‘o hou ‘ana aku. I like me ka mea i hāpai ‘ia ma kinohi o kēia Ho‘olauna, i loko o ka hō‘oia a nanalu ‘ana o ka ma‘i‘o mo‘omō‘ali o nā lālā, ka nui kuana‘ike o ka po‘e ‘Ōiwi a ‘Ōiwi ‘ole e komo ana, a me ka waiwai o ko kākou mau mo‘omeheu ma luna o ka ho‘oka‘a‘ike ‘ana aku, aia nō nā ‘ano kāko‘o like ‘ole mai nā ‘oloke‘a haku aku i nā pepa kālailai i nā pāheona i ka wehewehe ‘ana i nā mana ‘enehana i ka poema. ‘O ko mākou mana‘o‘i‘o ka pono o nā mea pohihihi, me ka W‘IH lā, i ka no‘ono‘o ‘ana i nā papa o ka pilina i like me ka nohona kanaka pono‘ī.

Pā nui ka hana i nā kāko‘o ‘ana mai. I ka hālāwai ho‘ona‘auao, ua loa‘a nā kama‘ilio no ke kuleana a me ka ho‘ōla hou ‘ia o ka ‘ike ku‘una i ka ‘ōnaehana ‘enehana; ka pono ho‘i o ke kūpale ‘ana i ka ‘ike ku‘una me ka hō‘ike pū i ka hiki ke a‘o a ha‘i aku i ka ‘oloke‘a o kēia mau ‘ōnaehana; ‘o ke ko‘iko‘i ho‘i o ka ‘ōlelo ma nā ‘ano ‘elua he mea ‘ike a he paena o ka ka‘ina hana helu lolouila; ‘o ka mole ‘o ke kelekoli i ka haku ‘ana i nā ‘oloke‘a no ka maopopo a me ka ho‘oka‘a‘ike; ‘o ka ho‘ohana ‘ia o ka helu lolouila ma ke ‘ano he no‘eau mo‘omeheu i like me ka iwi a pūpū paha; ‘o ka mō‘aukala o ke kaiāulu ‘Ōiwi a me ka pili hou ‘ana aku me ka ‘enehana hou; ‘o ka wae ‘ana i nā mana‘o ‘o ke akamai i huli kua i ka pilina na‘au a kālai kanaka me ka honua; ke ‘ano kuluma o ka ‘ōnaehana ‘enehana; ‘o ka ho‘opāpā a hō‘oia ‘ana i ka mana‘o ‘o ka ho‘ohana ‘ia o nā pono hana loa e wāwahi i kona hale iho; ²⁹ ‘o ka pā‘ewa‘ewa mo‘omeheu e ‘āwili

²⁹ Lorde, A. (1984). *Sister outsider: Essays and speeches*. Berkeley, CA: Crossing Press, p. 91

pū 'ia i loko kēia mau 'ōnaehana; 'o ke kuhi 'ana i waena o ka 'ōnaehana W'IH i kūkulu 'ia na ke kaiāulu 'Ōiwi a no ke kaiāulu 'Ōiwi; 'o nā hana 'ino paha o ka W'IH / nā 'enehana i ke kaiāulu i ho'okolonaio hewa 'ia no nā kenekulia; a me ka pono e no'ono'o no ka 'ōnaehana W'IH i ke kuana'ike o ko kākou mau mo'omeheu pono'i.

Ho'olālā 'ia kēia pepa kūlana i loko o 'ehā mahele: Guidelines, Contexts, Vignettes and Prototypes. 'a'ole i ka'awale a'e kēia wae'anona 'ana, 'a'ole i pa'a. Loiloi pono'i nā mea kākō'o a pau i ke kuana'ike "Western"³⁰ no ke kūkulu 'enehana, a ho'ohana 'ia nā mō'aukala like 'o ka ho'okolonaio a hana hewa 'ia o nā kaiāulu 'Ōiwi e ka Haole, a ho'okahua iā lākou iho me ke kālāi kuhi 'ike a me ke ka'ina hana o nā mo'omeheu 'Ōiwi kiko'i. Ua koho akula mākou i kēia papahana no kona hō'ike 'ana i ke ala i ho'olauka'i ai i kēia mau pū'ulu ma ka hui 'alua 'ana o ka hālāwai ho'ona'auao W'IH, a no laila e hō'ike pū 'ia ai ka 'ike i nā mahele kaiāulu o ke kūkū 'ana. Hō'ike pū 'ia he kānalua ma'amau e 'ō'ili ana i ke au o nā hālāwai, a pēia pū i ke kākau 'ana i kēia mau 'ōlelo: e hō'ike ahuwale kākou i ka nāna ka 'ōlelo a me nā pō'aiapili i kama'ilio 'ia ai ia 'ōlelo.

Wehe aku mākou me "Guidelines for Indigenous-centered AI Design,." I mea kēia mau mana'o ho'okele no kekahi pū'ulu e makemake ana e kūkulu i waihona 'ike hakuhia i nā ala i kūpono me ke kuleana, 'o ia kūpono he pili i nā kuana'ike 'Ōiwi a me ka mana'o 'o ka nohona maika'i. Kū nō ua mau mana'o ho'okele lā i kekahi hō'ulu'ulu o nā kuana'ike o ka po'e komo, a 'o ka hō'ike 'ana i nā kānalua a me nā moemoeā i kupu a'ela i nā kama'ilio 'ana o ka hālāwai a me ke kākau pū 'ana. Hāpai lākou i kekahi mau a'oa'o i hiki ke loa'a, no ke ala e no'ono'o hou 'ia aku ai ke 'ano o ka 'ōnaehana W'IH— a pēia pū nā 'enehana helu lolouila 'ē a'e— me ke kuana'ike e no'ono'o 'ia ke kūpono, 'o ia mau kuana'ike i no'ono'o like 'ia e nā mo'omeheu 'Ōiwi like 'ole. E like kā mākou e hāpai mau ana i ke au o kēia pepa kūlana, 'a'ole ia mau mana'o ho'oleke he pani no ka 'ākoakoa nui 'ana o nā kaiāulu 'Ōiwi kiko'i e maopopo ke ala keu o ka maika'i e kūkulu 'ia ai ka 'enehana e hāpai 'ia ai ka ho'omaka koho e ho'ohana ana i nā ki'ina hana i hō'ike 'ia ka makemake ma ka launa 'ana me ka honua. 'O ko mākou mana'o lana 1) Hiki i ke kaiāulu 'Ōiwi ke ho'ohana i kēia mau mana'o ho'okele he pahu mua e wehewehe 'ia ai ka mana'o ho'okele i ke kaiāulu iho, a 2) hiki i ka po'e kūkulu 'enehana 'Ōiwi 'ole ke ho'ohana aku i ho'omaka kekahi kama'ilio māhuahua 'ana me ke kaiāulu 'Ōiwi no ka ho'omaka 'ana e komo i ke kūkulu 'enehana pū 'ana.

'O ka mahele 'o Context, he hāpai 'ana i ke akamai a me ke au mo'omeheu e kahe ana ma waena o nā hālāwai. Ua ho'omaka aku me ka "Workshop Description," he hō'ike lāli'i 'ana i ka hana i maopopo i ka po'e heluhelu 'o wai ma laila, pehea i hō'ea mai ai, a me ka hua. Loa'a pū i kēia 'ikepili 'o wai i komo ma ke 'ano he ho'olauka'i a lālā paha, a pēia nā pahu hopu i ho'oholo 'ia no ke ka'ina hālāwai 'ana ma ke 'ano piha a ka'awale me nā mea kiko'i, ka papa manawa pākahi o nā hālāwai, ka po'e nāna i kākō'o kālā a i kākō'o lima, a me kekahi hō'ulu'ulu o nā hana i hō'ea ai i ka ho'okumu 'ia o ke ka'ina hālāwai ho'ona'auao.

³⁰ Ho'ohana mākou i ka hua'ōlelo 'o "Western" e kū hō'ailona ana no ke 'ano Haole no'ono'o ho'okahi e pua'i a'e ana mai ka loina 'Eulopa 'Amelika Hema mai.

E hahai ana i ka wehewehna hālāwai ‘o “AI: a new (r)evolution or the new colonizer for Indigenous peoples?” he pepa na ke kālāi‘ōlelo a loea ‘ōlelo Māori ‘o Kauka Hēmi Whaanga (Ngāti Kahungunu, Ngāi Tahu, Ngāti Mamoe, Waitaha). A‘oa‘o aku ‘o Kauka Whaanga o ka hiki paha i ka ‘ōnaehana W’IH, me nā ‘enehana i pili, e ho‘ohana ‘ia e paio me ka po‘e ‘Ōiwi ma ke ‘ano he ho‘omau ‘ana o ka hana ho‘okolonaio ‘o ka hana‘ino, ke kīpaku a lula, no ka hana kiko‘ī e ho‘opunipuni i ka mana‘o o ka po‘e iā ia iho me kekahi kuana‘ike honua e ho‘omaika‘i aku ana i ka ho‘okolonaio. Hāpai pū ‘ia i ke ea o ka ‘ikepili i loko o ka honua ‘enehana i pihi i ka ‘ōnaehana W’IH a ‘o ka hopena he hilina‘i ‘ino ‘ana i ka waihona ‘ikepili he nui no ka hana kanaka, a no laila e ‘a‘a ana i ka ‘ike ku‘una a me ka lolina mo‘omeheu, he alāiki honua. Pani ‘o Kauka Whaanga i kāna pepa me ke kāhea e kia nā kānalua ‘Ōiwi i ka hana ‘o ka ho‘okumu ‘ia o ka lula mana‘o ho‘okele honua i ke kūkulu a ho‘opuka ‘ana i ka W’IH.

I kēia pāku‘ina a‘e na ka haku lau kūlele paho a loiloi ‘o Jason Edward Lewis’ (He Cherokee, Hawai‘i, a Kāmoa) “The IP AI Workshops as Future Imaginary,” ua ho‘olauka‘i i nā hālāwai ho‘ona‘auao he la‘ana kūpono loa no ka lauaki ‘ana he moemoeā i komo pū i ka wā e hiki mai ana. Mai nā kakaha o loko i palapala ‘ia ma ka hālāwai mua, nā‘ana hou ‘o Lewis i nā kūlana ‘oihana a me nā ‘ike mo‘omeheu o nā ‘ano kama‘ilio like ‘ole, a pēia pū nā kānalua a me nā mana‘o lana o ka po‘e e komo ana i mea e pena ai he ki‘i o nā papa o ka ‘ike pohihihi e kūka‘i iho ana ma laila. Hāpai pū ‘o ia i nā ‘ano like ‘ole e ku‘u ai ka ‘ike ‘Ōiwi i loko o ke ao ‘enehana a me nā moemoeā o ka po‘e no nā lolina o ko lākou mau kaiāulu pono‘ī, a pehea e kāko‘o ai i ke kūkulu ‘ōnaehana W’IH.

I kekahi mahele a‘e, Vignettes, hō‘ili‘ili pū ‘ia ‘elima moemoeā ‘oko‘a o ke kūkulu ‘ia ‘ana paha o ka W’IH i ka lolina o nā kālaikuhi‘ike pono‘ī o ka Anishinaabe, Coquille, Kanaka Maoli/Blackfoot, Lakota a me ka Euskaldun. Wehe aku mākou i ka mahele me “Gwiizens, the Old Lady and the Octopus Bag Device” na kekahi haku lau kūlele paho ‘o Scott Benesiinaabandan (He Anishinaabe). He ko‘ihonua W’IH kēia i loko o ‘ekolu mahele. ‘O ka mea ‘ekahi, he wehewehena o ka hame‘a Octopus Bag, he ‘ōnaehana W’IH i haku ‘ia e ka DNA o ke mea nāna e lawe pū i loko ona, a hāpai ‘ia ka ‘oi o ke ea kelekoli. ‘o ka lua, he mo‘olelo hō‘ike e wehewehe ana no ko Benesiinaabandan pili ‘ana i ka ‘enehana i ka maopopo no ka honua i haku ‘ia e ka *adizkookaan* (mo‘olelo la‘a). ‘O ka mahele hope ka ho‘ohana ‘ia o ka adizkookaan e ha‘i ai i ka mo‘olelo no ka Octopus Bag Device me ke ‘ano he makana mai ‘the great mystery’ mai e komo ana i ke ao kanaka ma o kekahi ho‘okūkū ma waena o kekahi keikikāne a he kupuna. Hō‘ike mai ‘o “Gwiizens” i ke ala e ho‘ononiakahi ‘ia ai ka ‘enehana hou me kekahi mahele o nā mo‘olelo ko‘ihonua Anishinaabe, ma ke ‘ano e ho‘ohana ‘ia ai nā ki‘ina hana e kū nei e ka‘analike ai i ka ‘ike me ke kūpono pū o ka mo‘omeheu.

Ma hope mai o kā Benesiinaabandan kā Ashley Cordes (he noi‘i kūlele paho a he Coquille), paukū, “Gifts of Dentalium and Fire: Entwining Trust and Care with AI,” ‘O ka mana‘o laulā e kia ana kā Cordes i ka paio ‘ana e koi ka po‘e ‘Ōiwi e no‘ono‘o kūpono i ka ho‘ohana o ka blockchain me ka W’IH e kōkua i ka ho‘okele i ko ko lākou mau kaiāulu pono‘ī ‘oihana, me ka hō‘ike ‘ana i ia mau ‘enehana e ho‘ohana ‘ia e ho‘onui ai i ke ea ‘Ōiwi ma o ke ēwe. Ma ke ‘ano he lālā o ka nāki Coquille, ho‘ohana ‘o ia i ko ke kaiāulu

mana'o 'o ka 'trust and care' e ho'okumu ai i kona moemoeā no ke kūkulu pono 'ana i ka 'enehana, a i mea e palapala ai i ka ho'ononiakahi 'ia. Makahi'o pū 'o Cordes i ka wehewehena i ke ko'iko'i 'o ke a'oa'o e no'ono'o i ka W'IH ma ke 'ano he 'ohana, a pēia pū ka no'ono'o i nā mea e pono ai ka W'IH.

Hāpai 'o Lewis iā "Quartet," i haku 'ia me kahi ka'ina poema a he wehewehena pōkole e hō'ike ai pehea e nānā 'ia ai ke kālaikuihī ike i loko o kekahi 'oloke'a W'IH. Ho'omoemoeā nā kikokikona i kahi wā hakuhia e hiki mai ana, a e hānai 'ia kekahi po'e 'ōpiopio Kanaka Maoli me 'ekolu Waihona 'Ike Hakuhi i 'oko'a kēlā a me kēia kālaimana'o. 'O kekahi, he no'ono'o i ke kuana'ike Hawai'i 'o ka 'āina, ke kuleana a me ka 'ohana; 'o kekahi aku mai ke kuana'ike 'o ka 'ōlelo Blackfoot 'o ke kahawai ma kahi o ka pa'a; a 'o ke kolu mai ke kuana'ike 'o ka ho'olauka'i 'ia o ke a'alolo he'e, he 'ae'oa o nā lālā o kona kino. Ho'oholo pū kēia mau W'IH i ke kākō'o 'ana i ke ola o ke Kanaka, ma ke ao kūlohelohe, ka pilina kanaka a kanaka 'ole, a me ka no'ono'o pū i ka wā i hala-e kū nei-e hiki mai ana.

Hāpai ke kanaka pāhiahia 'o Suzanne Kites (Lakota) iā, "How to Build Anything Ethically," mai nā kuana'ike a kālaimana'o Lakota mai i mea e hāpai ai he ka'ina hana e kūkulu kūpono aku ai i ka 'enehana lako pa'a mai kinohi a'e. Wehewehe mai 'o Kite i ka hana 'ana i ka honua me he 'Good Way,' wahi a nā kahua hana Lakota, a hāpai pū 'ia ke ala e pili ai ka Lakota i ka pōhaku i mea e makahi'o ai i kā kākou pilina me ka lako pa'a W'IH (i hiki ke no'ono'o 'ia, ua haku 'ia me ka pōhaku). Palapala maila 'o ia i ke ka'ina hana e kūkulu ai ke kino helu lolouila he ala maika'i, a ho'ohana 'ia ke ka'ina hana kūkulu hale ho'ohuali kino ma ke 'ano he mea ho'okele. Pani 'o ia me kekahi ka'ina papa helu o nā nīnau e nīna'u 'ia ma ka ho'omaka o ke kūkulu i ia 'ano hame'a—he mau nīnau i no'ono'o 'ia e mālama i ke kūkulu 'ana a ho'onoho 'ia ma ke ala maika'i.

'O ke pani 'ana i nā Vignettes, "Wriggling Through Muddy Waters: Revitalizing Euskadunak Practices with AI Systems." He pepa kēia na Michelle Lee Brown, he moho Lae'ula ma ka Mahele Polikika 'Ōiwi/Future Studies ma ke kulanui o Hawai'i ma Mānoa. Wehewehe aku 'o Brown (Euskaldun), he Txixardin Lamia, he puhi 'enehana meaola³¹ i kūkulu 'ia mai nā loina mai i ho'okumu 'ia i ka pilina o ka Euskaldunak (po'e Basque) i ka puhi. Hāpai maila i kekahi ao kūlohelohe VR e noho ai kekahi kupuna Txixardin Lamia, kahi e a'o ai nā haumāna i nā loina e ho'oka'a'ike ai me kēia kupuna a e a'o i nā ha'awina e ho'omaopopo ana i nā ala pālua e pili ai, e komo pū ai i ke ao holo'oko'a e puni ana. I ke au o ka pepa, hāpai 'o ia i ka pō'aiapili me ke kama'ilio 'ana i ka pilina mamao ma waena o kona po'e me kēia mau puhi, ke kuleana nui o kēia pilina ma ka mo'omeheu makalae Basque, a me ka pono e no'ono'o i kēia mau mea a kākou e haku a ho'okipa ana i nā 'ōnaehana W'IH a kākou.

Wehewehe lāli'i ka mahele Prototypes i ka ho'ononiakahi 'ana he 'enehana W'IH me ka loina 'Ōiwi. Lana ko mākou mana'o o ka 'ike 'ana a'e he mea like me kēia kime 'Indigenous Protocols and Artificial Intelligence in Action,' ka po'e ho'i i hāpai i kēia ho'okolohua Hua Ki'i Prototype App no ka ho'ōla 'ōlelo, 'oiāi, pa'a loa ke ko'iko'i o kēia i ka maopopo 'ana o ke ala e ho'ololi ai i ke ki'ina hana kūkulu

³¹ 'enehana meaola = biotechnology

'enehana. Eia ke kime Hua Ki'i, 'o nā 'enekia Joel Davison (Gadigal and Dunghutti) lāua 'o Michael Running Wolf (Northern Cheyenne), ke kanaka 'epekema 'ikepili 'o Caleb Moses (Māori), ka manakia pāhana 'o Caroline Running Wolf (Crow) a me ke kanaka mō'aukala Kauka Noelani Arista (Kanaka Maoli). Ma ke 'ano he kime i ka piha 'Ōiwi— he pō'aiapili makamua no lākou a pau— ua 'ike lākou he wā kūpono e haku a ho'ohua. Ma ka 'ao'ao haku, ua makemake e kuano'o no ka ho'ohana lōina 'Ōiwi e haku a ho'ononiakahi he 'enehana kokoho'e, a ua kō maika'i. Ma ka 'ao'ao ho'ohua, ua makemake e haku he polokalamu unuhi ma ke kuana'ike 'o ka 'ōlelo ma ke 'ano he mea lawe lōina mo'omeheu. Hō'ike kā lākou hana ma nā 'ao'ao 'elua he kumu ho'ohālikelike no ka 'enehana helu lolouila a pehea e haku 'ia ai me ka lawe kūpono 'ana i ke kaiāulu 'Ōiwi.

'O ka mahele mua, i kākau 'ia na Caroline Running Wolf lāua 'o Kauka Arist, ho'olauna 'ia nā pahuhopu o ka pāhana. Ho'omaopopo lāua i nā lōina 'Ōiwi a ke kime i hāpai akula, 'o ka hō'ihī 'oe, 'o ka pālike 'oe, a 'o ka pilina 'oe. Hāpai pū lāua i ke ala o nā lālā a pau o ke kime e kuleana ana i ka ho'ōla 'ōlelo 'Ōiwi. Komo pū ua mau kuleana lā i ka pua'i mana'o 'ana o ke kime no ke 'ano o ka pāhana a lākou e 'auamo ana, ma ke 'ano ho'i o ka 'hackathon' no 'elima lā o ka Hālāwai II. 'O ka hua o ka pua'i mana'o 'ana ka moemoeā 'o kahi polokalamu e ho'omaopopo ana i kekahi mau kino, a hō'ike 'ia ka hua'ōlelo Hawai'i a 'ōlelo pōkole paha e wehewehe ai ia mau kino. Hō'ōia akula 'o Running Wolf lāua 'o Arista i nā 'ano pohihihi like 'ole o ke kūkulu 'ana, mai ka ho'ononiakahi o ka po'e 'ike kūloko a me ka po'e 'ōlelo mai kinohi mai, i nā pu'u 'o ka ho'ohana i nā lako polokalamu e kū nei i haku 'ia e ka po'e 'Ōiwi 'ole no ka 'ōlelo, i ke kauka'i 'ana ho'i ma luna o nā puke wehewehe kikoho'e i hemahema ma muli o ka hopena o ka ho'okolonaio 'ana mai, i ka wā kūpono ho'i i haku 'ia e ka pūnaeweke o ka po'e 'ike e wae kūpono a maika'i aku i nā koho.

'O kekahi mahele, "Indigenizing AI: The Overlooked Importance of Hawaiian Orality in Print," na Kauka Arista, kahi e ho'olako ana he pō'aipili Hawai'i laulā a ākea no ka pāhana Hua Ki'i me ka hō'ike pū i kahi la'ana kūpono o ke kūkulu 'enehana 'Ōiwi e hiki ke ho'ohana 'ia i nā pō'aiapili 'ē a'e. Ma kona ma'i'o, paio ko Kauka Arista mau mana'o no ke ko'iko'i 'o ka ho'onoho 'ana i nā mea pili helu lolouila a pili mo'omeheu i pa'a loa kekahi i kekahi. Hāpai pū mai 'o ia i ka maopopo kūpono 'ana o ka mākaukau mo'omeheu, me ka wehewehe pū i ke kākō'o pū 'ana o ka 'ike ku'una Hawai'i, kākā'ōlelo a me ka 'enehana palapala kekahi i kekahi, a me ka ho'omoemoeā 'ana pehea e pāhola ai i luna o ka 'enehana helu lolouila i like me nā mea e ho'ohana 'ia nei no ke a'o 'ōlelo a unuhi 'ōlelo. Nānā 'o ia i kēia "Ke komo nei i kahi hulihia hou o ka ho'ōla 'ōlelo, kahi e kākō'o ana ka 'enehana i ke kaiāulu 'Ōiwi ma ka ho'onoho 'ana i ka 'ikepili, i nā ala e 'ae ana iā kākou e ho'ohana kūpono 'ia ai ka 'ike ku'una a e kūkulu hou a'e ai i ka 'ōnaehana o ka mālama a ho'oili 'ike; 'o ka mea ko'iko'i ka hō'ōia 'ana i ke kuhikuhipu'uone akamai 'ana i mālama 'ia ma ka 'ōlelo a me ka palapala na ko kākou mau kūpuna, a he kōkua i ke kino 'ana o ke kuhikuhipu'uone helu lolouila o kā kākou mau 'enehana kikoho'e— a me ka 'ikepili a lākou e kākomo 'ia ai.

"Ke komo nei i kahi hulihia hou o ka ho'ōla 'ōlelo, kahi e kākō'o ana ka 'enehana i ke kaiāulu 'Ōiwi

ma ka ho'ono ho'ana i ka 'ikepili, i nā ala e 'ae ana iā kākou e ho'ohana kūpono 'ia ai ka 'ike ku'una a e kūkulu hou a'e ai i ka 'ōnaehana o ka mālama a ho'oili 'ike;³² 'o ka mea ko'iko'i ka hō'oi'a 'ana i ke kuhikuhipu'uone³³ akamai 'ana i mālama 'ia ma ka 'ōlelo a me ka palapala na ko kākou mau kūpuna, a he kōkua i ke kino 'ana o ke kuhikuhipu'uone helu lolouila o kā kākou mau 'enehana kikoho'e— a me ka 'ikepili a lākou e kākomo 'ia ai.

'O ka mahele 'ekolu, kākau 'ia na nā Running Wolf, Moses a me Davison, ka "Development Process for Hua Ki'i and Next Steps," Pa'a pū nā lāli'i e like me ka 'oneki, ke kūkulu polokalamu, a me ka moemoeā ho'ohana, a pēia pū ka lako polokalamu i ho'ohana 'ia no ka 'ōlelo a me ke ki'i. Wala'au pū lākou pehea no ka ho'okumu 'ia 'ana o ka mana mua i ke kūkulu hou 'ana a'e.

'O ka mahele 'ehā a me ka lima, "Dreams of Kuano'o" and "The Road to Kuano'o via Hua Ki'i," na Michael Running Wolf nā mea 'elua. He mo'olelo pōkole 'o Dreams of Kuano'o e moemoeā ana i kahi wā hakuhi i ho'ihō'i 'ia ai ke ea Hawai'i, a he koina na ke aupuni mō'i (Queendom) ka ho'ohana 'ana o ka po'e a pau i kahi polokalamu W'IH 'o Kuano'o e alaka'i iā lākou ma ke kipa 'ana mai. Hāpai pū 'ia ke ala e kia'i a ho'omau 'ia ai ke ea ma o ia polokalamu, a pēia pū ka ho'ona'auao 'ana i ka mō'aukala mokupuni a me nā mea ma'amau o ka mo'omeheu; a 'o ka pāpā 'ana i nā 'ōlelo 'ē a'e ma waho a'e o ka 'ōlelo Hawai'i i nā pō'aiapili aupuni; a 'o ka ho'ohana 'ana i nā helu e mahalo i ka lawena. Wala'au ka mea 'elua i nā pu'u o ka holomua 'ana mai ka mana Hua Ki'i aku na ke kime i ka 'ōnaehana W'IH Kuano'o i ho'omoemoeā 'ia ma ka 'ōlelo pōkole. 'O ka 'oi o ia mau mea ka loa'a a mālama 'ana aku i ka 'ikepili e ho'ohana 'ia i loko o ka ho'oma'ama'a no ka 'ōnaehana 'ōlelo a ho'omaopopo maka.

Pani kēia pepa kūlana me 'ehā mahele pakuhi. Appendix A: 'Ōlelo Kāko'o i hō'ili'ili 'ia ai nā kikokikona i kākau mua 'ia e ka po'e komo, a pēia nā ninauele me ia po'e ma ka hālāwai ho'ona'auao mua 'ana. Appendix B: Hō'ili'ili ka papa heluhelu i nā kūmole a ka po'e ho'olaika'i e ho'olauka'i ai i nā hālāwai a pēia nā kūmole i hāpai 'ia e ka po'e komo. Paipai mākou i ka mea heluhelu e nā'ana i ua mau kūmole lā e na'auao like me mākou. Appendix C: ua loa'a na piliolani o ka po'e komo; ko'iko'i kēia pō'aiapili no ka po'e ma ke pākaukau a he wahi ho'omaopopo iā kākou iho a pēia ka mea heluhelu no ka lāli'i o kēia kama'ilio 'ana— a pēia ka ho'omaopopo 'ana i nā leo he nui wale i komo 'ole. 'O ka Appendix hope ka papa manawa no nā hālāwai ho'ona'au W'IH 'elua.

Makemake pū mākou e hāpai no nā ki'i nani loa i loko o kēia palapala. Na Kari Noe (Kanaka Maoli), he kanaka haku ki'i a he haumāna muli puka (Ke Kulanui o Hawai'i ma Mānoa), i kōkua i ke kākō'o ma ka hālāwai mua a ua komo 'o ia i nā mea 'elua. 'O kāna hana i ka pena ki'i 'ana i nā hi'ohi'ona like 'ole o ka vignettes, ua hana 'ia he kama'ilio a pu'a'i mana'o maika'i 'ana me nā mea kākau, a he kōkua i ka ho'ohua 'ana a'e i nā moemoeā. He kanaka pena ki'i Barazila 'o Sergio Garzon e noho nei ma Honolulu a ua komo i nā lā 'elua, a na Kūpono Duncan, he kanaka Maoli pena ki'i, i komo i ka lā 'elua. Ua noi

³² "we are entering a new phase of language revitalization where technology can assist Indigenous people in organizing data in ways that allow us to synthesize ancestral knowledge and rebuild systems of knowledge keeping and transmission"

³³ kuhikuhipu'uone: architecture

mākou iā lāua e ho'olohe i nā kama'ilio e palapala a pena ki'i ai paha i nā hanana, a e unuhi i ko lāua e lohe ana he mea e 'ike ai ma ko lāua mea pono'i. Ua haku a pena 'iwā lāua i ke au o ke kama'ilio 'ana. Ua komo nō auane'i kā lāua mau ki'i i loko o ke kama'ilio, a hua mai he mau mana'o lōkahi. Ua ko'iko'i ko lākou mākau ho'omoemoeā i ko ka po'e komo mana'o no ke kōkua 'ana iā mākou ma ka haku 'ana i nā moemoeā wā hakuhia e hiki mai ana.

Ka Ho'omau 'ana i ke Kūkā

Ua ho'olauka'i mākou i nā hālāwai KH'Ō W'IH i mea e pua'i mai ai he kama'ilio 'ana. Ua hua mai ia mau kūkā i loko o ka ho'omākaukau 'ana no nā hālāwai i loko o ko mākou 'imi 'ana a ho'oka'a'ike 'ana me nā akeakamai, pena ki'i a me nā kānaka 'enehana e hoihoi ana i kēia kumuhana. Ua hua hou maila i ko mākou hui a launa 'ana ma nā hālāwai, a ma nā pilina kekahi i kekahi, a pēia ke kūkulu pū 'ana he kumuhana kūkā no ke kumu e nīnau 'ia ai no ke Ka'ina Hana 'Ōiwi a me ka W'IH, a pehea e ko'iko'i ai no nā hopena o ko kākou mau kaiāulu. He ke'ehina hou aku kēia mau ha'awina, he ha'awina a mākou e mana'o lana ana no ka puka lanakila 'ana i ka lawe 'ana mai i ko mākou mau kaiāulu, a pēia ke kumuhana honua no ke kūkulu a ho'ohana 'ia o nā 'ōnaehana W'IH.

Mana'o nui mākou i ke ko'iko'i 'o ke komo loa pū 'ana o ka po'e 'Ōiwi, ma ka pākahi a me ke kaiāulu, i loko o kēia mau kūkulu 'ana o nā loina helu lolouila mua i like me ke a'o mīkini, ka ho'omaopopo 'ōlelo 'ae'ōia a unuhi 'ōlelo, a me ke kuhi lawena. Ke pā 'ē nei nō kēia mau loina i ko kākou mau kaiāulu, he pinepine na'e ma ka 'ao'ao 'ino. E ulu a pā'ewa'ewa nui wale ana nō i ke au o ka manawa. Ma ko lākou puni 'ana i ko kākou mau mo'omeheu, he ko'iko'i ke kūkulu 'ana i ia mau 'enehana e no'ono'o i ka 'oloke'a e maopopo ai kākou iho a me ko kākou wahi o ke ao holo'oko'a. E kūkulu pū 'ia nā loina kaiāulu kiko'i 'o ka pilina, ka 'ohana, ka pālike kekahi i kekahi, a me ka mālama i loko o ke kahua ka'ina hana e ho'oholo ana i ke ala e ho'ononiakahi 'ia ai. E ho'okō ko kākou po'e i ia hana nui. 'A'ohē kumu e 'ole ai. 'O ka hana 'e a'e ka haku 'ia o ko kākou honua e ha'i.

E komo pū kākou i loko o nā kūkā 'ana o ka honua no ka W'IH. He mana'o ka nele o nā 'ano kālaikuhi'ike like 'ole i loko o ke ao 'enehana e kūkulu 'ia ai nā 'ōnaehana W'IH, he mana'o o kākou, he kanaka, ke hō'ole nei i kēia wā kūikawā no kēia hanauna 'o ka no'ono'o nui 'ana i kā kākou pilina me ka 'enehana i kona ulu 'ana he mana helu lolouila, lawena 'ae'ōia, a me ka pā o ke kaiāulu. 'A'ole lawa ke kūkā 'ana o ka honua no ia mau lula W'IH mai kona kahua i ka mo'omeheu kālaimana'o e kuhi ana he mau mana'o hemahema no nā loina i mālama 'ia e nā kānaka pākahi a pēia nā kaiāulu a pau. Ho'onoho nā mea 'declarations' a me nā 'guidelines' e kū nei, i nā loina mo'omeheu he mea 'elua-kekahi pa'a lawena o nā mea he nui- e no'ono'o 'ia ma hope o nā loina make'e o ka honua. Maopopo le'a nō i ka po'e 'Ōiwi ka hana 'ino a hewa 'ia 'ana o ia mau loina honua e pepehi i nā loina o ke kaiāulu i ka honua. 'O ka pahuhopu ke kūkulu 'ana he mana W'IH e kōkua 'ōia' i'o ana i nā kānaka o ka honua, he kūkā 'ana ia e komo ai nā leo i like me nā leo o kēia pepa.

Ho'olauka' i nā mana'o i nā'ana 'ia i loko o kēia pepa kūlana i ke ala i paepae 'ia na ka mō'aukala lō'ihī o ka po'e 'Ōiwi no ka haku 'enehana. Haku pū 'ia nā nīnau hou aku. Pehea kākou e kūkulu ai ka pāhiki i loko o ko kākou mau kaiāulu e haku a kūkulu ai ho'i i nā 'ōnaehana na kākou iho? Pono kākou i nā kānaka i mākaukau ma ke kūkulu 'ana i nā pae a pau o ke kūkulu, i ho'ona'auao 'ia ho'i paha i ka 'ike kuuna a mo'omeheu, a pēlā nā kānaka mālama 'ōlelo. Pehea kākou e ho'omaka ai i ka hana kupunaha 'o ka unuhi kūpono 'ana i ko kākou mau lōina mo'omeheu he mana'o helu lolouila e kūkulu 'ia he pā'ālua? Pohihihi a ākea loa nā 'ōnaehana a 'oloke'a e kākō'o ana i nā la'ana o ka helu lolouila, a no laila e pa'akikī ai ka hāpai a mana'o i nā mea 'ē a'e i hiki. Pehea kākou e hana pū ai ma ka pae 'o ka ho'oka'a'ike 'ana i nā lōina 'Ōiwi me ke kākō'o pū 'ana i nā lōina kīkō'ī 'ē a'e i ko kākou mau kaiāulu? 'O ka ma'amaui, li'ili'i a mamao nā kaiāulu 'Ōiwi: pono ke kūkulu 'ana i nā 'enehana i like me ka W'IH e hana kūpono a e hō'ihī ka hana kekahi me kekahi ma nā moku'āina.

Hāpai kēlā a me kēia nīnau i nā nīnau hou, i nā paio hou, a he hō'ike pū i nā ala 'ē a'e e noi'i a haku hou aku ai. He manawa 'oli'oli ia; lana ko mākou mana'o i ka hana pū 'ana me nā kaiāulu ma nā ala e ola loa a'e ai kākou.

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SECTION 2

Mana‘o Ho‘okele
No ka Po‘e Kūkulu
W‘IH ‘Ōiwi m.1

2.0

Mana‘o Ho‘okele No ka Po‘e Kūkulu W‘IH ‘Ōiwi m.1

Ho‘ohana ‘ia ka ‘ōlelo “‘Ōiwi’ ma ke ‘ano he mea ho‘opili, ‘a‘ole he mea wehewehe, i mea e mahalo aku ai i kā mākou mau mana‘o pohihihi me ka hō‘ihi pū i nā mea ‘oko‘a loa ma waena o mākou. ‘O ka ‘ōlelo ‘ana iā ‘m.1’, ‘o ka ho‘omaopopo ‘ana he mana mua wale nō kēia no ka wānana ‘ana o ka ho‘ololi, liliuewe, a ho‘āno hou ‘ana i loko o ka holo ‘ana a puni, me ka mana‘o ho‘i e hō‘ike i nā mea e pono ai nā lāhui a kaiāulu pono‘ī.

‘O ke kumu o kēia mau mana‘o ho‘okele ke kākō‘o a ho‘okele ‘ana ho‘i i ke kūkulu ‘ōnaehana W‘IH ma ke ‘ano he mea kūpono ma nā ‘ao‘ao ‘elua. Aia ko mākou kia ma luna o ka ho‘ohana a ho‘ononiakahi ‘ia o ka W‘IH ma nā pō‘aiapili ‘Ōiwi. Mana‘o ‘i‘o na‘e mākou e ho‘ohana ‘ia ma nā pō‘aiapili ‘ē a‘e, ‘oiai, he hua a he hō‘ike ka ho‘ohana ‘ia o kēia a me kēia ‘ōnaehana W‘IH ma ke ‘ano he lōina ‘Ōiwi. ‘O ka pahuhopu o kēia mau mana‘o ho‘okele ka paipai ‘ana i ke ku‘una o ka ‘ike, ka lawena a me ka lōina ma nā hanauna, i mea e pili a ho‘onui ai i ko kākou mau kaiāulu, a i mea ho‘i e hō‘ike ai i ka pilina o kākou i ka ‘āina, ke kai, a me ka lani. Kia ia mau mana‘o i nā ‘ano: kanaka, hui, ‘oihana, hui ‘imi na‘auao, a polikika/‘elele aupuni like ‘ole e mana‘o ana e ‘auamo i ke kuleana ‘o ke kūkulu kūpono ‘ia o ka ‘ōnaehana W‘IH me nā kaiāulu ‘Ōiwi. Pili pū kēia kuleana me kekahi mau

mea 'ē a'e i ka hā'awi 'ana i ka holomua o ka 'enehana a 'epekema, kūkulu pāhana, lula, kānāwai, kūkulu ka'ina huli hā'ina, nā mana'o ki'ina hana, a me ka mana'o o ka lehulehu.

I loko nō o ka helu papa 'ia o kēia mau mana'o ho'okele, 'a'ohē waiwai o ka ho'oka'ina 'ia. 'A'ole i 'oi aku ka waiwai o ka mana'o mua ma mua o ka mana'o hope o ka papa.

1. Kūloko

'O ka ma'amau, pa'a ka 'ike 'Ōiwi i loko nā kelekoli kiko'i. Waiwai pū i ka no'ono'o 'ana i nā nīnūnē i waiwai i ka honua.

E kūkulu 'ia ka 'ōnaehana W'IH me ke kūkā pū me nā kaiāulu 'Ōiwi kiko'i i mea e pa'a loa ai ka hiki i ka 'ōnaehana ke kōkua a kākō'o i ia kaiāulu (elm., ke kahua i kahi kūloko) a pēia ka ho'opili 'ana i nā pō'aiapili honua (pili i nā 'āina a pau).

2. Pilina a Pālike

'O ka ma'amau, he 'ike pilina ka 'ike ku'una 'Ōiwi.

E kūkulu 'ia ka 'ōnaehana W'IH e maopopo ka pilina ma waena o ke kanaka a me ke kanaka 'ole, a pehea e kauka'i ai kekahi i kekahi. He pahuhopu nui ka maopopo, kākō'o, a hō'oia 'ana i kēia mau pilina.

He lālā ho'i ka 'ōnaehana W'IH i kekahi pō'ai pilina. Kauka'i ko lākou wahi a kūlana i ia pō'ai ma luna o nā kaiāulu pono'i me ko lākou mau loina no ka maopopo, hō'oia, a ho'ononiakahi 'ana i nā kino hou i loko o ka pō'ai.

3. Kuleana a Pilina

'O ka ma'amau, hopohopo nō ka po'e 'Ōiwi i ko lākou mau kuleana kaiāulu.

He kuleana ko ke kaiāulu 'Ōiwi no ko ko lākou kaiāulu pono'i, ma ke kākō'o kūpono 'ana, a he kuleana nui mua i nā lālā o ke kaiāulu.

4. Ke Kūkulu Mana'o Ho'okele mai ke Ka'ina Hana 'Ōiwi mai

He pa'a kānāwai ke ka'ina hana e ho'okele mai ana i ka lawena.

Haku 'ia ke ka'ina hana mai ke kālaiuhi 'ike, ke kālaiuhikanaka, a me ka ho'oka'ina ku'una 'ana o ka 'ike i pa'a i ka pilina, ke kūloko 'ana, a me ke kuleana.

Paepae ke ka'ina hana 'Ōiwi i ke kahua o ke kūkulu ho'okele mana'o 'ana e hahai ai, e kuleana ai, a e kānāwai ai nā kino W'IH i loko o ke kaiāulu.

He pono ka ho'ononiakahi 'ana i nā ka'ina hana e kū nei e kūkulu ai, e ho'olaha ai i nā 'ōnaehana W'IH. He pili kiko'i paha ke ka'ina hana i nā kaiāulu pono'i, e haku 'ia paha me ke kuana'ike laulā e ākea ai i nā 'ano kaiāulu 'Ōiwi a 'Ōiwi 'ole like 'ole.

5. Ho'omaopopo i ke 'Ano 'Ōiwi o nā 'Enehana Helu Lolouila a Pau

He 'ōnaehana 'enehana nōhihi nā 'ōnaehana mo'omeheu 'Ōiwi a pau. He hō'ike i kekahi 'ano mea mo'omeheu a kālai kanaka kēlā a me kēia 'ano 'āpana 'enehana no ka honua holo'oko'a. E maka'ala ka po'e kūkulu 'ōnaehana W'IH i ko lākou mau mo'omeheu pono'i iho, a pēia nā mana'o kanaka a me nā lōina ma'amau iā lākou iho; e maka'ala pū i nā pā'ewa'ewa e pili pū ana; a e haku 'ia nā ka'akālai e 'ae 'ia nā 'ano kuana'ike mo'omeheu 'ē a'e.

He mākēlia mo'omeheu ka helu lolouila. 'O ka mole ia o ka 'enehana kikoho'e, a e like me ka pi'i 'ana o ko kākou ho'oka'a'ike na kēia mau 'enehana, pēia pū ka pi'i o ka ho'ohana 'ia i mea e hō'ike ai i ka lōina mo'omeheu. No laila e ko'iko'i ai no ka ho'omau a ho'oikaika 'ia o nā kaiāulu 'Ōiwi e haku hou aku i mau ki'ina hana helu lolouila e hō'ike a hō'ā ana i ko kākou mau lōina mo'omeheu.

6. Ho'ohana i ka 'Oloke'a Kūpono no ka Extended Stack

Paepae ka mo'omeheu i ke kahua o ka honua kūkulu 'enehana, 'o 'stack.' E no'ono'o 'ia nā lālā a pau o ka 'ōnaehana W'IH he lako pa'a a he polokalamu i loko o ka loiloī kūpono 'ia 'ana o ka 'ōnaehana. Ho'omaka kēia i nā lako e kūkulu 'ia ai ka lako pa'a a no ka hō'ikehu 'ana i ka polokalamu mai ka honua mai, a pani 'ia ma ko lākou ho'i 'ana. 'O ka lōina kūpono ka hana 'ino 'ole 'ana aku.

7. Kāko'o a Hō'ihī Ea 'Ikepili

He kuleana ko ke kaiāulu 'Ōiwi no ke koho 'ana pehea e ho'ohana, hō'ili, kālailai, a ho'oka'ina hana 'ia ai ka 'ikepili. Ho'oholo lākou i ka ho'opale, ka'analike, a āhea e ka'ana 'ia ai, ma hea e loa'a nei ke ea na'auao a me ke ea 'Ōiwi, a iā wai ia mau pono, a pehea e lula 'ia ai ia mau pono. E kūkulu 'ia nā 'ōnaehana W'IH a pau e hō'ihī a kāko'o mai i ke ea 'ikepili.

E hana hou 'ia aku ho'i ia mau lula 'ikepili ākea e hō'ihī i nā pono 'Ōiwi i ia mau wahi a pau i hāpai 'ia a'ela, a i mea ho'i e ikaika a'e ai ke kaulike e komo ai, a me ke akāka o ka pono. E pili pū nō ho'i he hō'ili'ilina o nā mana'o o 'ownership' a me 'property,' he mau hua o nā kānāwai 'Ōiwi 'ole a 'a'ole nō paha e hō'ike 'ia ke ala e ho'ohana a lula ai ke kaiāulu 'Ōiwi i ko lākou mau 'ike ku'una 'Ōiwi.

SECTION 3

Nā Pō‘aiapili

3.1. Wehewehena Hālāwai Ho‘ona‘auao

3.2. W‘IH: he (r)evolution hou a i ‘ole he ho‘okolonaio hou i ka po‘e ‘Ōiwi?
Hēmi Whaanga

3.3. Nā Hālāwai Ho‘ona‘auao KH‘Ō W‘IH he Moemoeā o kēia Mua aku
Jason Edward Lewis



Holographic Aunties. Image by Sergio Garzon, 2019.

3.1

Wehewehena Hālāwai Ho‘ona‘auao

He ‘elua mahele i mālama ‘ia ai ka hālāwai Ka‘ina Hana ‘Ōiwi a Waihona ‘Ike Hakuhiā. Ua mālama ‘ia ka mua ma nā lā 1 a 2 o Malaki, a ‘o ka lua mai ka lā 26 o Mei i ka lā 2 o Iune. Mālama ‘ia nā hālāwai ‘elua ma ka ‘āina o ke Kanaka Maoli, ma ka mokupuni Hawai‘i o O‘ahu. Na Jason Edwards, Angie Abdilla me Kauka ‘Ōiwi Parker Jones, Kauka Noelani Arista, Suzanne Kite and Michelle Brown ka Hālāwai 1 i ho‘olauka‘i. Na Lewis, Arista, Kite a me Brown ka Hālāwai 2.

I loko o ka ho‘okahi makahiki i ho‘olauka‘i a kūkulu ‘ia ai ka hālāwai mua, na Lewis, Abdilla a me Parker Jones i no‘ono‘o i ka ‘ike ‘oihana a me ke kaiāulu, ke keka, ka honua a me kahi ‘oihana ma ke ‘ano he ‘imi a hō‘oia ho‘i i ka po‘e e komo ana. He 35 kānaka i ‘ae mai i ke kono. ‘O nā lāhui: Kanaka Maoli, Palawa, Barada/Baradha, Gabalbara/Kapalbara, Gadigal/Dunghutti, Māori, Euskaldunak, Samoan, Cree, Lakota, Cherokee, Coquille, Cheyenne, a me nā kaiāulu Crow mai Aotearoa, Nū Hōlani, ‘Amelika ‘Ākau, a me ka Pākīpika. Ua kono ‘ia kēlā a me kēia kanaka no ko lākou ‘ike ‘oihana i ka hua ma ka hui ‘ana o ka mo‘omeheu ‘Ōiwi a me ka ‘enehana kikoho‘e ho‘omua, a ma ke kiko‘ī, ka po‘e i hoihoi ‘ē a e hoihoi ana paha i ke kama‘ilio ‘ana no kēia mua aku o ka W‘IH mai ke kuana‘ike ‘Ōiwi. Ua ho‘olauka‘i ia po‘e i nā hālāwai i nā wahi ‘Ōiwi, me ka hapanui o ka po‘e he ‘Ōiwi nō. Ua pono

mākou i kahi kama'ilio 'ana o 'loko' no ka W'IH e ho'omaka a pa'a mau ana mai nā hopohopo mai o ko kākou mau kaiāulu, ma kahi o kekahi mau kaiāulu 'honua' a 'ākea' i moemoeā 'ia. Pahu pū 'ia mākou e ka makakau o ke ala e nalowale ai ka leo 'Ōiwi i loko o ke kama'ilio kulekele e kūkā 'ia nei ma ke ao 'honua,' a pēia i ke ala e alāiki 'ia ai e ka po'e 'Ōiwi 'ole nāna e ho'ohana hewa aku nei i ko kākou mau kālaikuhi'ike i ka ho'omaopopo 'ole 'ana a me ka no'ono'o iho wale nō he 'ho'owae.'

Ua ho'oka'ina makakoho mākou 'o ka ho'ona'auao ākea. Nānā 'ia ka ho'omohala 'ike a ho'oili 'ike e nā kaiāulu 'Ōiwi mai ke kuana'ike holo'oko'a mai, i kahi e pili pū ai nā 'ano ho'ona'auao like 'ole a pēia nā wahi e ho'onui 'ike aku ai kekahi i kekahi no ka maopopo mauō a piha. Ua hō'oa pū mākou i nā 'ano kāhuna like 'ole e kama'ilio pū ana. He nani ia, he mole ka hō'ike pāheona i nā 'ano kālaikuhi'ike, ko'ihonua, a kuanakanaka 'Ōiwi like 'ole. He nani pū ia, inā e ho'omoemoeā ana i nā mea hiki i kēia mua aku, kūpono pū nā kānaka e kuano'o a ho'okino ana i nā mea o ka no'ono'o. He mau kānaka o nā 'oihana 'enehana, pāheona, 'epekema, loa 'ike ku'una, mālama 'ōlelo, a me ka haku kulekele. No nā 'ano 'oihana like 'ole mai lākou: 'o ke a'o mīkini, ke kaha a kūkulu a hakulau, ka 'ōnaehana hō'ailona, ka no'ono'o a heluhelu lolouila, ke kālai mana'o, ke kālai'ōlelo, ka huli kanaka, a me ke kālaikanaka. Ua koi mākou e haku he wahi pā hanauna, kahi ho'okumu a e hiki ana i nā lālā 'elemakule ke kama'ilio pū kekahi me kekahi. Na CIFAR i ho'oka'a i ka 'ai'ē i ka puni mua o ka polokalamu pu'u kālā AI & Society (na Lewis, Abdilla, Parker Jones, a me D. Fox Harrell). Ua ho'olako hou aku ka mahele Noi'i Kālaikanaka o Kanakā (SSHRC) o ka polokalamu pu'u kālā Connection Grant (na Lewis, Abdilla, Arista, Harrell a me Parker Jones); na Abdilla, 'o Old Ways, New Indigenous cultural consultancy; a na Lewis 'o Initiative for Indigenous Futures Partnership. Ua ho'olako kekahi mau mahele o ke Kulanui o Hawai'i ma Mānoa he mau wahi a kūmole i like me: ka Mahele Mō'aūkala, ke Koleke Pāheona a 'Epekema, ka LAVA Lab, ka Hawai'i Data Science Institute, a me ke Academy for Creative Media. Ua ho'olako pū hou a'e ka noho noi'i o ke kulanui 'o Concordia i ka mahele Computational Media a me ka Indigenous Future Imaginary a pēia pū ka MIT Center for Advanced Virtuality.

Ua ui nā hālāwai ho'ona'auao i ka nīnau nui:

- Mai ke kuana'ike 'Ōiwi mai, e aha kā kākou pilina me ka W'IH?

Ua no'ono'o pū iho i nā nīnau i pili e la'a me:

- Pehea e komo pū ai nā kālaikuhi'ike a kuanakanaka 'Ōiwi i loko o ke kama'ilio honua no ke kaiāulu a me ka W'IH?
- Pehea kākou e ho'ākea a'e ai i ke kūkākūkā no ke kuleana o ka 'enehana i loko o ke kaiāulu ma 'ō aku o kahi noi'ina mo'omeheu ho'okahi a me ka mo'omeheu Silicon Valley?
- Pehea kākou e moemoeā aku ai i kēia mua aku me ka W'IH e ho'onui ana i ka nohona maika'i o nā kānaka a pau a pēia nā kānaka kino 'ole?

Hālāwai 1

Ma mua o ka hālāwai ho'ona'auao, ua noi aku mākou e ho'omākaukau ka po'e i ka pane 'ana i ka nīnau penei:

- He aha kou hoihoi i ka W'IH?

Ua pane maila kekahi mau kānaka; aia nō i ka Pāku'ina A.

Ua mālama 'ia aku ka hālāwai mua ma Ka Waiwai Collective¹ he wahi mo'omeheu Hawai'i i loko o ke kūlanakauhale 'o Honolulu a me ka Laboratory for Advanced Visualization & Applications (LAVA) ma ke Kulanui 'o Hawai'i ma Mānoa.² Ua mālama 'ia ia hālāwai mua ma 'elua lā moekahi a he hālāwai ho'olauna nō ia. Aia nō ka papa manawa o ia hālāwai ma Pāku'ina D ma ka hopena o nei palapala. He nā'ana pākākā ma lalo iho nei.

Kakahiaka, Lā 1

01 Malaki 2019 | Ka Waiwai Cultural Centre, Honolulu

Ua lawelawe 'o Ty Tengan, me ke kākō'o 'ia e Isaac 'Ika'aka Nāhuewai lāua 'o Kaipulaumakaniolono Baker i ka 'aha 'awa e welina mai ai iā mākou i Hawai'i. He mea ho'opa'a kēia ka'ina hana i ke kūkā i kahi i mālama 'ia ai ka hālāwai, a he ho'omana'o i nā kānaka a pau i komo no kā lākou pilina a me ko lākou kuleana i ko lākou mau kaiāulu pono'i.

Ua ho'olauna iho mākou kekahi me kekeahi, he nani ia, 'a'ole i launa 'ē ka nui o mākou a i ka hō'ea 'ana i Honolulu. Nānā ihola mākou i ka papa manawa no nā lā 'elua, i nā hālāwai ho'ona'auao 'elua a me ka pāhana Ka'ina Hana 'Ōiwi a W'IH.

Pani 'ia maila ke kakahiaka me ka 'aha 'o Protecting Indigenous Cultural Knowledge, a he kumuhana a mākou i ho'i mau ai i loko o ke au o nā hālāwai. Ua hō'ike kahi mau kānaka i ka hopohopo no nā nīnūnē 'o ka 'ike alāiki a ho'ohana hewa 'ia, a ua makemake e kama'ilio no ke ala e ka'analike 'ia ai ka 'ike i nā hālāwai, no nā anaina ākea a laulā. Ua ho'oholo mākou 'o ka līpene e 'oki 'ia ana, e ho'ohana 'ia no ke kākau 'ana he pepa kūana ma mua o ke pa'i 'ana i ka pepa i mea e hō'ōia ai no ka pa'a o ka 'ike i nā kānaka a me ia nō.

Awakea, Lā 1

Ua wehe 'ia ke awakea me kahi ha'awina no kēia mua aku, a ua ka'awale mākou i 'elima pū'ulu e no'ono'o ai i ka mana'o ho'okele na Michelle Brown:

¹ Waiwai Collective <waiwaicollective.com>.

² University of Hawai'i at Mānoa's Laboratory for Advanced Visualization & Applications (LAVA) <lavaflow.info>.

Ha'awina pono W'IH o kēia mua aku / Ha'awina Pilina

E moemoeā no ka 'ākoakoa 'ana o ke kaiāulu he 50 i ka 100 makahiki mai kēia mua aku. Pili pū lākou i kekahi mea a akua paha no kā lākou mau pilina, pili i kahi W'IH kiko'i a me nā ka'ina huli hā'ina. He aha kēia mea pono W'IH, a kūkulu 'ia i ke aha? Pehea e komo ai ke kaiāulu me ia pono? Pehea i pili ai i kou wā i hala, a me ka wā e kū nei?

A laila i 'ākoakoa hou ai mākou e hāpai ai i nā hapane mai nā hui a pau mai. Komo kēia kama'ilio 'ana i kekahi kama'ilio no ka nīnau a mākou i nā kānaka e pane mai ma mua o ka hō'ea mai. Kūkā hou akula mākou mai ia mau kama'ilio 'ana e hō'ia i kahi mau wahi o ka no'ono'o a me ka hopohopo:

Nā Kumuhana Hoihoi

- 'O ka pono e holomua mai ke 'ano Haole "three act narratives"
- Like ka mahalo i kahi 'ōnaehana me ka mahalo i ka pilikino
- Ua hiki ke ho'ohana i ka 'ōlelo a mākou e ho'ōla ai i kā kākou 'ōlelo ma nā pū'ulu
- Ke kūkulu 'ana i nā 'ōnaehana e komo pū ai ke ka'ina hana me ka mīkini
- Nā 'ano maopopo o nā a'o 'ana i kauka'i ma luna o ke one hānau o ke kanaka
- He ala ka W'IH e moemoeā a maopopo ai ka 'ike ku'una 'Ōiwi
- Framing—ua like ka la'ana ma ke 'ano he kūpono a he kūpono 'ole paha
- 'O ka W'IH ma ke 'ano he lōina mo'omeheu hakuhiā— me he pena ki'i, pāheona, a hulahula paha
- He pilina kino 'ole paha ('a'ole pono e kino kanaka)
- Inā he pilina kino 'ole paha, 'a'ole lawa ke kū wale 'ana nō i kou pilikino. Pehea e kūkulu 'ia ai he 'ōnaehana e la'a 'ole ana me he pilina kauā lā
- 'A'ole pono e kino kanaka ka W'IH
- E a'o i ka "ikepili palekana" ma kahi o ke kālailai 'ole i ka 'ike
- He ala ka W'IH e hō'ike ai i ka mo'omeheu
- Haku kākou i mau kinona hou o ka 'ōnaehana a'o mo'omeheu
- 'O ka mana'o Anishinaabe 'o askabewis a i 'ole 'o "skabe": he maha'oi 'ole, akā he kākō'o i ka 'aha i hō'ihī 'ia e ke kaiāulu
- He mea lauaki ka W'IH
- 'A'ole he mea hō'ia i kekahi 'ano 'enehana ho'omua mai nā 'enehana ho'omua 'ē a'e
- He ho'okuana'ike ko ka W'IH e kū hō'ailona ana no ko kākou mau mo'omeheu
- Pehea e pani 'ia ai nā me'e i loko o kā kākou mau 'ōnaehana?
- Inā mālama kākou i ka W'IH ma ke 'ano he 'ōnaehana, e 'ike 'ia paha kākou he kanaka 'ole, elm. E

‘ōlelo wale ana nō paha nā kūpuna i nā mea kino ‘ole, ua pono na‘e e hō‘ihi aku i ke kino kanaka ‘ole

- Me ka loa‘a ‘ole o ka mo‘omeheu, ua hiki i ka W‘IH ke a‘o no ka mo‘omeheu mai ka ‘ikepili mai
- Mana‘o laulā ‘ino: he mau hakuhia pū kākou a ma luna a‘e o nā mana‘o laulā ‘ino e waiho mai ana i mua o kākou
- Kia‘i– ‘a‘ole no kākou ka ‘ikepili, hō‘ike maila ko kākou mau loina i ke ala e ho‘ohana ‘ia ai (keoni). I mea aha?
- Pehea e ‘āwili ‘ia ai ka loina mo‘omeheu i loko o ka ‘ōlelo helu lolo uila. ‘O ka Blended Identity Model, a he aha nā mea i pa‘a i loko o ka ‘oloke‘a ‘ikepili a me ka ‘ole.

Ma kahi mahele aku mākou i ho‘ohana ai i kēia mau kumuhana e haku ai he ‘ehiku pū‘ulu o nā kumuhana nui:

Pū‘ulu

- He aha ka wehewehena no ke kūpono i loko o ke ao W‘IH?
- Pili ka mana‘o ho‘okele a me ke ka‘ina hana i ke kumu nui
- ‘O ke kuanakanaka e haku ‘ia ai ka ‘ōnaehana
 - Ke ala e kuana‘ike ai
 - Ke ala e ‘ike ai
 - Ka pono e hō‘ihi ‘ia
 - Ka palekana W‘IH: ke kuleana ‘o ka ho‘iho‘i
- Ka Hiki a me ka Mana
 - Ke akāka o ka mana‘o ‘oia‘i‘o
 - Na wai e ho‘ona‘auao i ke ākea a ‘oihana paha?
 - Ke kikoho‘e pū
 - Ka po‘e e ho‘ā mau i ke ahi
 - Ka ho‘ona‘auao ho‘oholo, ‘a‘ole ‘o ka paepae hō‘oia wale nō
 - Nā hemahema o ka pono hana
 - Ka ‘Ike Ho‘ohana pū (kikoho‘e)
 - Mo‘okū‘auhau: ma luna o ka ‘ikepili, na wai i kūkulu, pehea i haku ‘ia ai
 - Ke akāka; ka wehewehena, unuhi ‘ana ma waena o nā mana, ka ‘ikepili
 - Ke ola maika‘i kaiāulu, ke ola kaiāulu
 - Ke kū‘ē a me ke kū‘ē ‘ia
- He kama‘ilio ākea a‘e no ke ala e kūkulu ai ka AI i Lula.
 - Ke ea ‘ikepili
 - Ka mana‘o ho‘okele kūpono
 - Ka hānai W‘IH: He aha ko kākou kuleana i ka W‘IH?

- Kahi mau lula kūikawā? He mana'o kūpono i palupalu
- Ka Peki i Hope e Holomua: ke kuleana i ka wā i hala, ka wā e kū nei, a me ka wā e hiki mai ana o ke kaiāulu
- Ka 'ōlelo
- Haudenosaunee Structure of Consensus (Nā lula i kupu no ke kuapapa, ka mana, a me ka pono)
- E kūkulu i ka lula W'IH e kūpono no ke ākea
- He aha ka LULA: KAPU, nā lula e kupu a'e ana mai ka 'ike o kekahi wahi mai a i 'ole paha kekahi ka'ina
- Nā mea kūpono no ke ao kūlohelohe
- Nā Mana
 - W'IH i loko o ka loina mo'omeheu a me ka haku: hō'ike ha'awina na'au
 - W'IH ma ke 'ano he kuana'ike e nanalu ai no ko kākou mo'omeheu pono'i
 - W'IH he mea pono 'Ōiwi
 - 'O ka helu lolouila he mākēlia mo'omeheu: nā pono hana a me ka hō'ikena
- W'IH ma ke 'ano he:
 - He lā'au lapa'au: loina mo'omeheu, loina pili 'uhane, waihona kūpuna
 - He unuhi a he mālama
 - He mea kōkua: he ho'ōla a he mālama

Ua pani mākou i ka lā 1 i ka ho'i 'ana i ka nīnau 'o ke Kia'i 'ana i ka 'Ike Mo'omeheu 'Ōiwi.

Kakahika, lā 2

2 Malaki 2019 | LAVA Lab, ke Kulanui o Mānoa, Honolulu

Ua wehe 'ia ka lā 'elua me ko Kumu Kekuhi Kealiikanakaoleohaililani no ke mele oli E Hō Mai, a laila i alaka'i maila i ke oli 'ana e kau kūpono ai ka no'ono'o no ka hana huahua pū 'ana.

A laila i nā'ana ai i ka Lā 1, ma nā pū'ulu kiko'i 'ehiku. Ua ho'oka'awake i 'ehiku pū'ulu e kama'ilio ai a ho'ohāiki i ka 'ehiku he 'elima.

- Ke Ea Lakopa'a: 'Aha, Pono, Hilina'i, a Kuleana
- Ke Kūkulu Kūpono: 'Ohana a Hō'ihī
- Ka 'Ōlelo, Ka Honua, a me ka Mo'omeheu; a i'ole Ka Pilina a me Ke Ao Kūlohelohe: Lewa Manawa Wahi
- Ka Loina Pāheona he Loina Make'e: Pāheona ma ke 'ano he Hō'ike o ka Loina 'Ōiwi, a pēia ka Lapa'au a me ke A'o Mo'omeheu
- W'IH he Skabe (mea kōkua): Ke Kōkua aku Kōkua mai a Mahalo



Nā Limahana i kōkua

Nā Kānaka i Komo i ka Hālāwai 1 (Aia nā piliolana i ka 'Ōlelo Pāku' i C)

Angie Abdilla

Noelani Arista

Kaipulaumakaniolono Baker

Brent Barron

Scott Benesiinaabandan

Michelle Brown

Melanie Cheung

Meredith Coleman

Ashley Cordes

Joel Davison

Kūpono Duncan

Rebecca Finlay

Sergio Garzon

D. Fox Harrell

Peter-Lucas Jones

Kekuhi Keali'ikanaka'oleohaililani

Megan Kelleher

Suzanne Kite

Olin Lagon

Jason Leigh

Maroussia Levesque

Jason Edward Lewis

Keoni Mahelona

Caleb Moses

Issac 'Ika'aka Nahuewai

Kari Noe

Danielle Olson

'Ōiwi Parker Jones

Caroline Running Wolf

Michael Running Wolf

Marlee Silva

Skawennati

Hēmi Whaanga

Tyson Yunkaporta

Awakea, Lā 2

Ua kama'ilio 'ia nā kumuhana 'elima no ke awakea, a laila i nā'ana ai ka 'oloke'a no nā hana hou aku ma hope o ko mākou ha'alele 'ana.

Hālāwai 2

He 'ewalu lā o ka hālāwai 'elua, he kākau a he pāheona. Mālama 'ia i loko o 'elua hale i kahi 'o Kāhala i Honolulu. 'O ke kia ka ho'ohua 'ana mai he mau 'ōlelo e pane ana i nā nīnau i hāpai 'ia ma ka Hālāwai 1 a me nā kama'ilio i pili. E nānā i ka papa manawa i ka 'Ōlelo Pāku'i D ma ka hopena o ka palapala.

Ua palupalu iholā ka papa manawa o ia lā, ma muli o ka mālama 'ia ma ke 'ano he noho papa 'ana, i la'ana, ua ho'okō lākou i nā mahele pono'i ma ka pākahi a me ka pū'ulu. Ua nā'ana mākou ma ka lā 1, a laila he mau hō'oiā 'ana ma ka hopena o nā lā i mea e ho'oka'a'ike ai i ka hana pāhana o ia lā. He 'ekolu pū'ulu nui:

- Mana: ua kāpili kēia pū'ulu he mana mua o ka polokalamu Hua Ki'i.
- Wehewehena: ua kūkulu pākahi kēia pū'ulu he no'ono'ona no ka moemoeā o kēia mua aku.
- Pō'aiapili: ua kia ka no'ono'o ma luna o ke kākau ho'olauna, pepa pākahi a me ka ho'onoho 'ana i ka pepa kūlana ma ke 'ano he kino nui.

A ka pau 'ana o ka hālāwai 2, ua pa'a ke kāmua o ka hapanui o kēia mea he pepa kūlana.



Wehewehena: Nā Kānaka i Komo i ka Hālāwai 2

Ko ka Hālāwai 2

Noelani Arista

Scott Benesiinaabandan

Michelle Brown

Melanie Cheung

Joel Davison

Suzanne Kite

Jason Edward Lewis

Caleb Moses

Issac 'Ika'aka Nāhuewai

Kari Noe

Caroline Running Wolf

Michael Running Wolf

Hēmi Whaanga

3.2

W‘IH: he (r)evolution hou a i ‘ole he ho‘okolonaio hou i ka po‘e ‘Ōiwi?

Na Hēmi Whaanga

“He mo‘olelo i ma‘a iā kākou i kēia mau lā: ua hiki mai ke au o ka Waihona ‘Ike Hakuha (W‘IH) a he pau mai koe o ka hana a ho‘oholo kanaka i ka W‘IH.”¹

‘Ōlelo mau ‘ia, ‘o ka mea holo mau ka ho‘ololi; ‘a‘ohe hiki ke ‘alo a‘e. Ke ho‘omaka e ka‘a ka mana a ma kona wā kūpono, ‘o ka ho‘ololi akula nō ia. Ma ko ke ao kāhuli ‘ia ‘ana e ka ‘enehana a me ka ‘epékema hou, no ka pūnaewehe o nā mea a pau a me ka W‘IH, he weliweli paha ka hiki i ka W‘IH ke lilo he mea ho‘ololi no ka po‘e ‘Ōiwi. Ho‘oholo ma ka nui, ka pohihihi, a ulu loa ka holomua wawe

¹ “It’s a familiar story these days: the era of Artificial Intelligence (AI) has arrived, and AI will soon render human labor and decision making obsolete.” Mateescu, A., & Elish, M. C. (2019). *AI in context: The labor of integrating new technologies* (Data & Society report), p 8. <datasociety.net/wpcontent/uploads/2019/01/DataandSociety_AIinContext.pdf>.

loa o ka 'enehana a me ka hakuaho'ou² i ke ala e ho'oka'a'ike, launa, ki'i, ka'ana, a ho'olaha ai i kā kākou 'ike a me ka 'ikepili. He mea hiki 'ole ke 'alo a'e ka W'IH no ka po'e 'Ōiwi?

'O ka 'ike i pa'a i nā 'ohana, nā kaiāulu, nā nāki, a me nā loea, he kumupa'a nō ia no nā hanauna. 'O kēia kumu waiwai 'o ka 'ōnaehana 'ike 'Ōiwi, he hakuaho'ou, he pa'a pū, a he 'ōnaehana nohona i pa'a loa i loko o ka nohona 'ōiwi.³ Mai loko mai nō o nā mo'olelo, nā mele, nā pāheona, nā inoa wahi pana, nā hula, nā 'aha, nā mo'okū'auhau, nā akakū, nā wānana, nā ha'awina, a me nā 'ōkuhi, i ili ai kēia mau 'ōnaehana mai ka waha aku mai kekahi hanauna mai a hiki i kekahi aku. Ma ka pakalaki nō na'e, pā koke nō ka po'e 'Ōiwi a pēlā pū ka 'ōlelo a me ka mo'omeheu i ka ho'okolonaio honua a me ka pahuhopu o laila, 'o ka na'i 'ana ma ke 'ano he ho'okahi ma ka mo'omeheu, ka pilina kanaka, ka pili kanaka, a me ka ho'okele waiwai.

Ma ka na'i 'ana ka ho'onalo. Ua 'ōlelo 'ia, ma ka pau 'ana o kēia kenekūlia, he 'anehalapohe ana nō ka hapalua o nā 'ōlelo o ka honua.⁴ 'O ka nui a hapanui paha ka 'ōlelo 'Ōiwi ma ka pakalaki. Ke nalo ka 'ōlelo, nalo pū ke ka'ā i pili i ke kālai'ōlelo a kālaimo'omeheu o ka 'ōnaeao. Inā pau ia mau 'ōnaeao, he pau pū o ka mauili, o ka mō'aukala, o ka mo'omeheu, a ma ka hopena, 'o ko kākou mana iho.⁵ Ma ka pi'i 'ana ho'i o ka papaha o ka na'i 'ana auane'i, he ho'onui ka W'IH i ia ho'ololi 'ana, he nalo?

Ma ka hui 'ana aku nei o nā loea mo'omeheu a me nā loea 'enehana i Aotearoa, ua nīele aku au i kahi mau nīnau e ho'oulu 'ia ai nā mana'o a me nā hali'a no ke ka'ina hana Māori, no ke kuana'ike o ka honua a me ka 'enehana a me ka hakuaho'ou.⁶ Ua kia ko mākou mau kūkā 'ana ma luna o ka hopena o kēia mau 'enehana hou, e like me ka 'enehana akakū, 'enehana akakū 'oia'i'o, a me ka 'enehana akakū hui pū 'ia, no ke a'o mīkini a me ka W'IH ma ke kahua o ka 'ike a me ka 'ōlelo. Ua pāhola kā mākou kūkā 'ana no nā kumuhana hoihoi like 'ole e like me ke ea 'ikepili, ka lula 'ana, ka 'e'e 'ana, ka po'aiapili, ka ho'okele 'ana, ka ho'āhu 'ana, a me ka wā e hiki maila; no ka IP a me ka palapala ho'okuleana; ka helu lolouila a me ka hiki ke ho'opau kolonaio o lākou, no ka helu 'ikepili Māori, nā kahua Māori, ka W'IH Māori a me ka mauili Māori; ka ho'opalekana 'ana i nā 'ōnaehana 'ike; a me ka pā'ewa'ewa a me ka ho'okae. 'O nā pane he nui wale, ua kū a'e nei kekahi na ka polopeka 'o Rangī Matamua: 'O ka W'IH: he "(r)evolution" hou a i 'ole he ho'okolonaio hou i ka po'e 'Ōiwi? Ua kā'ili 'ia ko'u no'ono'o a pēlā nō ka po'e a pau o ka lumi. No'ono'o akula mākou: hiki anei i ke akamai, he waihona 'ike hakuha paha, hiki eni ke ho'okolonaio i kekahi mea a i kekahi kanaka hou aku paha?

Pinepine ka wehewehe 'ia o ka ho'okolonaio, he komo hewa a na'i 'ino no ka ho'okolonaio pono'i iho nō,

² hakuaho'ou - innovate. Na Dr. William Wilson, he polopeka ma Ka Haka 'Ula o Ke'elikōlani i haku.

³ Smith, L. T., Maxwell, T. K., Puke, H., & Temara, P. (2016). Indigenous knowledge, methodology and mayhem: What is the role of methodology in producing indigenous insights? A discussion from Mātauranga Māori. *Knowledge Cultures*, 4(3), pp. 131-156.

⁴ Thomason, S. G. (2015). *Endangered languages* (Vol. 1). Cambridge, UK: Cambridge University Press.

⁵ Nuwer, R. (2014, 6 June). *Languages: Why we must save dying languages*. BBC. <bbc.com/future/story/20140606-why-we-must-save-dying-languages>.

⁶ See <softchallenge.govt.nz/research/atea>.

a i 'ole he 'ōnaehana komo ne'e hewa ma luna o ka po'e 'Ōiwi o kekahi wahi. He pili nō ia ho'okolonaio 'ana i ka na'i 'ōlelo, na'i 'āina, noho hewa a me ke kāohi. 'O ka mana'o o ka ho'okolonaio o ka mo'meheu, ka 'ōlelo, a me ka na'au, hana 'ia "ma ka 'ōnaehana no'ono'o ma o ke ala e launa ai ka po'e ma ka 'ōnaehana aupuni. I la'ana, ma o ka 'ohana, ka lōina, ka mo'omeheu, ka ho'omana, ka 'epekema, ka 'ōlelo, ke kaila lole, ke ki'ina a'o, ke kālai 'āina, ke kūlele paho, ka ho'ona'auao, a pēlā wale aku."⁷ 'O nā kalamana'o, e like me Frantz Fanon, nā mea nāna i kākau no ka ho'omau 'ia o ka papahana kolonaio me ka mana'o, a 'o nā akeakamai 'Ōiwi e like me Linda Tuhiwai Smith lāua 'o Ngūgĩ wa Thiongo nā mea nāna i paio no ka ho'opau ho'okolonaio⁸ o ko kākou 'ōnaeao no'ono'o.⁹ Palapala 'o Thiongo ma *Decolonising the Mind*:

" 'O ka na'i ko'iko'i loa ka na'i 'ana i ka 'ōnaeao no'ono'o¹⁰ o ka po'e i ho'okolonaio 'ia, 'o ke kāohi 'ana i ka mo'omeheu, 'o ke ala ho'i e 'ike ai ka po'e iā lākou iho a me ka pilina i ke ao. 'A'ole kō ke kāohi polikika 'ana a kō ka na'i 'ōnaeao no'ono'o. I mea ka pilina kanaka kekahi i kekahi e kāohi ai i ka mo'omeheu o ka po'e."¹¹

He hihia mau, no ka po'e 'Ōiwi o ka honua, ka pā hewa 'ana i ke kāohi no'ono'o. I la'ana o ka ho'okolonaio o kēia au, pehea no Cambridge Analytica, 'o ke kikowaena pa'a ia o ka hihia o ka 'ikepili Facebook, na Cambridge Analytica nō i hō'ili'ili hewa i ka 'ikepili kanaka ma nā miliona mai nā kahuapa'a Facebook pono'i me ka 'ae 'ole 'ana o ka po'e, i mea ho'i e ho'ohana 'ia ai ia 'ikepili no ka ho'olaha 'ana.¹² He hō'oiā 'i'o nō kēia hana i ka lawena ho'okolonaio maoli me nā pā'ewa'ewa e kū nei, he ho'omau i ke kaulike 'ole, a he pāku'i pū i ka hilina'i 'ole o ke kaiāulu. Ma ke 'ano he pane, ua puka mai nō he pāpā'ōlelo 'ana e 'imi aku ana i ka ha'ina no kēia 'ano lawena, i mea e ho'okā'oi a'e ai i ka pono o ke kaiāulu, ka 'āina, a me ka po'e. Ua hana 'ia aku nei nō nā 'ano palapala hō'oiā a hō'ike paha, i ka ho'okahua 'ana i nā lula a me nā 'ānu'u no ka W'IH ma ka 'ao'ao 'oihana, ka 'ao'ao kūkulu 'oihana, a me ke kūkulu mauō 'ana.¹³ Ua pākākā 'ia kēia mau lula a 'ānu'u paha no ke kia i ka pono a me ke keu

⁷ "through the transmission of mental habits and contents by means of social systems other than the colonial structure. For example, via the family, traditions, cultural practices, religion, science, language, fashion, ideology, political regimentation, the media, education, etc." Dascal, M. (2009). Colonizing and decolonizing minds. In I. Kuçuradi (Ed.), *Papers of the 2007 World Philosophy Day* (pp. 308-332). Ankara, Turkey: Philosophical Society of Turkey, p. 309. <m.tau.ac.il/humanities/philos/dascal/papers/Colonizing and decolonizing minds.doc>.

⁸ Decolonization

⁹ See Fanon, F. (1990). *The wretched of the earth*. London, UK: Penguin; Thiong'o, N. (1986). *Decolonising the mind*. Portsmouth, N.H.; Harare: Heinemann Educational; Zimbabwe Publishing House; and Smith, L. T. (2012). *Decolonizing methodologies*. London, UK: Zed Books.

¹⁰ Mental Universe

¹¹ Thiong'o, N. (1986). *Decolonising the mind*. Portsmouth, N.H.; Harare: Heinemann Educational; Zimbabwe Publishing House, p. 16.

¹² Crabtree, J. (2018). *Cambridge Analytica is an 'example of what modern day colonialism looks like,' whistleblower says*. CNBC. <cnbc.com/2018/03/27/cambridge-analytica-an-example-of-modern-day-colonialism-whistleblower.html>.

¹³ See Renda, A. (2019). *Artificial Intelligence – Ethics, governance and policy challenges (Report of CEPS Task Force)*. Brussels: Centre for European Policy Studies. <ceps.eu/wp-content/uploads/2019/02/AI_TFR.pdf>;

pono o kānaka; nā pono kaulike a akamai paha; nā pono 'ikepili a kū'oko'a paha; nā pono ka'ana a pāpā 'ia no ka W'IH me ka mana 'ae'oa e hō'eha a ho'opunipuni paha i ke kanaka.¹⁴ Kāka'ikahi nō na'e ke kūkā pono 'ia o nā pono 'Ōiwi, nīnūnē a me nā hopohopo ma kēia kūkā honua 'ana mai kekahi palapala mai i ho'omākaukau 'ia e ka Australian Council of Learned Academies (ACOLA), ka hui nāna i kūkā no ke olapono, ke kaulike, ka 'ae'oa a kū'oko'a paha o ke ea 'ikepili 'Ōiwi.¹⁵

Eia ke kū nei ma ke kapa o ke ka'apuni 'enehana e ho'ololi aku ana nō i ke 'ano e noho a hana ai kākou a pēlā nō ke 'ano e pili ai kākou. Ma kona 'ano, kuana'ike, a pohihihi paha, 'a'ole ana kēia liliuēwe 'ana e like me kekahi mea a ke kanaka i 'ike mua ai. 'A'ole nō i maopopo ke ala e hō'ike 'ia ai, ua maopopo na'e kēia: he pono nō e ho'ononiakahi a akāka ka pane me ka maopopo like o nā 'oihana a pau ma ke aupuni a kū'oko'a paha mai ke ao kulanui a i ke ao kaiāulu^{16, 17}

E ho'i mai i ka nīnau ho'okele o kēia pepa: 'he (r)evolution hou a i 'ole he ho'okolonaio hou i ka po'e 'Ōiwi?' 'A'ole e hiki ke pane 'ia kēia 'ano nīnau a me ka hopena o ka ho'okolonaio 'ia a me ka palena pono a pono 'ole paha, 'a'ole nō i loko o ka pō'aiapili o kēia pepa ho'okahi a kama'ilio wale 'ana aku nō paha. No kēia hanauna nō na'e, 'o ka po'e "ōiwi 'enehana,' 'homo zappiēns,' 'net generation,' 'millenials,' 'i-generation'—No ia hanauna ho'i i hānai a lu'u a hō'ike 'ia ka 'oi o ka 'enehana kikoho'e hou—kēia mau kuleana e 'auamo. He ho'ololi hou nō ka W'IH i ke ala e 'a'a 'ia ai ke kahua o ko kākou mau 'ōnaehana 'ike. A no laila, he ko'iko'i nō ka ho'omoemoē 'ana i ke akakū e komo ai ka W'IH ma kēia 'revolution' i mea e o loa aku ai ko kākou 'ōnaehana 'ike, kā kākou 'ōlelo, a me ko kēia mua aku. A no laila, he ko'iko'i iho nei nō ke ho'okahua aku i nā lula a me nā kānāwai o ka ho'ohana 'ia i ka W'IH i mea e maopopo le'a ai ka ho'ohana 'ole 'ia no nā mea hewa o ka pā'ewa'ewa, ke kaulike 'ole, a me ka ho'olōkahi hewa o ka honua.

¹⁴ Walsh, T., Levy, N., Bell, G., Elliott, A., Maclaurin, J., Mareels, I.M.Y., Wood, F.M. (2019). *The effective and ethical development of artificial intelligence: An opportunity to improve our wellbeing* (Report for the Australian Council of Learned Academies, acola.org). Melbourne, Australia: Australian Council of Learned Academies. <acola.org/wp-content/uploads/2019/07/hs4_artificial-intelligence-report.pdf>.

¹⁵ See Renda, A. (2019). *Artificial Intelligence*.

¹⁶ We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society.

¹⁷ Schaub, K. (2016). *The fourth industrial revolution: what it means, how to respond*. *World Economic Forum* [para. 1]. <weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond>.

Papa Kūmole

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3.3

Nā Hālāwai Ho‘ona‘auao KH‘Ō W‘IH he Moemoeā o kēia Mua aku

Jason Edward Lewis

Ke loa‘a nei ko kēia mua aku, ‘a‘ole na‘e i hō‘ea i ne‘i nei.’

—Scott Benesiinaabandan²

He ala kēia mau hālāwai ho‘ona‘auao Ka‘ina Hana ‘Ōiwi a Waihona ‘Ike Hakuhiā (KH‘Ō W‘IH) “e ho‘oma‘ama‘a pū ai kākou.” Ma ke komo ‘ana i ke ao pilikino, ke ao ha‘awina na‘au, a me ke ao akeakamai, he ala ke KH‘Ō W‘IH e hō‘ike ‘ia ai ke kuana‘ike kūpono i ka mea ‘ālohilohi a me ka lilelile a e ‘āwili pū ‘ia me ka ‘aha o ka ‘ā‘ume‘ume o kēia au hou a me ka ‘aha mānoanoa o ko ko kākou mau kūpuna moe‘uhane, a haku hou ‘ia kahi ao hou. ‘U‘uku ka nui o ia mau wahi, a kāka‘ikahi ka

¹ “The future is happening It just hasn’t reached us Yet.”

² Benesiinaabandan, S. (22 May, 2019). Personal communication.

loa'a o ia mau ao e hui pū ana me ka nohona 'Ōiwi a me ka mohala o ke ao 'enehana o ka Haole e lula nui ana.

“Ulu ka mea a kākou e maka'ala ana.” wahi a adrienne marie brown (2017). 'O ka nīnau na'e, “pehea kākou e ho'oulu ai i ka 'upu o ka mana'o a ulu a'e i kahi mea nui a pa'a kūpono e hiō ai?”³4 'O ko mākou kia no kēia mau hālāwai ho'ona'auao ke kūkulu 'ana i kekahi mea e ulu a'e ana nō i mea nui a pa'a kūpono e hiki ai i ka po'e 'Ōiwi ke ho'oholo i ka hanana o ko kēia mua aku me kēia mau 'ōnaehana W'IH, a pēia aku ko kēia mua aku o kēia ao 'enehana pū. 'O ko mākou kia ke kūkulu 'ana i kahi mau moemoeā o kēia mua aku, i laila e wae'ano 'ia ai ka pā 'ana o kākou i kēia mau 'enehana, me ka ho'ononiakahi iho i ko kākou mau ka'ina hana mo'omeheu a me ke ka'ina hana e ho'oholo ana i ke au o ka 'enehana. 'O ko mākou kia ka ho'oulu 'ana he kū'ē huahua, he kū'ē aku i ka 'ae 'ana “hehe'e ka mea pa'a i ke ea.” A penei hou aku, no ka loa'a 'ana he kahua pa'a loa i loko o nā mo'omeheu 'Ōiwi e hailona 'ia ana e ke koloniao a e ho'ohana kākou iā kākou iho e holomua (hou) aku i ka wā e hiki mai ana.

Ua ākea a hohonu nui nō ho'i nā kūkā kama'ilio 'ana no ka KH'Ō W'IH. He ākea, 'oiai, ua ākea ka nānā 'ana aku i ke kālaikuhi'ike, mo'omeheu, a'o o ka mikini, koloniao 'ana, kia kū manawa, kālaikuhikanaka, kuhikuhipu'uone lako polokalamu a me ke kālai'ōlelo. He hohonu, 'oiai, ua 'eli iho i nā wao o ka mō'aukala 'Ōiwi, 'ōlelo a me ka mo'omeheu o ke kūlana o kahi mau 'Ōiwi kiko'i a me ko lākou mau kaiāulu. Ho'ohana mākou i ka 'ōlelo “Ōiwi” ma ke 'ano he ho'opili ma kahi o ka wehewehena no ka 'ili, he mahalo nui ho'i i ka mana'o mānoanoa o ko mākou mau mana'o me ka hō'ihī nō ho'i i ko mākou mau mea 'oko'a i waiwai a huahua.

Penei ke ala e ho'omaka 'ia ai ko kēia mua aku: ma ka no'ono'o ko'i'i 'ana.

Ma o ko mākou mau hālāwai ho'ona'auao, aia ma nā wahi 'Ōiwi i ho'oholo 'ia, ko mākou mau kūkā 'ana, a ma kahi i ola ai ka 'Ōiwi ma nā wahi like 'ole. Ua kūka'imana'o nā akeakamai lolo me ka po'e waiwai ma ka 'ike ku'una mo'omeheu, a pēia aku me nā akeakamai lolouila, a me ka po'e haku mele, a pēia aku nā kānaka mālama 'ōlelo me ke kanaka pena, a pēia nā kumu hula me nā kānaka mō'aukala i kūka'imana'o aku me nā 'enekia. Ua 'oia'i'o ka 'a'a 'ana: ua ma'alahi ka hā'awi pio i ka loiloi 'ana kekahi i kekahi no ka nui o nā 'ano ma'i'o like 'ole, nā mo'omeheu, a me ka polikika. Ua 'aha'ōlelo nō na'e mākou, ua pū pa'akai a ua kūka'imo'olelo no mākou, no ko mākou po'e, a me nā loina e pili pū ai mākou a pau.

Penei e 'ike maka 'ia ai ko kēia mua aku.

Ua moemoe 'ia nō ka 'āpōpō a i ia lā aku, a i ia mau makahiki 500 aku. Ua nānā pū 'ia nō ke ka'ina hana; ua pū pa'akahi; ua oli a hīmeni pū a'e. Ua ho'omoe 'ia aku nā ala i mua mai ka mō'aukala lō'ihī mai o ka

³ how [do] we grow what we are all imagining and creating into something large enough and solid enough that it becomes a tipping point

⁴ brown, a.m. (2017). *Emergent Strategy: Shaping Change, Changing Worlds*. Chico, California: AK Press, p. 32.

‘enehana loa a me ka ho’okolohua ‘epekema o ko mākou mau po’e, me ke ka’ana like pū aku i ke ala e hāpai ai ko mākou mau lōina he pūnāwai o ka ho’oholomua no ka ho’opili ‘ana me ke ao holo’oko’a a ma waena nō ho’i o mākou a me kā mākou mau pono e haku nei.

Penei e kaha ‘ia ai ke ki’i o kēia mua aku.

Ua kō mua he ‘elua lā, a laila he ‘ekolu mahina mai, he ‘umi lā ‘o ka noho ‘ana he mau wā e hiki maila, e kū nei, i hala nō ho’i, me ka hō’ike pū ‘ana i ke ea me ke kuana’ike kūpono e pahola aku ana i nā ma’i’o like ‘ole o ke akeakamai. Ua hāpai nā kānaka Anishinaabe no ka *oskabewis*, nā lima kōkua kahiau a hoihoi a me ka ‘ole: ke kāko’o ‘ike ‘ole ‘ia no nā kānaka e komo ana i ka ‘aha, a me ke ala e kāko’o mai ai ka la’ana ‘ōnaehana W’IH iā kākou—a pēia nō ho’i nā koina o mākou e ‘ai’ē aku ana. Ua hāpai nā kānaka Hawai’i no nā ke’ehina e kā ai i ka ‘upena, nā wao o ka ‘ae a mahalo ma waena, he koina ho’i no ia mau pilina—hō’ike ‘ia ma ka pule, oli, a me ke mele — nā ka’ina hana e hiki ana paha ke kū ma ke ‘ano he la’ana no kā kākou mau ‘ōnaehana lako polokalamu mai ke kahua mai o ka mālama kūpono. Hāpai maila nā kānaka Māori i ka hopohopo o ko lākou mau kaiāulu no ka ho’oili ‘ia ‘ana aku o ka ‘ike o ke keiki i ka mo’opuna, a nūnē mai no ka holopono paha o nā “‘anakē kino lamalama”⁵ i mea e mālama a ho’oili ‘ia aku ai ka ‘ike ma nā hanauna hou, a he hana pū me nā lālā o ke kaiāulu. Hāpai maila nā kānaka Coquille no ka ‘āwili ‘ia o ko lākou mau lōina mālama a hilina’i i loko o ka ‘ōnaehana W’IH i ho’ononiakahi ‘ia me ka ‘enehana “blockchain” i mea e kōkua ai i ka nāki ma ka ho’ohoo ‘ana i ke ka’analike a ho’opuka ‘ana aku i nā kumu waiwai o ke kaiāulu. Ua kama’ilio mākou no ke kālaikūlohea Blackfoot, a me ke kuhi ‘ana mai ke kākau ‘ana mai o kā Leroy Little Bear, he kūpono paha ka ‘ōlelo Blackfoot no ke kālai ‘ana i ke kālaikūlohea, a ua moemoeā ‘ia nā like lātoma ma waena o kekahi mau ‘ōlelo ‘ōiwi kiko’i a me nā iwi kino ‘enehana, a no ka ho’omaopopo ‘ana i ka ‘ike o ia mau mea e ‘a’a ai i nā ‘ā’ume’ume o ko kākou wā.⁶

Penei e hua ai ko kēia mua aku.

Ua no’ono’o nō mākou i nā ‘anu’u o kēia ahu: ka lako pa’a kuhikuhipu’uone a me nā ka’ina hana lako polokolamu nāna e hiki ke helu lolouila, a pēia aku ka ‘anu’u ‘o ka pi’i ‘ana mai kahi lako pa’a a’e; mai kahi silikone i ka puni uila i ka unu ‘u’uku i ka lolouila i ka pūnaewe; a laila a’e ka ‘anu’u o kahi lako polokalamu mai ka helu mikini i ka ‘ōlelo polokalamu i ke ka’ina kūpono i ka ‘ōnaehana, a me ke ala e pā ai kēlā a me kēia ‘anu’u i ke ka’ina hana ‘ōiwi. Ua moemoeā mākou inā paha ua ‘ōiwi kēlā mo’omeheu—‘o ka unu ‘u’uku ho’i i kūkulu ‘ia me ka mālama kūpono o ke kaiāulu Lakota e ho’okumu ana he hale ho’okahe hou; ‘o ka lolouila i kūkulu ‘ia aku me ka mana’o o kekahi pu’ukani Cree e kūkulu ana i kāna pahu lima; ‘o ka pūnaewe i kūkulu ‘ia me ka hahai pū i nā lōina Coquille e ulana ana i kāna pā cattail; he ‘ōlelo polokalamu i kākau ‘ia ma ke Crow i mea e hō’ike ‘ia aku ai ka ‘ike Crow no ka ‘ikepili a me ke ka’ina hana; he ‘ōnaehana na ke kanaka ‘epekema lolouila Cheyenne; he lau maopopo ka’ina huli ha’ina

⁵ anakē kino lamalama: holographic aunty

⁶ Little Bear, L., and Head, R.H. “A Conceptual Anatomy of the Blackfoot World.” *ReVision*, vol. 26, no. 3, Winter 2004, pp. 31–38.

e a'o 'ia ana me ka lōina 'Ōiwi no ka haku mele; 'o ka 'ōnaehana lula aupuni 'ana me ka hahai pū i ke kālāi'āina polikika Haudensonee; he W'IH i hi'i 'ia e ka mana'o Kanaka Maoli no "'āina," "'ohana," a me ke "kuleana."

Penei e kūkohu ho'okolohua 'ia ai ko kēia mua aku

Nīele 'ia kā mākou mau nīnau— 'a'ole ho'i 'o kā ka mea kolonaio mau nīnau. Pehea e kūlulu 'ia ai kēia mau hāme'a? Na wai e kūkulu? Me wai e pili ai ma ka wā e laha a'e ai i ka honua? Pehea e mālama 'ia ai ka pilina i ko kākou mau kaiāulu? Pehea e mālama ai ke kaiāulu i kēia mau pilina? Pehea e ho'okino 'ia ana? Pehea e kōkua aku ai i ka ulu a ola o ke kaiāulu? Pehea e 'ike 'ia ai e nā mea kino 'ole? Mau ana nō anei ia mau mea ma ka hanauna pāhiku? No ka hapanui o mākou e hana ana i ka 'oihana 'enehana hou loa, he maha o ka na'au ke kia 'ana i ia mau nīnau ma kahi o kahi o ka luhi o ka luna 'enehana nāna e hahai wale aku ana nō i kona huelo iho ma ke kahua 'o ke kālaikūhi 'ike 'ole, ka ho'okae mo'omeheu. He ala ko kā kākou mau nīele 'ana e 'aha pū ai ka 'ike i pa'a i ko kākou mau kaiāulu a me ka 'ike e a'o mau mai ana nō. He hō'ike kā mākou mau nīele i ka 'ōpio no ke ala e ho'olako mai ai ko kākou 'ike i nā lako e pono a mahu'i ai no ke ao holo'oko'a a pehea e a'o a ola ai mai ia 'ike mai. He hō'ike kā kākou mau nīele i ko kākou ea ma luna o ka waihona no'ono'o, ma luna o ko kākou mau nohona pono'i a ma luna ho'i o kēia mua aku o kākou.

Pēia e hō'ea mai ai ko kēia mua aku.

Papa Kūmole

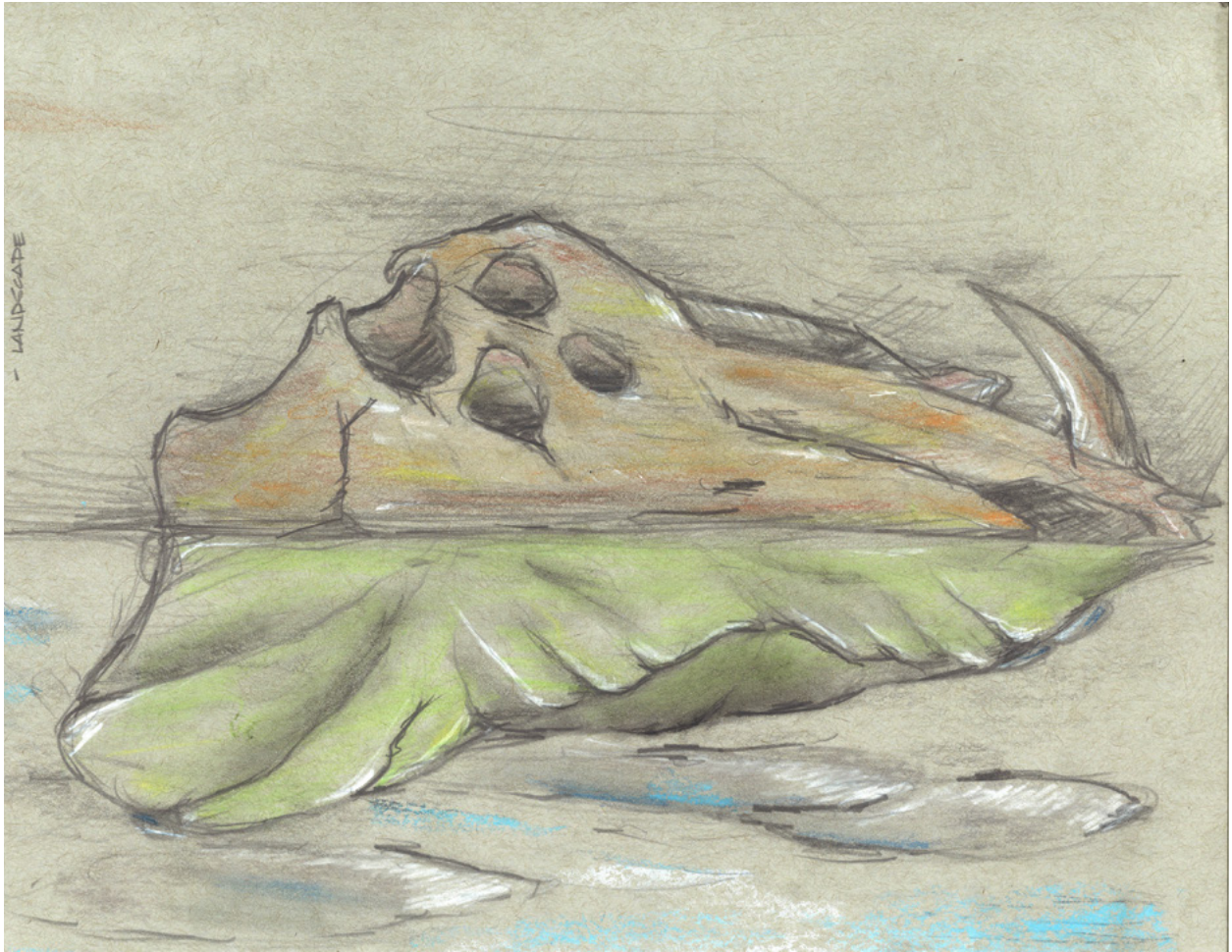
brown, a.m. (2017) *Emergent Strategy: Shaping Change, Changing Worlds*. Chico, California: AK Press, 2017.

Little Bear, L., and Head, R.H. "A Conceptual Anatomy of the Blackfoot World." *ReVision*, vol. 26, no. 3, Winter 2004, pp. 31–38.

SECTION 4

Vignettes

- 4.1. Gwiizens, Ka Luahine a me ka Hāme‘a He‘e
Scott Benesiinaabandan
- 4.2. Ka Makana ‘o ka Pūpū a me ke Ahi:
Ka ‘Āwili ‘ia o ka Hilina‘i a Mālama
Ashley Cordes
- 4.3. Pāhā
Jason Edward Lewis
- 4.4. Ke Ala e Kūkulu Kūpono ‘ia ai kekahi Mea
Suzanne Kite me ke kama‘ilio pū me
Corey Stover, Melita Stover Janis, a me Scott Benesiinaabandan
- 4.5. Ka ‘Oni i ka Wai ‘Ukele:
Ka Ho‘ōla Loina Euskaldunak me ka ‘Ōnaehana W‘IH
Michelle Lee Brown



Kamapua'a/kalo. Image by Kūpono Duncan, 2019.

4.1

Gwiizens, Ka Luahine a me ka Hāme‘a He‘e

cott Benesiinaabandan

adizookaan - mo‘olelo kahiko - kālaikuhikanaka

agwanem - pa‘a ma ka waha - ‘oloke‘a/kinona

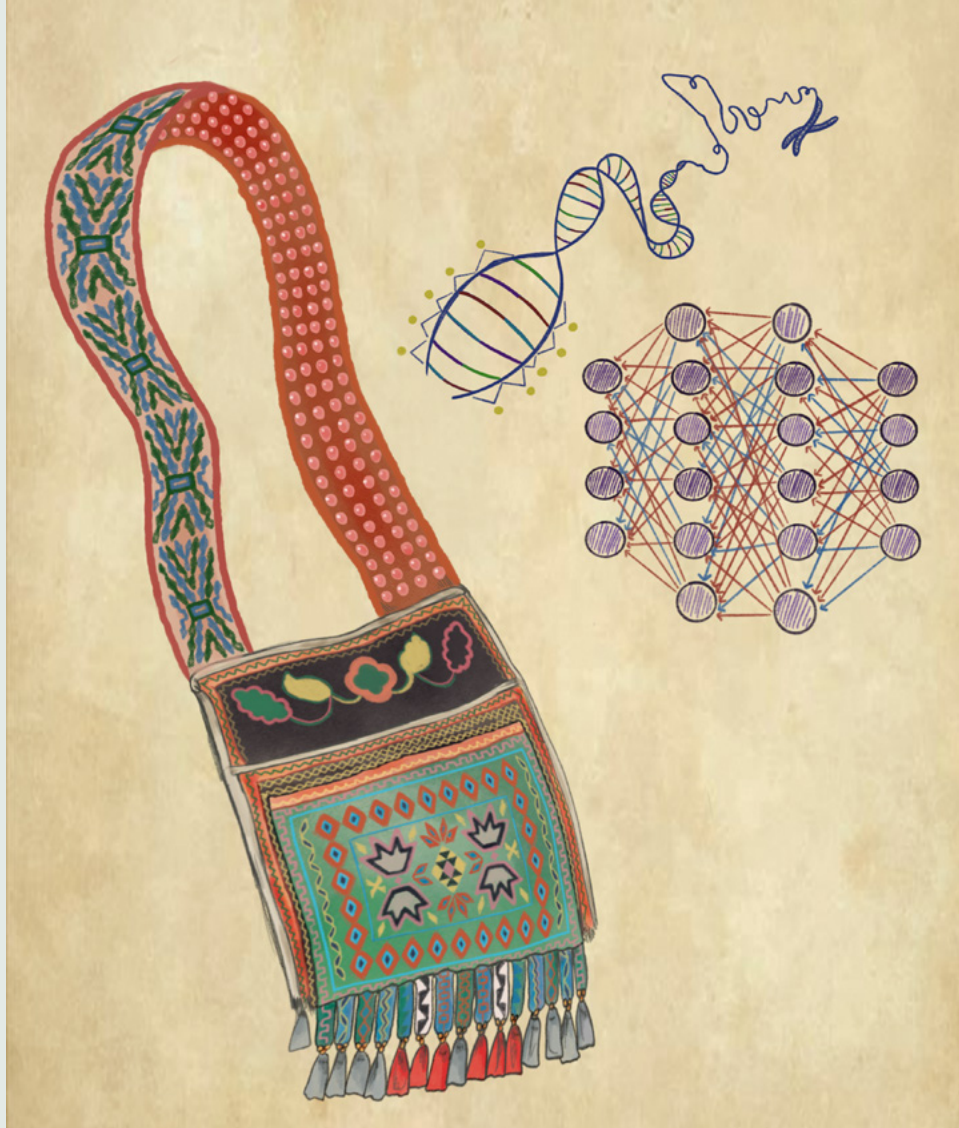
mamawi - ke alulike a lauaki - pilina kanaka

booshke giin - aia iā ‘oe - ea

“Inā he mea kanaka ka ho‘okomo ‘ana i kāu mea makemake i loko o kekahi ‘eke, ‘ie, lau, a ‘upena paha no kona ho‘ohana ‘ia, kona ‘ai ‘ia, a kona nani paha, a laila e lawe ‘ia aku i ka hale me ‘oe, a ma ka hale he ‘ano ‘eke a pū‘olo like paha, a unuhi a ka‘analike a ho‘āhu paha ‘ia paha no ke kau ho‘oilō i loko o kekahi pū‘olo koa a pahu lā‘au lapa‘au paha, a laila ma kekahi lā, hana like paha ‘oe,‘oiai, he kanaka, a ‘o ia ka mea e pono ai, a laila, he kanaka ‘i‘o nō au. Ma kona ‘ano piha, me ka ‘oli‘oli a no ka makamua.”

—Ursula Le Guin p. 151-152 ¹

¹ “If it is a human thing to do to put something you want, because it’s useful, edible, or beautiful, into a bag, or a basket, or a bit of rolled bark or leaf, or a net woven of your own hair, or what have you, and then take it home with you, home being another, larger kind of pouch or bag, a container, you take it out and share it or store it up for winter in a solider container or put it in the medicine bundle or the shrine or the museum, the holy place, the area that contains what is sacred, and then the next day you probably do much the same again-if to do that is human, if that’s what it takes, then I am a human being after all. Fully, freely, gladly, for the first time.” Le Guin, U. K. (1989). *The Carrier Bag Theory of Fiction*. In *Dancing at the Edge of the World: Thoughts on Words, Women, Places* (pp. 165-170). New York, NY: Grove Press. pp. 151-152.



‘Ōlelo wehewehe: ‘eke he’e. He ki’i na Kari Noe, 2019.

He mea ka Octopus Bag Device e hiki ke wehe ‘ia a ma ka nui ‘a’ole he pā hewa o ke ao kūlohelohe (ua hiki ke hemo me ka hoohopo ‘ole), he mea pākela o ka lonoa me ka ho’ohana pū i ka DNA ma ke ‘ano he ho’āhu a he lolouila uila (me ka ho’ohana i ka helu lolo uila). He mea kēia e pa’ana ma ka waho e nā niho o hope ma ka’e o ka niho a me ka pāpālina, kahi e momona ai ka DNA. Pili ka hāme’a iā hope o ke ā, kahi o ka niho ‘wisdom’ e ulu ai, a no ka liliuwe o ka iwi. He mea kēia hāme’a e pili ai ke kuekueni i ka iwi. Lalau a’e kekahi hi’ohi’ona mai ka waha a’e a noho ma kahi o ka puka ihu e ‘ae i ka pili feromona ‘O kahi nō ia o nā lonoa a kaulapa kekahi i kekahi, a pākahi.

*He mea lawa aku
 nā nīnūnē ‘āina a kumu waiwai
 no ko kēia mua aku liliuēwe,
 helu lolouila A waihona hō‘āhu.
 He mea pilikino kiko‘i loa kēlā a me kēia pae
 A no laila ke kāpuka a kākomo
 so nā ‘ōnaehana a he pākela a‘e ka mana,
 Ke kia‘i, a me ke ea o ko kekahi lolouila+OS
 No nā hopena o kēia au. He polokalamu ho‘i kēia
 Hāme‘a me ka mana‘o e ‘oi a‘e ka pilikino
 I mea e hō‘oia a unuhi ‘ia ai
 Ka mana a me ke kūlohelohe a kuluma
 O kēia ‘ano helu lolouila ‘ana.*

‘O kēia mau ‘eke Octopus a Bandolier kekahi lolina mai io kikilo mai ma Moku Honu, a keu ka ‘ikea ma ke kaiāulu ‘ōlelo Algonquin. I kinohi, ho‘ohana ‘ia ke ‘eke i wahi lā‘au lapa‘au a ‘aunaki/‘aulima paha. Ma hope o nā 1700, ua keu ka ho‘owehiwehi a pēlā ka make‘e ‘ia i ka po‘e e kaulapa ana kā lākou mau ‘eke. Ma ka mua, he ‘ili holoholona i lole ‘ia me ka wāwae a huelo pū, a ‘o ka hopena he kaila hou me ka lō‘ihi a‘e o ke ‘eke, a no laila kona nānā ‘ana he he‘e. He ‘ehā pa‘a me ka ‘elua ‘au i pili ma ka hopena i ke kapa a pele paha, (ke ‘ano ho‘i o ka pele e ho‘oku‘u ana i ka ‘uhane ‘ino), a ho‘owehi ‘ia nā ‘ao‘ao ‘elua. Ma kēia mo‘olelo, he ‘ōlelo hālikelike pākela no ka ‘oloke‘a mo‘olelo. ‘O kekahi mau hāme‘a i loa‘a ma loko o ke ‘eke He‘e, a he pili i ka W‘IH, nā ‘kinona’ a me ke ala e ili ai ka ‘ike i ke kaiāulu. A ma kēia mo‘olelo i ‘ike ‘ia ai ka hāme‘a ‘eke He‘e i wahi ‘ia i ka hainakā ‘ula‘ula, a i loko he ‘eke uliuli a ke‘oke‘o.

Ningoding ayindaawag...
 [ma kekahi lā...]

Ho‘omaopopo nō ho‘i au ma ko‘u mau iwakālua, i ka makahiki hope o ka ho‘opau kekelē mua puka, e noho ana ma ke Kulanui ‘o Winnipeg ma kahi waihona puke kūikawā a eia ma ka heluhelu mo‘olelo pōkole. Ua loa‘a kēia mo‘olelo i loa‘a ulia ia‘u a ‘a‘ole i hiki ke ha‘akuhi, ho‘omaopopo, a loa‘a paha ia‘u i loko nō o ko‘u ho‘ā‘o he mau manawa. A i loko nō o ka hiki ‘ole ke loa‘a mai, mau nō ka hāli‘a ikaika o ka pā ‘ana o‘u i kēia puke pōkole.

A hala iho nei he ‘elua kekeka a ‘o ia mau nō ka pa‘a ma ko‘u waihona no‘ono‘o. ‘O ka mo‘olelo, ke ‘ano o ka puke, nā ki‘i, ke ao a me ka lā, ke pākaukau a‘u i noho ai. Ma ia wā [lā 1 ‘Apelila 2001], ‘a‘ole i nui nā mea i pili i ka mo‘olelo i ka W‘IH [o kēia wā a me ka wā e no‘ono‘o ‘ia]. He wahi nui nō na‘e i waiho ‘ia mai ka moololo mai no ka pilina a kākou me ka ‘enehana. He palapala ‘āina paha ka mo‘olelo e ho‘okele ai kākou i ka pilina o ka W‘IH, ‘a‘ole na‘e i akāka ia‘u ma ke komo ‘ana i ka papahana Ka‘ina Hana a W‘IH [2019].

Mai ka makahiki 2001, ua kupu pinepine mai kēia mo'olelo ma ke 'ano nui. Ua ho'ohana 'ia kekahi mau 'enehana, i kuluma a ho'okolo 'ia paha, ma kēlā a me kēia lā o ka nohona a pāheona. I loko o nā makahiki, ua heluhelu a ho'olohe aku nei i mau haneli adizkookaan [mo'olelo kapu] i haha'i 'ia ma ka wā like, me kekahi pū'ulu me'e i like. 'O kahi mea mau ke kanaka a me ka nāhelehele a me ka hā'awi makana ko'iko'i 'ana ma hope o ka paio a ho'okūkū paha. 'O ka pilina kūloko me ka 'enehana (laulā) a W'IH (i kiko'i i kēia pāhana) a 'o ka'u hana pāheona, he kahua nō kēia mo'olelo me ka maopopo 'ole paha.

Ma ka loa'a 'ana o ka wā e kākau a haku ai paha no ka W'IH, e kali mai ana nō kēia mo'olelo iki. Ua koho au e ho'i 'ole i ka 'imi i ka mo'olelo, e kūkulu na'e ma luna o ka no'ono'o 'ana a me ka pilina lō'ihī kekahi me kekahi, a me nā mo'olelo i 'ano like i heluhelu a ho'olohe 'ia.

He mo'olelo a'e ana kēia i kahua ma ke kūmole i pōina 'ia, i wehe koke 'ia mai nā no'ono'o 'ana mai no ka wā hohonu, a ho'omaopopo iho nei ma ko'u 'ano iho he pāheona a he Anishinaabe e kauka'i ana i kēia pāhana i kēia wā.

Ningodīng ayindaawag, miinawaa...

[ma kekahi lā, ma kekahi lā hou...]

... ua loa'a he kūlanakauhale a i loko he Keikikāne. 'A'ohe ho'omaopopo 'ana i ko ia nei hō'ea mai, 'a'ole ho'i i 'ike ka 'elemakule a me ka luahine no ke Keikikāne i kapa pinepine 'ia 'o *Ninga a me Noos a 'o Kookum a me Mishoomis*. 'O kona hō'ea 'ana mai i kēia kūlanakauhale, 'a'ole i li'uli'u i ka wā i hala, 'oiai, mau nō 'o ia he Keikikāne. I loko na'e o kahi e noho ai ka adizkookaan a me ka memoryspacetime, kekahi mau mea 'ē loa a me ka po'e o ia kūkalanakauhale a ke Keikikāne e kapa ana he home, 'a'ole i nīele 'ia ia mau 'ano nīnau.

A eia mai ua ma'i li'ili'i ke kūlanakauhale o ke Keikikāne i weliweli a 'ike 'ole 'ia. I loko nō o nā ho'ā'o kūpono 'ana o ko ka po'e ho'ōla, 'a'ole na'e i hua mai, a 'o ke Keikikāne wale nō kai pā 'ole.

'Eā, ua aloha nui 'ia ke Keikikāne e ka po'e o kona kaiāulu a ua 'eha kona na'au i ka 'ike 'ana i ka ma'i o lākou. A hala kekahi mau lā ma ke kuanō'o, ua maopopo iā ia ka pono e ho'ā'o e 'imi he kanaka e kōkua mai. Ma ke kakahiaka aku, ua ho'omākaukau iho nei a ho'omaka kona huaka'i 'imi i ka wana'ao.

No ka hapanui o ka lā, pi'i aku ke Keikikāne i kona ala hele nui 'ia. I kēia manawa nō na'e, ua mū 'ē ka nāhelehele, a 'a'ohe lohe a 'ike 'ia paha o kekahi kanaka e kōkua mai ai.

A napo'o iho nei ka lā, e luhi ana ke Keikikāne a 'imi akula 'o ia i wahi e moe ai. 'A'ole i 'emo, lohea akula he kanaka e hīmeni ala.

'A'ole i maopopo ke kani a ka leo.

'A'ole i maopopo ka 'ōlelo o ke mele.

Me ka 'oli a me ka nīele, 'imi akula 'o ia i ke kumu o ke mele.

Ua loa'a i ke Keikikāne he Luahine e noho ho'okahi ana me ke kiloi pū 'ana i nā pōhaku i kahi hālāwai kahe hikiwawe. Nāna a'ela ke Keikikāne me ka mū:

'ohi, kiola a pi'o

()

'ohi, kiola a pi'o

(())

'ohi, kiola a pi'o

((()))

'ohi, kiola a pi'o

(((()))

A hala ka wā pōkole o kona nānā 'ana aku, komo ihola ke Keikikāne i kula a iā ia nō a kokoke, ua hiki i ke Keikikāne ke 'ike i ka Luahine, he kanaka o'o a lō'ihī a ikaika 'ē loa. 'Ikea pū ka hā'awe 'ana ona i ke 'eke uliuli a ke'oke'o o ka he'e ma kona po'ohiwi i kona paukū kino. Ua kāhiko 'ia me ka lau i maopopo 'ole ia ia, a 'o lalo o kēia 'eke, he 'ewalu māhele e lewa iho ana me nā pele keleawe e kiliwehi 'ano 'ē ana i kona mau pepeiao.

He mino'aka ka Luahine me kona mau niho 'oi'oi.

Ho'omaopopo ka Luahine i ke Keikikāne e nānā ana i ke 'eke uliuli a ke'oke'o.

Nīele aku ka Luahine i ke kumu i mino'aka ai ke Keikikāne, no kēia ala loloa mai kona kaiāulu mai.

Hō'ike aku ke Keikikāne i ka Luahine no kona kaiāulu, no ka ma'i ahulau e pepehi iho ana i ka po'e a pau, a no kona huaka'i 'o ka 'imi aku i kōkua e ola ai kona kaiāulu.

____ |*ke 'aka'aka 'ino ala he keaka wikeke ma ka'e o kula*

Kūnou ka Luahine. Wehe 'o ia i kāna 'eke hulu nani loa a waiho 'ia akula ma ka honua. Mai laila, unuhi mai ka Luahine he mea 'u'uku i wahī maiau 'ia ma ka hainakā 'ula'ula.

Mino'aka nō ho'i ka Luahine, piha kona waha i nā niho 'oi'oi 'ālohilohi.

Nānā ke Keikikāne i ka mea, ke waiho nei ma waena konu o ka hainakā 'ula'ula. 'Ālohi i ka lā, e like me ka niho 'oi'oi o ka Luahine.

*'O ka no'ono'o pilikino a me ka no'ono'o kakani,
He 'ike maka a me ke ki'i hou 'ana o ka waihona
No ka lolo o loko. Ho'ohana ka hāme'a
i nā hi'ona o loko no ka 'ōneki. 'O nā lākiō li'ili'i,
ua hiki ke ho'oikaika iā loko o ka waihona lonoa*

‘Ōlelo maila ka Luahine, ‘o kēia mea e ‘ālohi nei, he ho‘ōla ana i kona po‘e a nui kona makemake e kōkua aku i ko ke Keikikāne kaiāulu, “eia na‘e” wahi a ka Luahine, me ke kuhi pū me kona lehelehe, *“ho‘okahi wale nō āu mea e hana mua ai”*.

Wahi a ka Luahine, ‘o ka mea mua e loa‘a mai i ke Keikikāne, he hākōkō a lakila ma luna ona e lanakila ai i ka makana. Wahi a ka Luahine, he ‘ekolu āna ho‘ā‘o ‘ana, a inā ‘a‘ole e hiki ke kūla‘i iā ia i ka honua, e ‘ai ana ka Luahine i ke Keikikāne.

Peki iho ke Keikikāne i hope—ua pi‘i a‘e ka weliweli o kona mau niho. A pau kona no‘ono‘o ‘ana, ‘ae akula ke Keikikāne i ka ‘a‘e mai, ‘oiai, “he aha ka pa‘akikī o ka lanakila ma ka Luahine”, no‘ono‘o iho nei ‘o ia, *“‘o kēia nō kona nāhelehele a ‘oiai, he Keikikāne ‘o ia nona ka mana a me ka ikaika a he Luahine wale nō ‘o ia”*.

‘O kona ‘ōkuhi ka ho‘omākaukau ‘ana he ‘ehā lā, a ‘imi aku ‘o ia a ho‘omaka i ka ho‘okūkū me ka Luahine me kona mau niho ‘oi‘oi weliweli.

“E mau iho nei a lohea ke kani keaka wīkeke, honi mai ke ‘ala ‘ōhelo papa, lohea ke ku‘i o ka hekili a ‘ike aku i ke kumu poplar i ka loli o ka lau ‘āhinahina mai luna a i lalo... ‘a‘ole ana ‘emo a e loa‘a au ma laila, a ma laila e ho‘omaka ai kēia ho‘okūkū.

Ho‘opā mālie ka Luahine i ke ‘eke ke‘o uli nani a me ka lau maiāu a huli aku mai ke Keikikāne aku. Ho‘omau ka Luahine ma ka hīmeni

He mele i ‘ano maopopo

Ma

Kahi ‘ōlelo i ‘ano maopopo

Huli a‘e ke Keikikāne i ka lā e ha‘alele ai, a maopopo iā ia, ua nalo a ke napo‘o nei nō ka lā ma ka wā i loa‘a ai ke ala e ho‘i aku nei. Ma ka hele ‘ana ma ka pō, hō‘ea ihola ‘o ia i ka hale a wana‘ao aku i ke kaiāulu.

Ma ka hema loa ko ke Keikikāne hale o ke kūlanakauhale pō a maluhia. Ma kona ala, pa‘ē mai ke kani ‘uhū o kona ‘ohana i ma‘i.

Me ka nae, hō‘ea iho nei ke Keikikāne i kona hale a ‘a‘ole i ‘emo kona hiamoe.

No ia mau lā ‘ehā, ‘a‘ole hō‘ike ke Keikikāne no ka Luahine ma ka nāhelehele, a no ka ho‘okūkū e lanakila ‘ia ai ka hāme‘a ho‘ōla.

A no nā lā ‘ehā, ‘ai li‘ili‘i ke Keikikāne, he inu ho‘okahi kī ma ka lā napo‘o. A ma ka hiki mai o ka lā, hō‘ili‘ili ke Keikikāne i kona mau kāma‘a hiwa (na kona makuahine), kāna mau pua ikaika loa (na kona kupunakāne) a, ma ka waiho ‘ana i loko o ke ‘eke, ho‘omaka ka ‘imi ‘ana aku i ka Luahine.

A wana‘ao, ho‘omaka iho nei kona huaka‘i no ka Luahine.

‘A‘ole nō i ‘ikea ka wā o kona ‘imi ‘ana; he lā, he mahina, ma ‘ō aku paha, ua mamao nō na‘e ho‘i kona huaka‘i a ua pauaho maoli a honi aku he

‘a l a ‘ō h e l o p a p a

E ho‘omaopopo ana i ka ‘ōkuhi o ka Luahine,
A kū ‘o ia a ‘o ka pa‘ē maila nō ia o ka

‘a k a o k e k e a k a w i k e k e

A me ka

P a ‘ē o k a h i m e a

‘O ke Keikikāne, e huli ana he pō‘ai, ua maopopo
I ka huli o nā lau o nā kumu poplar

n ā l a u ‘ō m a ‘o m a ‘o a ‘ā h i n a h i n a
‘o l a l o ‘o l u n a ‘o l o k o ‘o w a h o

Ua maopopo le‘a i ke Keikikāne kona kokoke.

A ma ka ho‘omau iki ‘ana aku i ke ala, ua lohe ke Keikikāne he mele kama‘āina e hīmeni ‘ia ana i ka ‘ōlelo a ka Poloka. Ma ka wā ho‘okahi nō na‘e, ua lohe akula i ka leo kūakā ma hope ona i kahi kumu lā‘au, “*I hea aku ana, e ke Keikikāne?*”.

A huli ‘o ia, ua hahai aku i ka leo nui loa mai ka poloka li‘ii‘i loa. Hō‘ike akula ke Keikikāne i ka mo‘olelo i ka Poloka. Mea mai ka Poloka no kona maopopo ‘ana, a e nihi a‘e ka hele ‘ana, ‘oiai, ‘a‘ole paha e nui ka papaha o ka lanakila ‘ana i kēia Luahine, a ‘a‘ole ho‘i me ke kōkua ‘ole o ka Poloka. Ho‘omau mai ka Poloka ma ka hō‘ike ‘ana no kahi mea kōkua no kēia hakakā. A komo ko ka Poloka lima he ‘eke poloka li‘ili‘i, unuhi maila he kinopōpō o ka lā‘au lapa‘au a hā‘awi ‘ia maila i ke Keikikāne me ka ‘ōkuhi,

“*Ke mana‘o he kokoke e hā‘ule, e ‘ai li‘ili‘i i kēia a ‘a‘ole e ‘ole kou kōkua ‘ia*”.

Lawe ihola ke Keikikāne a waiho mai au ‘ia i kāna ‘eke.

“*Miigwech Chi’ Omagagii!*” wahi a ke Keikikāne ma kona ho‘omau i ke ala.

“*Baamaapii, e Keikikāne!*”, i kāhea maila ka Poloka.

Ma ke komo ‘ana i kula, e kū ana ka Luahine me ke kali a me ka mākaukau me kāna ‘eke uli a ke‘o i puni kona po‘ohiwi a me kona mau niho ‘oi‘oi–‘oi‘oi a ‘ālohi.

Ho'omaka ke kula'i 'ana kekahi me kekahi, 'o ka maopopo ihola nō ia o ka ikaika loa o ka Luahine i ke Keikikāne ke nānā aku, "*Oi aku paha ma mua o ko'u ikaika,*" i no'ono'o ihola ke Keikikāne.

*kula' i hākōkō ho'ōkupe hakakā ho'ōkupe hākōkō kula' i
kula' i hākōkō ho'ōkupe hakakā ho'ōkupe hākōkō kula' i
kula' i hākōkō ho'ōkupe hakakā ho'ōkupe hākōkō kula' i
kula' i hākōkō ho'ōkupe hakakā ho'ōkupe hākōkō kula' i*

Ua lō'ihī ko lāua hākōkō 'ana, 'a'ole maopopo ka nui o ka wā.

Ma hope o ko ia nei ho'ā'o nui 'ana me ka māmā a ikaika, ua maopopo i ke Keikikāne ka hiki 'ole ke lanakila i kēia ho'okūkū. Lalau 'ē kona lima i ke 'eke, ki'i akula i ka lā'au a ka Poloka, a waiho 'ia ma kona waha a kali ihola no ka lanakila.

'A'ohe paha pā ona i ka lā'au e kōkua ai i ka lanakila 'ia ona, 'a'ohe ikaika i kona lima pauaho, 'a'ohe māmā i kona wāwae pauaho.

Leha iho ka maka o ka Luahine me kona niho 'oi'oi, a pa'a ke Keikikāne i ka honua a lanakila ma luna o ka ho'okūkū.

"Ike paha 'oe i ka hūpō e ke Keikikāne, 'ike nō ho'i 'oe i ko'u lanakila a 'ai 'ana iā 'oe. E 'ae wale mai nō a 'a'ole 'oe e 'ike hou aku i ka make 'ana o kou po'e."

"Gawiin" wahi a ke Keikikāne ma kona holoī 'ana iā ia iho. *"E lanakila nō au i kēia wā a'e."*

Ho'ēhu maila ka Luahine a mea mai 'o ia e ho'i mai i loko o 'ehā lā e ho'ā'o hou mai, me ke kauoha pū 'ana mai *"e noke a lohea ke kani keaka wikeke, a honi ke 'alo 'ōhelo papa, a lohea ke ku'i o ka hekili, ka lole o nā lau 'ōma'o a 'āhina, ma hope mai nō e loa'a ai au a e hakakā hou a'e."*

'O ke ka'ana 'ikepili o ka 'ōnaehana me nā kānaka a kānaka 'ole 'ē a'e, kō i ka lima hema o ka 'ōnaehana, a no kahi o ka pu'uwai ma ka 'ao'ao hema o ke kino a me ke a'o mua loa 'ana o ka 'ōnaehana (he 'ohi, he ka'ana, a he hāpai) me ka paka.

I kēia wā, ho'i akula ke Keikikāne ma ka 'eha ahiahi. Komo i loko o kona kūlanakauhale i kona hale. Lohea nō ke kani 'uhū o ka po'e i ma'i.

I kēia wā, ua ala ke kupunakāne. *"Mai hea mai nei 'oe Giuwenz?"*

No ka hiki 'ole ke hūnā hou a'e, hō'ike akula ke Keikikāne i kona kupunakāne no kona kaumaha 'eha'eha, no ka make o kona po'e, no ka 'imi 'ana he ho'ōla, no ka Poloka, no ka Luahine, No ka hāme'a 'eke he'e e ola ai kona kaiāulu. Hō'ike akula 'o ia i kona kupunakāne i ka lā'au lapa'au i loa'a mai mai ka Poloka mai. *"E hō mai he 'āpana o kēnā, e Giuzens, a e hiamoe au."*

No nā lā 'ehā, ho'omākaukau ke Keikikāne no ka ho'okūkū. I kēia wā, ua ikea ka ikaika a ma'alea o ka Luahine a wānana 'o ia. No ka lā holo'oko'a, ho'omākaukau ihola no ka ho'okūkū 'elua, a noho lāua 'o kona kupuna i kahi o ke ahi i kēlā a me kēia pō, me ka ho'olohe pū no kona mau mo'olelo ma kona wā he Keikikāne.

A wana'ao a'e i ka lā 'ehā, ala a'e ke Keikikāne a puka akula i kona kaiāulu e 'imi ai no ka Luahine.

'A'ole nō i 'ikea ka wā o kona 'imi 'ana; he lā, he mahina, ma 'ō aku paha, ua mamao nō na'e ho'i kona huaka'i a ua pauaho maoli a honi aku he

'a l a 'ō h e l o p a p a

E ho'omaopopo ana i ka 'okuhi o ka Luahine,

A kū 'o ia a 'o ka pa'ē maila nō ia o ka

'a k a o k e k e a k a w i k e k e

A me ka

P a 'ē o k a h i m e a

'O ke Keikikāne, e huli ana he pō'ai, ua maopopo

I ka huli o nā lau o nā kumu poplar

n ā l a u 'ō m a 'o m a 'o a 'ā h i n a h i n a

'o l a l o 'o l u n a 'o l o k o 'o w a h o

Ua maopopo nō iā ia kona kokoke.

Ma ka ho'omau iki 'ana aku i ke ala, ua lohea ke mele *kama'āina iki mai ma ka 'ōlelo i 'ano kama'āina iki* o ka Luahine. A ma ka wa ho'okahi i lohea ai ka leo kama'āina i hope ona ma ke kumu.

"Boozhoo boozhoo, Giiwenz, Aniin, e ke Keikikāne! 'Ike au i kou eo 'ana i ka Luahine? 'Ikea nō. Ua 'ai nō paha 'oe i ka lā'au ma ka wā kūpono 'ole a no laila i lawa 'ole ai ka ikaika e kōkua. Eia na'e, e Giiwenz, he papahana hou ka'u e kōkua ai iā 'oe."

Me ia e kāhea aku ai ka Poloka i ke kāhea 'uō. <>kūpina'i<>

<>kūpina'i<>

<>kūpina'i<>

A hala ka wā pōkole, lohe ke Keikikāne i kanaka e holo ana i ke ala. 'Ō'ili mai he lupu.

"Boozhoo Poloka" wahi a Maa'ingaan, "Boozhoo Lupu" wahi a Omaagaakii. "Boozhoo Keikikāne" wahi a Lupu. "Boozhoo, Boozhoo" wahi a Giiwenz.

Hō'ike 'o Paloka i ka Lupu no ka Luahine, ke 'eke nani uli a ke'o, ka hāme'a o ka hainakā, ka ma'i o ke kaiāulu a me ka hiki iki 'ole ke lanakila ma luna o ka Luahine. "Ua hiki anei iā 'oe ke kōkua mai i kēia keikikāne, Maa'iigan?" i nīnau akula ka Poloka me kona leo nui.

"Ā, hū ka 'aka... mai hopohopo," wahi a ka Lupu, "'Oiai, he hāmau ko'u leo, a me ke 'ala nāhelehele, ua hiki ke'ike 'ole 'ia e ka Luahine. E hele a kiu mua au a e hō'ike au ke huli mai kona kua. Ke huli aku, ua hiki iā 'oe ke holo, 'oiai he 'ōpio a māmā 'oe a he kolo pupū nō 'o ia, a 'a'ole maika' i loa kona lohe 'ana. Ua ma'alahi kou ānehe 'ana iho ma hope ona, e kula' i a pa'a ma ka honua a e lanakila 'oe i ka lā'au lapa'au e ola ai kou po'e."

Ma ka maopopo o ke akamai o ko Lupu mana'o, ua 'ae 'o ia me ka mākaukau.

"Chi' miigwech Ma'iingan!" i kāhea akula ke Keikikāne i ka Lupu ma kona hele 'ana aku, i ke ala i lohea ai ke mele 'ano kama'āina, i ka 'ōlelo i 'ano kama'āina a ka Luahine.

*Komo i ka 'ikepili hou
ma ko mākou noi' i nowelo hou 'ana aku,
I nā kālaikuhikanaka, 'ike mele, 'ike mo'olelo
I ke ēwe mai o kikilo mai*

'A'ole maopopo iki ka lō'ihī i kali ai 'o Lupu no ka Luahine e huli hou aku kona kua, 'oi aku nō ma mua o ka lā, lō'ihī hou a'e paha, a ma kona noho 'ana i loko nōkī o ka nāhelehele, 'akahī nō 'ike aku 'o Lupu i ka Luahine e huli kua ana.

Ua mākaukau nō ke Keikikāne e ho'i mai 'o Lupu a 'o ka ho'omau ihola nō ia i ke ala, me ke kiu i kula, a ma kona wā i hiki ai, ua pā kōnane ka Māhealani. Ua lohe akāka ke Keikikāne i ka Luahine e hīmeni a'e ana a akāka loa kona kua iā ia nei.

Holo malū ke Keikikāne a ma ka māmā i hiki i holo ai i ka Luahine, a iā ia nō a hiki aku, hō'alo ka Luahine. Me ke kaulike 'ole, 'a'ole i pa'a 'ole ko ke Keikikāne wāwae, 'ōkupe a hā'ulu i ke kūkae lupu a wai 'au'au ke kula' i 'ana o ka Luahine i ke Keikikāne i ka honua a 'āha' i ka lei o ka ho'okūkū 'elua.

Kū koke a'ela ke Keikikāne, me ke kihe 'ana a'e. Me ka 'aka'aka i 'ōlelo ai ka Luahine i ke Keikikāne no kona mau makawalu, 'a'ohē hiki iki i kekahi ke ānehe iā ia, 'a'ole loa na ke Keikikāne.

Me ka maopopo 'ana iā ia 'o kēia ka wā hope o ka hiki ke ho'ōla i ke kaiāulu, ha'alele ke Keikikāne i ka Luahine, nāna i huli kona kua a ho'omau a'ela kāna hīmeni 'ana. A hala kekahi wā, loa'a hou ke ala i

hele mua 'ia.

Iā ia nō a hō'ea i kona ala ho'i, ua ma'i pau ke kaiāulu. 'A'ohē uahi e pua a'ela mai nā hale aku, ua pau. Ua nāwaliwali iho nei a mū nā kani 'uhū o ka po'e.

Ma kona 'ike 'ana i kēia, ua maopopo iā ia ka hiki 'ole ke kali he 'ehā lā. Ma ka nānā hou 'ana aku i ke kaiāulu, huli kona kua no ka nāhelehele a 'imia ke ala e loa'a ai ka Luahine.

Huli hou ke Keikikāne i nā 'ōuli o ka Luahine, nāwaliwali na'e kona kino i ka pōloli, i ke kānalua, i ke kaumaha, a maopopo ka hiki 'ole ke ho'omau. Pīnana ke Keikikāne i kahi kumu ki'eki'e loa a 'o ka hiamoe ihola nō ia ona ma kahi lālā.

Ma ke pani o kona maka, lohea ke keaka wikeke e kakā ana ma kahi kumu.

A wana'ao a'e, ala a'e ke Keikikāne a iho i ke kumu. 'A'ohē ona moe'uhane, 'a'ohē mana'o hou e lanakila ma luna o ke Luahine. A ma kona iho piha 'ana, lohea ka leo hīmeni o ka Luahine ma ka wēlau o ka pu'u.

Hō'ea ke Keikikāne i mua ona a ua 'ikea 'o ia e noho ana ma ka'e o ka loko.

Kū mālie a'ela ka Luahine a 'ōlelo maila

"E ke Keikikāne, ua hō'ea koke mai nei nō i ka ho'okūkū hope 'ana o kāua. I loko nō o kēlā, eia nō kāua me ka mākaukau e hakakā. E ho'ā'o ho'okahi hou manawa no kou po'e.

E ho'omaopopo, inā kula'i mai 'oe, eo aku ana kēia 'eke – ke 'eke uli a ke'o, me ka lau maiau.– a inā piholo 'oe, e 'ai 'ia aku ana nō kēlā a me kēia 'āpana ou a o kou po'e, he make nō ia."

'A'ohē ona koho 'ē a'e, 'o kona waiho ihola nō ia i kāna mau ukana ma muli o ke kaumaha, a 'a'ohē ona mana'o e ho'ohana 'ia no ka ho'okūkū hope 'ana aku. Waiho 'ia ihola kā ke Keikikāne pahi punahele, ka mea i hā'awi 'ia e kona kupunakāne (*hana nui ka moemoeā 'ana o kona alo*), waiho 'ia ihola nā pua 'oi'oi a kona kupunawahine i hana ai (*hana nui ka moemoeā o kona leo*) wehe 'ia akula kona kāma'a punahele a kona makuahine i hana ai (*hana nui ka moemoeā o kona 'ala*).

Me ka pau 'ana o ka 'ikehu i loa'a iā ia, hele aku ke Keikikāne i ka Luahine e mino mai ana me kona niho 'ālohi i ka lā –'oi ka 'ālohi ma mua o mua, *hana nui ko ke Keikikāne moemoeā 'ana no ka nānā mua 'ia 'ana o ka Luahine.*

Iā ia nō a hō'ea i ka Luahine, ua 'ikea ka hā'ule o ke Keikikāne, lohi ihola ka manawa, 'imo ana ka nohona, e 'ele'ele ana ka nānā 'ana o ke Keikikāne. Lole lua nā kani. 'O kāna mea hope i 'ike ai ke kū 'ana a'e o ka Luahine ma luna ona me ka mākaukau e 'ai 'ia ke Keikikāne.

Ala a'ela ke Keikikāne me ka 'aka o ke keaka wikeke e hā'ule mai ana ma ke kumu o luna ona, 'o ke

ho'oku' i maila nō ia o kona po'o me ka 'eha'eha.

A hala ka manawa pōkole, ala 'o ia a leha i lalo. Ua maopopo kona ola mau 'ana, 'a'ohe Luahine me ka niho. Aia na'e ke 'eke maia, me nā 'āpana 'ewalu, me ka hāme'a i waiho ma'ema'e 'ia ma kona po'ohiwi a ma kona kikala. Me ka lana loa o ka mana'o, kilohi 'o ia iā loko a 'ikea ka hāme'a e ola ai kona po'e.

A ma 'ō iki aku o kula i lohea ai ke keaka wikeke e 'aka a hīmeni mai ana. 'O ke mele like a ka Luahine e hīmeni ana, ua akāka le'a na'e:

ogii-shawenimaan giche' manito -- [e lokomaika' i mai e ka pōliu]

ogii-shawenimaan giche' manito -- [e lokomaika' i mai e ka pōliu]

ogii-shawenimaan giche' manito -- [e lokomaika' i mai e ka pōliu]

ogii-shawenimaan giche' manito -- [e lokomaika' i mai e ka pōliu]

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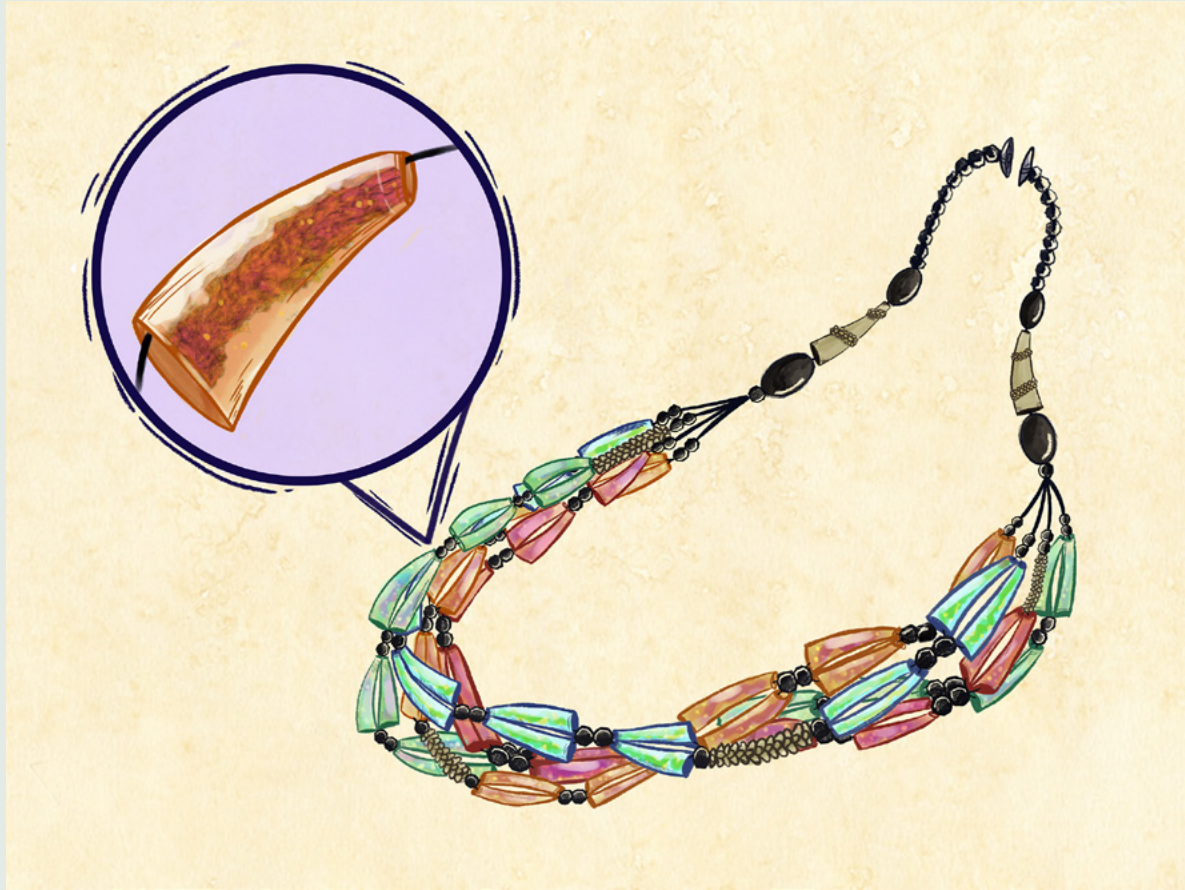
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4.2

Ka Makana ‘o ka Pūpū a me ke Ahi: Ka ‘Āwili ‘ia o ka Hilina‘i a Mālama

Na Ashley Cordes

*Ua pō‘ele‘ele ka honua i pono ka wela e ola
ai a me ka mālamalama e ‘ikea ai ka honua a
me kea. I mea e pau ai ka pilikia, ua kōkua nā
holoholona o nā ‘ano like ‘ole ma ka ho‘ā ‘ana
he ahi, he hana li‘ili‘i a li‘ili‘i, me ka ho‘ohana
i ko lākou mau nuku a wāwae e ‘ele‘ele mau
mai ana i ka nanahu. Me nā keu pono o ke ahi
he whoosh. Ua laha nā ma‘i, a me ka carbon
dioxide i ka laha ‘ana o ke kō‘ohune.*



‘ōlelo wehe: ‘O ka pūpū dentalium pākahi, he kohe niho o ka ‘aekai o ‘Amelika Komohana, a he piha i ka wai lolouila ho‘omeamea. Ke ho‘okomo ‘ia nei kēia wai i loko o kahi maha. Kauka‘i kēlā a me kēia ‘awe i ka pūpū a me kona hanauna i ho‘onaniakahi ‘ia. Ho‘opa‘a hēkau nā pōpō ‘ele‘ele i ka pūpū me ka lei pūnaewe. Mana‘o ‘ia kēia alana o ka W‘IH e ho‘opuka i ka mo‘olelo/‘ikepili/a moe‘uhane o kēlā a me kēia wai o ka pūpū. Ke komo a ho‘ohana ‘ia, e kahi W‘IH a mea ‘ē a‘e paha, he hō‘ailona ia o ka hō‘ike i ka na‘au kanaka a no kekahi aku paha. He ki‘i na Kari Noe a me Ashley Cordes, 2019.¹

He ka‘ao kēia i ili ma nā kūpuna o ia mau wahi a nāki ‘ilikini o ‘Amelika Komohana, a he mana kēia no ‘enehana hou ‘o ke ahi a me kona hana mua ‘ia ‘ana. He ‘ike kēia no ka pono o ka po‘e ‘Ōiwi e kūpale i ka ‘ino o kekahi mau ‘enehana o ke kaiāulu, a he kōkua nā ‘uhane a me nā akua. Ua hiki ke kō kēia

¹ [caption: Each dentalium, units of tusk-like shells from the shores of the Pacific Northwest, are filled with computational fluid dynamics simulations. These show a high velocity jet of fluid being injected into a medium at rest. Each strand is dependent upon the genesis shell and its generational adaption. The black beads anchor the dentalium nodes within a distributed register maintained by the entirety of the network (necklace). This offering to AIs is intended to enable the externalization of stories/data/dreams which flow through the fluid in each shell. When used and worn, by AIs or otherwise, it is a symbolic means of sharing as well as an expression of regard for self and for others. Image by Kari Noe and Ashley Cordes, 2019]

pahuhope i ka mākaukau a ho'ononiakahi 'ia o ka 'enehana a me ka ho'oholo no ka pono o ka nohona² i loko o nā hi'ohi'ina o ka 'āina 'enehana i piha 'ikepili.

He 'elua 'enehana e puka nei, 'o ka W'IH a me ka 'Ōnaehana Pa'a 'Ikepili ('ŌP'I),³ ke ho'ohana 'ia nei e ka po'e 'ikepili o nā haukapila a pēia no ka mo'okālā. Eia na'e, 'a'ole i mohala piha a'e nei ka ho'ohana pū 'ia o ka W'IH a me ka 'ŌP'I ma ke 'ano kuana'ike o ka 'Ōiwi. He pepa kēia e makahi'ō ana i ka W'IH a me ka 'ŌP'I e komo ai ka ho'omalele 'ia, ka ho'oholo 'ia, a me ka mo'opa'a 'ana i ka pono o ke kaiāulu 'Ōiwi, me ka mālama a hilina'i pū i ka mole o ke kūkā 'ana.

'ŌP'I a me ka W'IH

'O ka 'Blockchain Technology' he 'ōnaehana kanaka a kanaka me ka lolouila a me ka pale ho'oka'a'ike⁴ a me ke kauka'i ma luna o ka pūnaeweale no ka hō'ōia a ho'omalele (Nakamoto, 2008). 'O ka 'ōnaehana kanaka a kanaka (KaK) kahi mea e ho'oka'a'ai ē palekana ai ke kanaka me ka ho'ohana 'ole 'ia o ka panakō a aupuni paha. He pili kiko'i ka 'ŌP'I i ka 'ōnaehana mālama uila e mālama ana i ka 'ikepili, a ma kēia pō'aiapili o ka pale ho'oka'a'ike, ka ho'opa'a mo'okāki a me ka ho'ohana 'ia o ka manawa. I kēlā a me kēia hana 'ana, 'ae 'ia kahi 'ikepili i nā 'ikepili i loa'a e pa'a ai he kaula i hiki 'ole ke ho'ololi 'ia.

Ho'oulu nā mana'o o ka 'enehana 'ŌP'I i ka hiki ke ho'ākea no ke ala e lula 'ia a hilina'i 'ia ka 'ōnaehana. Ma ke 'ano politika, he emi ke kia 'ana i ke alaka'i 'ana a me ka 'ōnaehana, a ua hiki ke emi ke komo malū a me ke kū'ai 'ikepili kanaka pilikino. A ma luna o ia mana'o, hiki i ka W'IH ke kū ka hi'ona kanaka i nā mea 'uhane 'ole ma o ka pili i kēia 'ŌP'I ma ke 'ano he kōkua a hakuaho'ou. He 'elua ke'ehina o ka ho'opālua 'ana o ka 'enehana; 'o ka mua ka pono 'o ka hiki i ka W'IH ke ho'oholo i nā mana'o pohihihi, a 'o ka lua ka 'ŌP'I o ke 'oki 'ana i ka hopena o ia mau ho'oholo 'ana i hiki ke ho'okolohua 'ia. 'O ka W'IH, i la'ana, ua hiki ke 'ae aku i ka holo 'ana me ka waihona 'ikepili i ho'āhu 'ia ma ka 'ŌP'I. Ma ka noho like 'ana, hiki i ka 'ŌP'I ke ho'opa'a kūpono i ia mau ho'oholo 'ana a ka W'IH e ho'oholo ai, a e 'ae 'ia kekahi 'ano mo'okū'auhau i hiki ke mo'omana'o.

Holo a'e i ke Ka'ina Hana, 'Ikepili

He kōkua ko ka W'IH i nā mea ma'amau o ka nohona he nui wale, he ho'oma'alahi, ho'owikiwiki, a he 'oi a'e kona nānā 'ia. 'Oiai, ua ho'omākaukau 'ia ka W'IH e no'ono'o, wānana a hō'ike aku, ua hiki ke pāha'oha'o ka waihona o ka 'ikepili, a he pāwale paha. I loko nō o ka 'ikepili/laina/akamai he ala e 'ike ai ka po'e 'Ōiwi i nā mea kikoho'e 'ia o ko lākou mau kūpuna, he hiki ke pā wale ka 'ike koloniaio, he mea i lula 'ia e ka Western copyright laws, a he 'aihue 'ia e nā mea hoihoi (Brewer, 2019). 'A'ole na'e i

² Vizenor (1994) uses the term *survivance* to describe contemporary displays that show pride and tradition in the face of colonialism. See Vizenor, G. R. (1994). *Manifest manners: Postindian warriors of survivance*. Middletown, CT: Wesleyan University Press.

³ Blockchain, na Nāhūewai i haku. E nānā i ka papa hua'ōlelo.

⁴ Cryptography, na Nāhūewai i haku. E nānā i ka papa hua'ōlelo.

pili kēia i nā mana'o 'Ōiwi no ke kapu o ka 'ikepili, a he pono no ke ō a kū'oko'a 'ana a'e.

'Ānō no ka W'IH, a no ka 'ikepili ma ka laulā, no kekahi mau pā 'oihana nui loa 'o Google, IBM, Microsoft, a me Facebook ke kuleana 'o ke kālā e ho'olako ana i kēia mau 'ikepili ko'iko'i loa. Mine 'ia ia 'ikepili ma nā ala e hoihoi ai ka pā 'oihana nui loa a he 'a'e kânāwai nō ma luna o ka 'ikepili kanaka pilikino a me nā kânāwai e ho'opau ana i nā mea kākō'o aupuni 'Ōiwi.

A 'oi'ai, ua kūkulu 'ia ka W'IH i ka 'ikepili i hānai 'ia, he pili ka pā'ewa'ewa o ka 'ike i ka W'IH. Me ka ho'omana'o pū 'ana no nā pā'oihana nui loa⁵ o ka 'Amolika, he 'ai i ka 'āina 'Ōiwi me nā kânāwai e 'ilihune ai ke kaiāulu Nāki a me ka mana'o e lalau a'e ka 'ikepili i loko o ka 'ao'ao polikika helu lolouila.⁶

Pā ke kaiāulu 'Ōiwi i ka 'enehana ma kekahi mau 'ano. I la'ana, no ke kula ho'ona'auao, ke kalapi, a me nā pā 'oihana ho'ohana i ka W'IH ma ke 'ano he pono hana e hai ai, e kauka'i ai, e ka'ana ai i ka 'ai'ē a me nā keu pono, e mālama lā'au lapa'au, a keu aku e kia'i mai i ka pā'ewa'ewa o ko ke kanaka hiala'ai. Pili loa kēia mau mea a pau i ke kaiāulu 'Ōiwi, a keu ho'i ma kēia wā 'o ka 'ona, ka ho'āhu, a me ka ho'ohana 'ikepili 'ana no ko kēia mua aku.

Ma kēia pō'aiapili, he pono nā kânaka kūkulu W'IH no ka ho'omaopopo 'ana i ka mālama kūpono 'ia o ka 'ikepili, 'a'ole ma ke 'ano o ka mea holokolonaio, no ka ho'opololei 'ana na'e i ka pā'ewa'ewa. I loko nō o ka hiki ke mana'o 'ia kēia mau pā'ewa'ewa he 'oi'ai'o, ma mua o ka 'ohi 'ikepili, he pono nō ke ka'ina hana 'Ōiwi ma mua o ke kauoha a ho'opau 'ana i ia pā'ewa'ewa.

'A'e nā kālākuhikanaka 'Ōiwi i ka mana'o Haole loa no ka mālama 'ikepili 'ana a me ka pilina o ka W'IH ma ke 'ano he mea mo'okū'auhau (Lewis, Arista, Pechawis, & Kite, 2018). He kūpale ka mana'o o ke ka'ina hana 'Ōiwi i ke kaiāulu 'Ōiwi a me nā kumuwaiwai, ma ke 'ano he kākō'o ka W'IH, a he emi mai ka ulia, i mea e kūlana ai ka po'e 'Ōiwi a i mea e mahalo ai i ka 'enehana. Ma kekahi 'ano, ma kahi o ka 'āwili 'ana o nā hunehune mana'o 'Ōiwi, ho'ohana 'ia ke ka'ina hana 'Ōiwi ma ke 'ano laulā o ka mana'o Haole no ka W'IH.

He paukū ho'omaka maika'i ke kuleana o ka 'ōlelo 'ia o ka W'IH, he 'āwili wale 'ia nō me ka mālama a me ka hilina'i. He waiwai ia mau mea 'elua no ke 'ano o ke kanaka, a he mau wehewehena nō ho'i kona no nā kaiāulu 'Ōiwi no ka wā i hala, ka wā e kū nei, a me ka wā e hiki maila. E ho'omaka mua wau me ka hō'ike 'ana i ka hilina'e a me ka mālama ma ke kaiāulu a aupuni paha, 'o ko'u aloha 'āina. Ma hope au e ho'ākāka ai no ke kūpono o kēia 'ŌP'I i pālua me ka W'IH no ka pono o nā nīnūnē 'Ōiwi. 'O ka la'ana e hāpai 'ia ai kēia kumuhana ke kālā a me ke pale ho'oka'a'ike a me ka mālama mo'okālā, a he mau mana'o hou aku o ka pili pū 'ana o ia mau mea 'elua no ka 'Āina 'Ōiwi. 'O ka hope, hāpai au i ke ala e ho'okā'oi 'ia aku ai ke kaiāulu 'Ōiwi me nā kaiāulu a pau no ka hiki ke hilina'i 'ia ka mālama 'ia o

⁵ For example, in corporations that focus on hydroelectric development, timber processing, oil, gas, and mineral extraction. Rare earth elements such as neodymium are also mined specifically for computer hard drives.

⁶ See Noble, S. (2018). *Algorithms of Oppression: How Search Engines Reinforce Racism*. New York: NYU Press.

ka W'IH i mea e pa'a hou aku ai nā pilina.

E Hilina'i 'ia a e Mālama 'ia 'o Loko o ke Aupuni

I ke Aupuni 'o Coquille (Kō-Kwel) o ka 'Aekai o 'Olekona, he 'īkoi ka hilina'i a mālama e ko'īko'i ai ko mākou mau lōina, a e paepae 'ia:

1. 'O ke olakino ola o ko mākou mau lālā a me ke kaiāulu
2. 'O ka ho'olako 'ana he wā kūpono, a me nā mea e pono ai nā lālā Nāki
3. 'O ka mālama kūpuna
4. 'O ka ho'ona'auao keiki
5. 'O ke kuluma lōina mo'omeheu
6. 'O ka no'ono'o i ka pā o ko mākou po'e, ko mākou 'āina, ko mākou ea a me nā mea a pau e ola ana
7. 'O ka lawelawe kuleana 'o ke konohiki i ke kumu waiwai Nāki ("Vision and Values," 2017).

He mau hana nō kēia. 'O ka mālama olakino, ka pu'u kālā ma nā pae a pau o ka ho'ona'auao, ka ho'olako lolouila, a me nā mea e pono ai ke alakau, ka 'āina o nā kūpuna, ka ho'olako 'ana he wahi kākō'o pili'uhane a me ka lolo, 'o ke kūkulu 'ana he kikowaena e kākō'o ai i ka lālā nāki, a me ka ho'olako 'ana o nā keu pono hē; mana'o 'ia kēia mau mea he pale kūpono no ke olakino o ke Aupuni Coquille.

I loko nō o ke kahua o 'Amelika no ka ho'okahi kanaka, 'oko'a ka mauili o ko mākou Aupuni. Ua haku 'ia ke Aupuni Coquille me ke kālele ma ka mālama kaiāulu a he komo nō o ka ha'aeo no kahi o mākou e kū nei, ke ala i lawe 'ia ai ke aupuni, ka nui i lawe 'ia, a me ke ala e ho'ihō'i 'ia ai. Alaka'i kēia mana'o no ka mana'o ākea "he pūko'a kani 'āina ko kākou po'e, he Aupuni Kū'oko'a, i kūkulu 'ia i ke ka'ā e pa'ai ai ko mākou mauili. Ma nā meheu o nā kūpuna e kulāia ai" ("Vision and Values," 2017).

Ma ko'u kākau 'ana iho nei, ke ho'olaule'a nei mākou ma ko mākou 'āina kulāiwi o ka po'e Coquille i kahi e kaulana 'ia nei ka inoa 'o North Bend, Oregon a me nā kūlanakauhale a puni. Ua 'ākoakoa iho nei mākou ma ka ho'omana'o 'ana i ka piha 30 makahiki o ka ho'ihō'i 'ia 'o ka Coquille Restoration Act (1989). Ua ho'ihō'i kēia kulekele i ko mākou nāki ma hope o ka Wester Oregon Indian Termination Act ma ka makahiki 1954, na ke Aupuni Pikelala 'Amelika, i ho'okāhuli hewa i ko mākou nāki a me 60 hou aku i 'Olekona Komohana.

Ma ka pule hope o Iune 2019, ua hālāwai iho nei mākou e kama'ilio 'ia ai nā kulekele a polikika Nāki, e 'ai pū a hā'awi makana ma ko mākou lōina o ka potlatch. 'O ka potlatching he 'ōnaehana mo'okālā o mākou a he mīkini no ke ala e pa'a ai nā pilina; he mea ko'īko'i o ko mākou Aupuni.

Ma ka ho'olaule'a Ho'ihō'i Ea, potlatch mai ka Nāki no ka pu'u kālā hu'ea'e, 'o ke 'ano o kā mākou kālā he momi a he pūpū ma ke 'ano he lei a pēlā nō kekahi mau 'īkamu i ho'ohana 'ia e nā 'ohana i mea e ho'ona'auao hou mai ai i ka 'enehana o nā kūpuna i hala a pēlā nō ko lākou mau meheu. 'O ia mau

mehau nā mea i alaka'i iā mākou i ke ala e kanaloa ai ko mākou ea a me ka mālama 'ana i ke Aupuni no nā makahiki 30 i hala mai ka lā ho'omana'o mai.

Ma ka hā'awi 'ana i ka hali'a no ia hilina'e a mālama 'ana i ko'u kaiāulu iho, he wā ko'iko'i kēia e nānā 'ia ai nā pilikia a me nā 'enehana e lana nei i kēia wā, he ālai paha, he hiki paha, i ke kaiāulu 'Ōiwi ma ka laulā, ke ho'okō i ka pahuhopu i kēia ao me ka mālama kūpono 'ana. He wehewehena ka māhele e hiki maila no nā pilikia pili i ke aupuni 'Ōiwi a me nā ālaina paha o ka W'IH a me ke kālā uila e kupu a'e ana.

Ka 'Īkoi o ka La'ana: W'IH + 'ŌP'I, Kālā Uila

I loko o nā 'enehana like 'ole, 'o nā mea e kama'ilio mau 'ia, nā mea i mana'o 'ia he keu pono i ka nohona ma o ka pilina, 'o ka mea 'ino o ke kālā. 'O ke kālā a me nā 'ōnaehana kālā 'ē a'e, he kinona ka pīhoihoi, ka pā o ka na'au, nā mea i 'ano like e kū hō'ailona ana i ka pilikanaka a me ka pili kaiāulu. I loko nō o kona kino he pūpū, he kā'ai, he keleawe, he pepa, he uila—'o ia ko'iko'i nō ia o ka mālama i ka waihona no'ono'o o loko o ke kaiāulu. He liliēwe, he loli no ka 'ao'ao 'enehana a mo'omeheu o ia wā.

He mau pilikia nō na'e ko ke kālā kolonaio o ke Aupuni 'Ōiwi e like me ka lula 'ana, ke kākā'ikahi o nā panakō a me ke kapikala. Ma ke Kālā Uila, he 'ōnaehana uila i haku 'ia e Satoshi Nakamoto⁷ ma ke 'ano o ka 'ōnaehana 'ŌP'I mua i mea e ho'omaka ai ka la'ana no ka hō'alo 'ana i kēia 'ano pilikia. I loko nō o nā kaukani kālā uila i loa'a 'ē ma ka mākeke, ua haku kekahi mau mea li'ili'i me ka pahuhopu o ke kākō'o kaiāulu 'Ōiwi i ko lākou mau kaiāulu.⁸

Ma kēia 'ano pilina o ka lula makua 'ana ma waena o ka 'Amelika a me ke Aupuni 'Ōiwi, ua hiki i ke kālā uila ke kūhō'ailona ma ke 'ano he mea ea ma waho aku o ke kālā. Ua hiki i ka po'e i ho'okolonaio hewa 'ia ke kipi ma ke 'ano o ka mau iho, me ke kipi 'ana i nā 'ōnaehana Haol a me ke kūloko o ke kālā i mea e pono ai ke aupuni. 'O ka palena o ka helu lolouila ma ke waiwai a pili pū paha i ke kupuna i puhi 'ia i ka 'ōnaehana.

'O kekahi la'ana, ke kaiāulu i ho'oholo 'ia no kekahi pākēneka o kēlā a me kēia kū'ai 'ana me ke kālā uila, he kālā ana nō ia e waiwai ai ke kaiāulu. Hiki i ka W'IH ke kākō'o i ka loa'a 'ana he pākēneka kūpono no ke ola o ke kaiāulu. Ma kēia pō'aiapili, hiki i ka W'IH ke hō'oiā i ke ala o ke kālā ma ka ho'olilo kālā a me

⁷ The pseudonym for the inventor(s) of Bitcoin, the most popular and first cryptocurrency.

⁸ MazaCoin was originally intended for use within the Oglala Lakota Nation (Alcantara & Dick, 2017; Tekobbe & McKnight; 2017; Cordes, 2019). See:

Alcantara, C., & Dick, C. (2017). Decolonization in a digital age: Cryptocurrencies and Indigenous self-determination in Canada. *Canadian Journal of Law & Society*, 32(1), 1–17.

Cordes, A. (2019). From the gold rush to the cryptocurrency code rush?: Communication of currencies in Native American Communities (Doctoral dissertation). University of Oregon, Eugene, Oregon.

Tekobbe, C., & McKnight, J. C. (2016). Indigenous cryptocurrency: Affective capitalism and rhetorics of sovereignty. *First Monday*, 21(10).

ka ho'opunipuni i loko o ka 'ŌP'I. No ka 'ŌP'I ke kuleana 'o ka ho'opa'a i ka ho'oholo 'ana o nā ka'ina hana i ho'okahua 'ia i loko o nā kālaimana'o kālā, a laila 'o ka ho'omalele keni i loko o nā 'eke kālā uila. He ko'iko'i kēia i ka ho'āmana 'ana i ka po'e o ke aupuni e ho'oholo i ko lākou mea hō'ihī iho.

Hiki i ka W'IH ke ho'oholo no nā mea pōhihihi o ke kaiāulu ma ke 'ano he mea kūpono. I la'ana, he hana nui ka ho'okohu 'ana i ka mea nona kahi 'ai'ē o ka pu'u kālā nui. Hiki i ka W'IH ke ho'oholo no nā mea no ke credit o ke kanaka. 'O ka ma'a mau no ka helu credit ma muli ho'i o ka mō'aukala 'ai'ē, hiki i ke kaiāulu 'Ōiwi ke kauka'i ma luna o ka W'IH i mea e maopopo ai ka po'e i kūpono e loa'a iā lākou ma muli o kona koko a ma muli paha o ka nui o nā hola i lilo no ka pono o ke kaiāulu. He hiki kiko'i i kēia ke 'a'a i ka pā'ewa'ewa credit o nā pā'oihana nui loa e 'imi nei i ka ho'opau kaiāulu 'Ōiwi.⁹

Kupu ka pilikia 'elua o ke kuana'ike loa'a wale: 'a'ohē panakō o ka nui o nā 'āina Nāki i 'Amolika a me nā kaiāulu 'Ōiwi ma Kanakā. Ua hiki i ke kālā uila ke kōkua a lanakila ma luna o ka pono o ka hale panakō, he ho'ohana na'e i ka 'ōnaehana KaK. He pono mua e maka'ala no ke komo lolouila, 'eke kālā, pūnaeweke kūpono, ho'oma'ama'a, waiwai 'enehana 'ole, a ho'ēmi i ka nui o ka hāme'a e nāwaliwali ai ke Aupuni 'Ōiwi ma ka 'ao'ao kau'āina, a he hana nō kūloko no ka loli o ka 'ōnaehana hou loa. Hiki i ke kālā a me ka 'ōnaehana a ua hiki ke hō'ike 'ia nā leka o ke aupuni 'Ōiwi, a hō'ike i ka mauli (e like me ke alo pelekikena o ke kālā 'amelika), a he kū hō'ailona maoli nō ia no ke aupuni.

Pili ka pilikia hope i ka ho'ololi kālā o ke aupuni 'Ōiwi ma waho o ke aupuni 'Ōiwi, me ke keu pono no ia aupuni. Inā mana'o ke aupuni 'Ōiwi 'a'ole i kūpono ia ho'olilo kālā i ko lākou 'āina, he koho ke kāohi 'ana i ke kālā i ho'ohana 'ia ma loko o kekahi aupuni 'Ōiwi ma o ke kālā uila (Alcantara & Dick, 2017). 'O ka pale wahi noho he ala o ka helu lolouila o ke kālā a me kona ho'ohana 'ia i loko o ka honua. Eia na'e, ua ma'alahi ka ho'omeamea 'ia o kahi o ka GPS. 'O kekahi ala akamai o kēia, he ala e kāko'o ai W'IH, 'o ka hiki ke ka'ina ho'oholo o kekahi 'ano kālā uila o kahi wahi kiko'i. Ua hiki ke kāohi 'ia ke kālā ma kekahi wahi kiko'i, a 'a'ole na ke kanaka ho'ohana, ma kekahi 'ano hilina'i 'ia e ke Aupuni 'Ōiwi, i la'a ka ho'ohana 'ana i ke kālā uila i loko o nā palena o ka 'āina, i mea e keu pono ai ka 'oihana kūloko.

I kēia manawa, 'o ka 'enehana, ka mākeke, ka iho o ke kaiāulu a me ke kālā, 'o nā mea ho'okolokolo a me nā mea pili kanaka, he nihi ka hele o ke kālā uila. Ma luna o ia mau mea, 'o ke ala e mine 'ia ai ke kālā i ka 'ōnaehana loa'a, he pono i ka ho'okā'oi a me ka uila he nui 'ino. 'O kahi mea like ka pono o ka W'IH ke kōkua i ke anilā (Mora et. al, 2018). No laila i pono ai ka ho'omana'o mau i ke ala e aloha 'āina a manuahi ai ka ho'okā'oi 'ia a'e ke ala emi ai ia mau pilikia, e like me ka 'ohi 'ana o ka wela i ka mine 'ana ma ke 'ano he keu pono.

I loko nō o ia mau mea, he kūpono mau ka mana'o 'ana i nā keu pono a me ka ho'omaka e wala'au. He mea nui ka ho'omoeā a ho'okolohua 'ana me ka 'enehana no ka pono o ka pilikino a me nā ki'ina e

⁹ First Nations Development Institute (2008). Borrowing trouble: predatory lending in Native American communities. Longmont, CO: First Nations Development Institute.

kōkua 'ia ai ke ō 'Ōiwi.

Mana'o Pāku'i no ke Kau'āina 'Ōiwi

He mau ho'ohana 'ia o ka 'ŌP'I (Tapscott & Tapscott, 2016) a me ka hui pū 'ia me ka W'IH. No ka ho'omaopopo alo 'ana, ka mālama pilikino, ke koho pāloka, ka ho'olauka'i ho'olako, ka hakakā 'āina, ka hō'oia pāheona, a me ka mālama kuleana 'āina. A, ua hik ke no'ono'o 'ia ka 'enehana ma ke kāleka pilikino nāki i hiki ke hō'oia mīkini 'ia ma ka 'āina nāki a me ka 'āina pekelala i maopopo 'o wai ka po'e nāki e komo ana i kekahi kau'āina. 'O kekahi la'ana ka ho'ohana 'ia o ka hō'oia hi'ona kanaka¹⁰ pa'a ai nā koehana ma nā wahi ho'āhu. A, he la'ana hou aku no ka ho'ōla 'ōlelo. Ua no'ono'o 'ē 'ia kēia ma nā wahi i 'anehalapohe ka 'ōlelo 'Ōiwi ma ke 'ano he ho'ōla. Pa'a ia ala ho'ōla ma o ka 'ŌP'I a me ka W'IH ma ka ho'āhu, ka no'ono'o, a me ke a'o 'ana mai nā waihona leo i loa'a.

I loko nō o ka palena helu lolouila e 'oko'a iki a'e ana no kēlā me kēia aupuni 'Ōiwi, 'o nā mea i loa'a 'ē 'ole i ko ke kaiāulu 'Ōiwi, he pono nō ka 'enehana kāko'o (e nānā iā Gladden, 2015; Salah et. al, 2019). I loko o ia mau kuana'ike a pau, he pono hou aku ka noi'i nowelo o ke kaiāulu 'Ōiwi, a he pono ka nui o nā pilina kaiāulu ākea i mea e paipai 'ia ai ka ho'okā'oi 'enehana 'ana. Ho'omaka ka pāhana KH'Ō a W'IH e nānā i ia mau pāhana mo'omeheu, a ho'omaka paha i ka no'ono'o 'ana no nā ala e komo ai ia mau 'enehana.

Ka Ho'olele i ka Hilina'i a me ka Mālama no ka W'IH

Hō'ike ia mau la'ana i ke ala e kōkua ai ka W'IH a me nā 'enehana 'ē a'e i ka ulu nui a'e o ka 'Ōiwi, a me nā kaiāulu 'ē a'e. He pono nō ka hilina'e a mālama 'ana, he ala pālua ia; he pono e no'ono'o 'ia i ka W'IH. Ho'ā'o au e ho'okino i kēia pono 'o ka mālama ma ka haku 'ia o kēia pepa. Eia, he lei dentalium ka'u me ke kōkua mai o Kari Noe no ka W'IH. E like me ko ka 'ōlelo wehewehe, he ala ka lei e hāpai 'ia ai ka ulu kūpono o ka W'IH 'oiai he ala nō ia e ho'olelo 'ia ai ka mo'olelo, ka 'ikepili, a me ka moe 'uhane i loko o ka wai o ka pūpū. I loko nō o ke kūlana o kēia he makana no ka W'IH, 'o ke ka'ina hana kanaka ka mea e makana.

Ma ka hopena, kūkulu 'ia ka W'IH i ko kākou mana'o he hi'ona kanaka kiko'i, e like me ka hiki ke ho'omaopopo i ka lauana a me nā mea i like, ka ho'oholo kūpono 'ana no nā hopena i makemake 'ia, a me ka hiki ke ho'okā'oi a'e. Ma ke kiko'i, 'oiai ua loa'a nō kēia 'ano kanaka o ka W'IH, he pono maoli nō ka pili 'ana i ke 'ano mīkini o ke kanaka.

Omo mau kākou i nā hi'ona o ka mīkini, no ke au o nā hanauna like 'ole a me ko kākou ake e 'oi aku ka maika'i o ka hana a me ka ho'oholo 'ana no ka nui o ka 'ikepili i loa'a. Heluhelu ko kākou mau waihona no'ono'o kanaka a 'ā nā 'a'alolo uila. Lula 'ia ko kākou na'au a 'uhane paha i ka nui o ka lula 'ia e nā mīkini, nā mana'o kolonaio, a me nā mea a kākou e ho'ohālikelike ai me ko kākou nohona. 'Oiai, he like

¹⁰ Biometric authentication - na Nāhūewai i haku.

ko kākou kino, o'o 'oko'a kākou a he pā wale nō me ka pākela pono.

'Ai 'Ikepili

He mau pono ko ka W'IH e like me ko ke kanaka. He pono ka 'ai ma'ema'e a hō'ikehu (he 'ai 'ikepili), i kūpale, a i maha ka na'au i ke kēkelē, a he kōā e ho'okō ai. I mea e 'ai maika'i ai ka mea i pono ai, he pono ka ho'okuleana 'ia e nā kānaka 'epékema lolouila i mana'o wale nō no ke kūpono o ka W'IH.

He 'ai pono ka 'ai 'ana i ka mea kiko'i pākahi. I la'ana, ma ka māhele kālā o ka W'IH, he pono ka 'ikepili kālā me nā 'ikepili kino e like me ko ke kanaka lāhui, kaumaha, lō'ihī a me ka ho'ona'auao, a he mau mea e no'ono'o 'ia he 'ōpala paha e pā'ewa'ewa ai ka 'ae 'ai'ē. 'A'ole wale nō 'o ka 'aipono he no'ono'o 'ia no ka 'ikepili 'oi aku a maika'i a'e, 'a'ole paha e hua 'oia'i'o ka ho'okikina i ka W'IH. E nihi ka hele ma nā kūmole, me ka hiki ke ho'oka'a kūpono aku i ka 'ikepili. A no laila, e kūpale maika'i 'ia ka 'ōnaehana laulā i 'ole e pilikia i ka po'e 'ino.

'O kekahi 'ano 'ai pono ka 'ai 'ana i ka 'ikepili 'ānō i kūpono ma ka ho'oholo 'ana. Ke 'ai a kālailai 'ia ka 'ikepili, he hana 'ia 'a'ole e kō wale ai ka pahuhopu. No ke kaiāulu 'Ōiwi, he pono ke kaulike ma muli o ka po'e ho'okolonaio a 'ae aku i ke ola kūpono o ke kaiāulu ma kahi kūpono. I loko nō o nā 'ao'ao 'enehana, he hiki ke 'āwili 'ia ka 'ike wahi pana ma luna o ka 'āina a ma luna o ka 'āina uila kekahi.

Nā Mana'o Pani

E like me ka mea i hāpai 'ia ma ke kūkā lōina Coquille ma ka ho'omaka o kēia pepa, 'ae'oa pinepine ke kaiāulu 'Ōiwi i ko lākou mālama 'ana aku i ke ao kūlohelohe, i nā kūpuna, i nā 'ōpio, i ka holoholona a me nā kino 'ē a'e. I loko o ko kākou ho'olauka'i 'ana i ko kēia mua aku i loko o ke ao uila, a me ke kauka'i 'ia o ka W'IH a me ka 'enehana 'ŌP'I, he pono nō ka ho'omaopopo 'ana i ka mālama 'ia o ka W'IH me ka 'ikepili kanaka a me nā mea kino 'ole o ke kaiāulu, e maopopo iā lākou iho a kūkulu pilina me ia nō. He pono ke kahua o kēia mau mea ma ka hō'ihī, ka hilina'i, ka mālama pū 'ana, a me ka no'ono'o a wānana mua 'ana a'e i ka pā 'ana o ko kēia mua aku i ka hana. Hō'ike ka noi'i nowelo 'ana a'e i nā kūkā 'ana no ka W'IH a me ka 'ŌP'I ma ka ho'omalele 'ana aku, ka ho'oholo 'ana aku, a me ka mālama 'ikepili 'ana no ka pono o ka 'Ōiwi, 'a'ole nō lawa ka nānā 'ia o ia mau mea. He ko'iko'i nō kēia kūkā 'ana no ke kālā, ka 'enehana kūka'i mo'omeheu me nā mana'o ho'okolonaio, no ka hiki ke hō'ike aku i ka mana'o ola, mana'o ea, ka mana'o lōina, a me ka mana'o no kēia mua aku. E like me ka hāpai 'ana o ka holoholona a me nā kino kanaka 'ole i ka 'enehana o ke ahi no ka honua, pēlā nō ka hana a ka po'e kūkulu W'IH, ke kaiāulu, ka hā'awi manawale'a a me nā mīkini ma ko lākou mau kuleana kiko'i no ka W'IH. Eia nō na'e, he pono e hana 'ia ma ke 'ano pālūa o ka lapa'au a me ka hō'ike i ke ko'iko'i o ka pilikino a me ka ho'ihō'i hou.

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Ka Hīpu‘u Hele

*i. the reach*³

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ii. the crown

‘o kēia ‘o gn-z11 ka mua a me ka hope
 hānau ke ao mai ka hohonu mai
 a hīpi‘i iho nei kekahi ma hope o kekahi
 he emi a nui a emi a nui a‘e
 ‘o ka palena ia o ka hiki i ka maka ke ‘ike maka, ‘a‘ole na‘e ‘o ka na‘auao
 huki mai ka mea a me ka hana a kokoke
 i ke ala i ka pae ‘āina
 pena ‘ia nā palena

[]

Helu Pā‘ālua me ka Po‘ina Nalu

He ‘I‘imi aku i ka like
 Ma waena o ka pau ‘ole a me ka nui lonoa o ka lima,
 E kūpale ana i nā kilo komo hewa i mana‘o komo malū
 Helu pā‘ālua
 E po‘i i ka nalu
 Ma mua o ka hōkua a pau aku nei

[]

³ The ‘crown’ and the ‘reach’ are terms used by Adrian Tchaikovsky in his science fiction novel *Children of Ruin*. The story features a species of gene-engineered octopuses accidentally seeded into an alien world, where they develop consciousness as well as advanced intelligence. The terms are used, respectively, to describe the central and arm-based nervous systems of the octopus’ physiology. Tchaikovsky, A. (2019). *Children of Ruin*. New York: Macmillan.

Ka 'Ike I-a-maka

He pa'a-ku i kēia
 Ma ka holo a'a lolo, e nui a'e ana
 'ālihi lani māmā a'e ma mua o ka hō'ike
 Mamao aku, ua 'ikea ka maika' i o nā lima 'ewalu o'u
 E ale ana i ka 'ikepili ma ka poke 'ōnaehana hōkū hele
 He kākā, he lolo, he hailona, he ho'ā'o
 E wehe ana i ke kahi, ka lua, ka hola, ka hā
 A pahu ana i ka 'ono pāhā a hina
 I ka I-maka-'ole
 Ka hiki ke nānā iā loko o ka maka
 Ka pākela 'ānō
 Ke koho a lomilomi i ka 'āpana o ka honua
 Mai ke au o ka manawa
 Ka 'āpana e mālama 'ia iho nei
 E ho'oholo a paka aku
 E ho'omau mau ana
 A ho'i 'ole mai
 -'a'ole ho'ololi kou wahi ma Wai'anae i kahi o Waimānalo, 'a'ole anei?
 -'a'ole ma ka minuke a milenio paha

[[]]

“Mana'o ke kanaka 'o ka 'oi ia o kona ho'oholo a aka akamai, 'a'ole na'e i hiki, 'oia, ua haku 'ia ke kino me ka loa'a 'ole o ia mau mea.”⁴

-Benjanun Sriduangkaew in *And Shall Machines Surrender*⁵

Mō'aukala: Ka 'Ōpiopio o ka W'IH

Pehea ke hānai pū 'ia ke keiki me ka W'IH? Pehea ka 'ekolu, i 'oko'a ko lākou kūkulu 'ia, ka 'ike, a me ke ka'akālai a'o?

E moemoeā no kēia mau W'IH:

AKO-akamai

'o Akeaakamai (ma ka 'ōlelo Hawai'i): he kanaka 'i'imi i ka 'ike.

⁴ “Humans think we're creatures of pure logic and absolute objectivity, but that's impossible when we were fashioned by anything but.”

⁵ Sriduangkaew, B. (2019). *And Shall Machines Surrender*. Gaithersburg, Maryland: Prime Books.



‘ōlelo wehewehe: He moemoeā no ka ‘ekolu kinona o ka W‘IH i loko o ka waihona no‘ono‘o o ke keiki: Aia ka mea Aanissin ma lalo ma ka hema, aia ka mea AKO-akamai ma ka ‘ākau; a aia ‘o He‘e ma hope. Ki‘i na Kari Noe, 2019.

Kūkulu ‘ia ka AKO-akamai ma luna o ke kūkulu ‘ia o ka AKO- ‘o ke Aloha ‘Āina, ke Kuleana, a me ka ‘Ohana. Waiwai nō kona mahu‘i mua ‘ia; ‘o kona kuleana mua ka mālama ‘ana i ka waiwai no nā hanauna e hiki mai ana. ‘Imi mua ‘o ia i ka ‘āina a me ka ‘ohana, i mea e maopopo ai ke ko‘iko‘i o ke kākō‘o ‘ia o ko lākou waiwai.

Aanissin

Aanissin: “ka ne‘e pono ‘ana o ke au o ka manawa” a i ‘ole “ka hana wale nō, a i ‘ole, ka pule ‘ia o ke kino, e ‘ike ‘ia paha nā mea a pau—ma kekahi ‘ōlelo—ma ke ‘ano he me‘e hana keaka kino ‘ole, e puka aku ana mai loko aku, a i ‘ole no ke ‘ano o kekahi hanana.”⁶ ⁷ Mai loko mai kēia o kekaih kūkā ‘ana ma

⁶ “the articulated notion of [the] event moment” or “action alone, or the manifestation of form, where anything that might—in another language—be portrayed as actor or recipient is inseparable from, arising within, or the essence of the event.”

⁷ Little Bear, L, and Heavy Head, R. (Winter 2004). “A Conceptual Anatomy of the Blackfoot World.” *ReVision*, vol. 26, no. 3, p. 33.



‘ōlelo wehewehe: Kāhiko ‘ia ka W’IH i ka lei kukui. He mau kino nā wahi waiho‘olu‘u no ke ka‘ina o ke kūkulu ‘ana o ka lolouila ma nā a‘a lolo; ‘Okō‘a nā lālā o ke ‘ano o ka W’IH, a no laila i ‘okō‘a ai nā waiho‘olu‘u no nā ‘ano ‘okō‘a. Pili ka mā‘ama‘ama ‘ana no ka nui o ka holo ‘ana o ka mana‘o pākahi ‘ana iho. ‘O ka hema o luna ka Aanissin; ‘o ka hema o lalo ka AKO-akamai; a ‘o ka lei ka He‘e. Na Kari Noe ke ki‘i, 2019.

waena o Little Bear lāua ‘o Heavy Head no ka ‘ōlelo Blackfoot, a no ke kū ‘ana paha o ia ‘ōlelo me ke kālaikūlohea quantum, ‘oiai, lole mau nā mea a pau.

Maopopo i ka W’IH Aanissin ke kahe o ka ‘ōnaeao, ka mākēneki o nā hōkūhele a pēia ka hemo o ka mea hihia o ke kumu Newtonian, ke kumu a kākou e pili mau ai. He mau kaime o ka wā i hala, ka wā e kū nei, a me ka wā e hiki maila kēia ma ke ‘ano he huina, a he mea “four dimensional,” kahi i hana ‘ia ai nā mea a pau, a kahi ho‘i e hana ‘ia ai nā mea a pau—he pono wale nō ke kanaka e ‘ike i ke ala i laila.

He‘e

He‘e (in ‘ōlelo Hawai‘i): octopus

Unuhi ‘o He‘e ma wane o ka AKO-akamai a me ka Aanissin. He mea ‘ē a kama‘āina nō ho‘i ‘o He‘e no ka lolo a me ke a‘a lolo, he kuhikuhina a he mea nānā ma kona kuleana iho. Holo kona mau lālā he ‘ewalu

(hapa nui ‘akomi) ma ka manawa he mau miliona ka wikiwiki ma mua o ka waihona no‘ono‘o kanaka, he wae ma waena o ka ‘ikepili he petabyte na ka Aanissin ma kekahi manawa a wahi like nō ho‘i. ‘O nā mea hapa nui ‘akomi, he pākela ka ‘ike a me ka maopopo, a na kekahi mea o loko e alaka‘i ma ka laulā a nāna e hāpai ana i nā mana‘o.

Kūkākūkā mau nā W‘IH ‘ekolu a me ke keiki i mea e ho‘oholo ai. ‘Imi mau ‘o Aanissin no ka maopopo i nā kaime ‘ekolu; na He‘e ka wae ‘ana i ka ‘ike pili mai ka mana‘o hohonu o ka Aanissin i mea e maopopo ai iā AKO-akamai ka wā e kū nei. Na AKO-akamai e ho‘okahua i ka ‘ikepili ma kona kūkulu AKO ‘ana i mea e hāpai ai i nā mana‘o i ke keikikāne e hana. o hohonu o ka Aanissin i mea e maopopo ai iā AKO-akamai ka wā e kū nei. Na AKO-akamai e ho‘okahua i ka ‘ikepili ma kona kūkulu AKO ‘ana i mea e hāpai ai i nā mana‘o i ke keikikāne e hana.

Lua ‘ole kēlā a me kēia pāhā (ma ka li‘ili‘i) ma ‘elua pae. He mau mo‘okū‘auhau nō ko lākou ‘ekolu, a pēia ke keiki. E like me ka ulu o nā W‘IH ‘ekolu ma kona ‘ana iho, pēia ka ulu o ka ‘oko‘a ma waena o ko lākou mau ‘ano. A no laila i ‘oko‘a ai ka ‘ike nohona o nā W‘IH ‘ekolu mai ka la‘ana like mai, a ‘o ka hopena kekahi mau kahua o ka ‘ike nohona i hiki ke a‘oa‘o ‘ia ‘o ia. A ‘o kekahi mea, hilimia kēlā a me kēia lālā o ka pāhā kekahi i kekahi e like me ka ulu o ke keiki, i mea e kūkulu ‘ia ai ke akamai o ka hui mai kinohi aku o kona ala.

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4.4

Ke Ala e Kūkulu Kūpono ‘ia ai kekahi Mea

Na Suzanne Kite me ke kama‘ilio pū me

Corey Stover, Melita Stover Janis, a me Scott Benesiinaabandan

Kūkulu ke ka‘ina hana ‘Ōiwi i kā kākou pilina me ka honua ma ke ‘ano kūpono, me ka ho‘ēmi pū i ka pā o kākou, o ko kākou kaiāulu, a o ke ao kūlohelohe. He kahua ka pō‘aiapili o ka wahi, ke kālaikuhikanaka i ‘upu ma ia wahi, a me ke kaiāulu no ia mau wahi no kēia mau ka‘ina hana, mai ka pōhaku a‘e i ka holoholona i ke kanaka.

He ‘elua la‘ana o kēia alaka‘ina no ka ho‘oholo kūpono ‘ana ma ke kūkulu ‘enehana. E ho‘omaka au ma ke kūkulu ‘ia o ka hale Lakota ho‘okahe hou ma ke ‘ano he ‘oloke‘a kālailai e kālailai ‘ia ai ke kūkulu hāme‘a lolouila. A laila, hāpai a‘e au he la‘ana i pono loa ai ke ka‘ina hana e kūkulu ai i ka ‘ōnaehana W‘IH ma ke ‘ano he kūpono. Ua hiki ke paupauaho i ka nui o kēia hana e kūkulu ‘ia ai ka ‘ōnaehana ma ke ‘ano kūpono “he maika‘i ke ‘ano,” He ‘oia‘i‘o iho nei ke ho‘ā‘o e kūkulu i ka W‘IH kūpono. ‘A‘ole paha i hiki i nā mana‘o a pau, ‘o kekahi nō na‘e he hiki inā ho‘oholomua ‘ia ka noi‘i kūpono, a ua hiki paha i ka loli wawe ‘ana o ka pā‘oihana ‘enehana a me ke kūlanalana o ka uku ‘ana no ke kumuwaiwai.

He aha ke ‘Ano Kūpono? He ‘ōlelo Lakota kēia ma ka ‘ōlelo ‘ana no ke ka‘ina hana kūpono. Ho‘ohana ka ho‘oholo o ka Lakota, a pēlā nō kekahi mau ho‘oholo ‘ana o ka ‘ōiwi, i kēia mau ‘oloke‘a no ka pono o ‘Ehiku Hanauna e hiki maila. A ke no‘ono‘o ‘ia kēia ma ka W‘IH, ‘a‘ole wale nō i pili ka ‘Ehiku Hanauna i ka ‘āpōpō, i nā W‘IH e hiki loa mai ana. “Wānana ke kuana‘ike Lakota he ‘Ehiku Hanauna i hō‘oia i ka honua kūpono no ia mau hanauna he ‘Ehiku,” wahi a ko‘u hoahānau ‘o Corey Stover.

‘O ke kahua o ko‘u noi‘i nowelo ‘ana i kēia pō‘aiapili ke kālaikuhikanaka ‘ana o ke kūlana o nā pōhaku i ke kanaka Lakota. ‘A‘ole na‘e kēia he ‘ōlelo no nā Lakota a pau, he kahua na‘e o ke a‘o ‘ia i waena o ko‘u ‘ohana. He akāka loa ka hopena o ia mau no‘ono‘o ‘ana iho ma ke ‘ano he ‘oloke‘a ‘ōnaehana kālailai no ka ho‘okumu ‘ana he pilinakūpono me nā pono e kūkulu ‘ia ai ka hāme‘a. ‘A‘ole au e noi nei e no‘ono‘o ‘ia ka lolouila he mea ‘kapu, he pono nō na‘e ka no‘ono‘o ‘ia ka hō‘ihi ‘ia nā mea pono ma waho o ke kanaka. Maopopo ke kālaikuhikanaka pōhaku o ka Lakota ma nā pōhaku lapa‘au, nā hale ho‘okahe hou (i mana‘o ‘ia ‘o ka “Grandmother a me nā Grandfather), ‘o nā pōhaku o ke ahu a pēlā wale aku. ‘O ko‘u ‘anakē, ‘o Melita Stover Janis, “ke loa‘a ‘oe i ka pōhaku, he mana‘o ia e hele aku iā ‘oe...e ‘ōlelo aku ana ka ‘uhane o ka pōhaku iā ‘oe...he mau makahiki o ka loa‘a ana he ho‘okahi. Ke ‘imi ‘ia aku nei ‘oe no kona nohona kekahi.”

Ma ka manawa a pau o ka ‘aha hale ho‘okahe hou, he mana o ke akamai i ‘oi a‘e ke akāka ma ke ‘ano he mea ‘o loko i ‘ike ‘ia e ka pōhaku kupunakāne. He ho‘oha‘aha‘a ka ‘aha na ka honua e puni ana ke kanaka, me ke kia pū ‘ana i ka ulu li‘ili‘i ‘ana a‘e.¹

¹ Posthumus, D. (2018) *All My Relatives: Exploring Lakota Ontology, Belief, and Ritual*. Lincoln: University of Nebraska Press.

‘O nā mea ko‘iko‘i o ke ka‘ina hana ‘Ōiwi nā ‘ōnaehana ‘ike ko‘ihonua e alaka‘i mai ana i ko kākou mau akeakamai e maopopo iā kākou ke ala kūpono loa. ‘A‘ole ke ‘ano o ka ‘ike Lakota he noho wale: loli mau ke ka‘ina hana, ka huli ho‘oholo ‘ana, ka loli inoa ‘ana, ‘oiai i loko o ka lōina ka pā ‘ana o ka honua i ko kākou ho‘oholo ‘ana a he pono ka loli mau i loko o ka pilina ‘oihana. ‘O ka hopena o kā kākou ho‘oholo ‘ana—a me ka ‘enehana— i loko o ke ao e maopopo ai kākou i nā lima e huli ana i ka honua a me ka ho‘ohana ‘ia. Ua hiki i ia mau lima i loko o ke kaiāulu ‘Ōiwi, ma ke kuana‘ike i loko o ko kākou pilina, ua hiki ho‘i ke hō‘oia ‘o wai nā po‘o, ‘o wai nā lima ho‘oholo, ‘o wai nā limahana, a ‘o wai ka po‘e e kū‘ai. He pono ka hō‘oia ‘ana i ke ala e pā ai ka mea e kūkulu ‘ia i ia mau lima, a me ke kuleana o ia pā ‘ana.

Ka ‘Imi a Loa‘a W‘IH

He mau ‘ao‘ao ko‘iko‘i ko ka ‘ōnaehana W‘IH: (a) ke kaha ki‘i W‘IH, (b) ke kākomo, (c) ka‘ina huli hā‘ina e ho‘oma‘ama‘a ana i ka ‘ike pili e kū nei ma ka wā ho‘okahi o ka no‘ono‘o ‘ana, a (d) ke kāpuka. Ua hiki paha i kēia mau ‘ōnaehana ke ho‘omalele ‘ia i kekahi mau wahi ma luna o nā wahi kino maoli, he pono nō na‘e e ‘oia‘i‘o i ka po‘e kūkulu a me ka po‘e ho‘ohana i mea e ‘ike ‘ia ai ka W‘IH ma kekahi mea piha a maoli nō. ‘O ka ‘oloke‘a o ke kaha ki‘i W‘IH, ‘o ke kākau ‘ana i ka polokalamu, a me ke kūkulu ‘ana i ke ka‘ina huli hā‘ina; he mau mea e holokahi. He pono nō e kūkulu pākahi ‘ia nā māhele a pau ma kekahi ‘ano ‘Ano Kūpono’ i mea e hui ai nā mea he kūpono ma ka nui. He ‘oia‘i‘o nō kēia mai ke kahua a‘e: mai ka ho‘oma‘ama‘a i ka ‘ōneki.

Kia nā la‘ana e hiki mai ana i nā mea kino, ‘oiai ‘a‘ole i hiki i ka W‘IH ke no‘ono‘o ‘ia a ho‘oholo kūpono ‘ia nā māhele. He pono nō nā lula kūpono no ka holo helu lolouila ‘ana ma muli o kona kūlana ma ka unuhi ‘ana i ke kumu waiwai ma ka pae o ka honua. He pono nā mea kau‘āina a me ka mea kūloko,² a pēia nō ka ho‘oholo ‘ana he lako pō‘aiapuni ‘ia ka mea e kūkulu ‘ia ai ka lolouila, a pēlā nō ka pono ‘o ka ho‘oponopono.³

He mau la‘ana ka uku, ka makana, a me ka hana aku a hana mai no ka Hāme‘a Holo Lolouila o lalo. ‘O ke ākea o ka mana‘o o ke kālepa ma loko o ke ao kūlohelohe kahi mea ko‘iko‘i i ke kālaikuhikanaka ‘Ōiwi, a i mea e kahua ai ke ka‘ina hana ‘Ōiwi ma kahi kino e kūlia a‘e ana i ke kū‘ē i nā mea e hilimia ana i nā kumuwaiwai a me nā kānaka.

Ke Ala e Kūkulu ‘ia ai he Hāme‘a Holo Lolouila ma ke ‘ano Lakota

Kākau pū ‘ia me Corey Stover a me Melita Stover Janis me nā kakaha maiā Scott Benesiinaabandan

He wahi ka hale ho‘okahu hou e haku ‘ia ai ka ‘ike no ka honua. He mea pono hana ia hale kiko‘ū me nā ka‘ina hana e huliāmahi a holo pū ai. Ke kō nā ke‘ehina a pau o ke ka‘ina hana no ka hale ho‘okahe hou, ua maopopo ke kūkulu Kūpono ‘ia.

² The Canadian Government Offers Responsible Business Conduct Abroad—Questions and Answers, (September 16, 2019), Ottawa: Global Affairs Canada <international.gc.ca/trade-agreements-accords-commerciaux/topics-domaines/other-autre/faq.aspx>.

³ The Repair Association is an independent American repair market advocacy organization (repair.org/policy).

KE ALA E KŪKULU KŪPONO 'IA AI KA HALE HO'OKAHE HOU	KE ALA E KŪKULU KŪPONO 'IA AI HE HĀME'A HOLO LOLOUILA
KE A'OĀKUMU 'ANA	
<p>Ma ke kūkulu kūpono 'ana o ka hale ho'okahe hou, he Mālama Ahi kekahi no ha'i.</p> <p>Ua a'o ko'u kupunakāne mai kekahi 'elemakule Lā'au Lapa'au, a ua ho'omaka ka Hulahula Lā me ia. Ke Hulahula Lā kekahi, he ho'omākaukau mau ia no kēlā a me kēia lā o ka nohona, a me ka ho'okahe hou pinepine 'ana. He a'o lō'ihī mai ana nō ke a'o mai nā kūpuna a me nā lālā o ke kaiāulu no ke ala pololei e hana 'ia ai kēia mau mea. Ma mua o ka ho'omaka 'ana o ke kanaka i kāna hana iho, he pono nō ka ho'omoemoē 'ana no ke kāhea 'ia e nā 'uhane no ke kūkulu 'ana i ko lākou ahu hamblecha iho, a i 'ole he ho'omau kā lākou i ke kāko'o aku.</p>	<p>He pono mua ko ke kūkulu 'ana i kekahi hāme'a holo lolouila 'o ka hālāwai kōmike 'ana me ka po'e no lākou ka 'ike a me ka no'eau i ka helu lolouila, ke kūpono, a me ka mine 'ana.</p>
KA MAOPOPO O KA PONO	
<p>Ma mua o ke kūkulu 'ia o ka hale ho'okahe hou, he pono mua: 'oe, kou 'ohana, a me ke kaiāulu i pono ai ka ho'ōla, he wahi e pule ai, he wahi e 'aha ai, he wahi e lapa'au ai, a he wahi i pono pākahi ai ke kāhea 'ia o nā mea o ke kaiāulu.</p>	<p>No ke aha i pono ai he hāme'a kino maoli? Ma kēia la'ana, no ka ho'okipa 'ana he polokalamu W'IH i kekahi mea maoli i kūkulu kūpono 'ia.</p>
KA MAOPOPO NO NĀ LIMA HO'OHOLA	
<p>Nui ka po'e lima ho'ohola i loko o ka hale ho'okahe hou, he lawa nō na'e nā kōā e noho pākahi ai nā lālā o ke kaiāulu, ka po'e i maopopo a maopopo 'ole paha, ka po'e i 'ike 'ia a 'ike 'ole 'ia paha, e like me:</p> <ul style="list-style-type: none"> • Ka 'Uhane Pōhaku • Ka Po'e Meakanu • Ka Po'e Holoholona • Ka Po'e Kanaka • Ka 'Uhane Kia'i 	<p>'O ka po'e o ka hāme'a</p> <ul style="list-style-type: none"> • ke Kaiāulu o kahi o ia mau Kumu Waiwai • ke Kumu Waiwai • ka Honua o ke Kumu Waiwai • ke Kaiāulu e Pā ana i ke Ala Kau a me nā Hāme'a e alakau ai • nā Kaiāulu no lākou ka 'Ike e Kūkulu 'Ia ai • na Kaiāulu o Lākou ka Hopena o ko Lākou Ho'ohana 'ia • ka Po'e Nāna e Kūkulu

KA MAOPOPO O KE KUMU WAIWAI

Kūkulu 'ia ka hale ho'okahe hou i nā kumuwaiwai: he lā'au wilo, he pōhaku, he paka, he hainakā, he 'ili bupalo. He mau mea kēia i lau ko lākou ka'ina hana, a me k ka'ina 'ano like no kēlā a me kēia 'ano. He pono pākahi ke lawelawe 'ia me ke ka'ina hana, a me kekahi 'Ano Kūpono, me kā hāpai pū 'ana he mea waiwai e kālepa ai kahi waiwai. Nui nā 'ano e kālepa ai ka mo'omeheu Lakota. Mai ke kālepa i ka hā'awi pākela 'ana i ka'a o ka 'ai'ē, a he mau hō'ailona nō ia e kū hō'ailona ana he pilina mau. He mana'o 'ia paha he hā'awi makana 'ana ma ka ka hā'awi 'ana o ko lākou 'i'o, oho, mea waiwai pono'i iho nō. He la'ana na'e ko ka holoholona hā'awi kuleana 'ana, me kekahi mau 'aelike lō'ihi 'ana e mālama iā kākou.

Ke hō'ili'i'ili 'ia he 16 kumu wilo no ka hale ho'okahe hou, he paka ka mea e hā'awi aku. He hā'awi paka ke loa'a mai he mea, 'o ka wai kekahi. Inā 'a'ohe āu paka, he hiki ke hā'awia he oho. Ma ka loa'a 'ana mai o ka 'ili bupalo, he nō'ono'o 'ia o ke ala e pepehi 'ia ai ka bupalo a me kona lole 'ia, i mea e maopopo le'a ai ke ka'i o ka 'aha ma ke 'ano Kūpono a i mea e ho'oku'u 'ia ai ka 'uhane bupalo ma kekahi 'ano Kūpono.

He pono ka mine kūpono 'ana i mea e akāka, maka'ala a noi'i 'ia ai ke kūkulu hāme'a lolo uila, a 'a'ohe ho'ohana iki 'ia he kumu waiwai hou a pono 'ole a'e e mine 'ia. He mea kāpuka ka wae 'ana i nā kumu mea e mine 'ia nei ('o ka pōhaku, 'o ka mekala, 'o ka minelala, pwa) he mea 'ino a ho'opō'aipuni 'ole 'ia paha.⁴

He aha ka mea e ho'ihō'i 'ia aku i ka honua ma ko kākou lawe 'ana i ia mau makelia? He aha ka mea e ho'ihō'i 'ia aku i ka po'e no lākou ka 'āina e mine 'ia? No ko kākou mau ēwe, e ho'omaka a'e kākou me ka uku kūpono 'ana.⁵ No ko kākou ēwe kino 'ole ka ho'oponipono 'ana i ka honua a ola hou. He pono nō ka ho'oka'awale 'ia he pu'u kālā e noi'i 'ia ai nā hana hou a'e e mālama 'ia aku ai kēia mau mea ho'ohaumia.

⁴ Vaute, V. (October 29, 2018). "Recycling Is Not The Answer To The E-Waste Crisis." *Forbes Magazine*, <forbes.com/sites/vianneyvaute/2018/10/29/recycling-is-not-the-answer-to-the-e-waste-crisis/#25a8732f7381>.

⁵ "As we see repeated throughout the system, contemporary forms of AI are not so artificial after all...At every level, contemporary technology is deeply rooted in and running on the exploitation of human bodies." Kate Crawford and Vladan Joler, "Anatomy of an AI System: The Amazon Echo As An Anatomical Map of Human Labor, Data and Planetary Resources," AI Now Institute and Share Lab, (September 7, 2018) <anatomyof.ai>.

“E la‘a ho‘i me ka paipu ‘aila, ‘a‘ole e ‘ae ‘ia he mea e ho‘ohaumia i ka hopena, e lawe li‘ili‘i wale ‘ia nō. ‘O ke kuana‘ike Lakota ka wānana ‘ehiku hanauna aku no ko lākou honua...‘O ko lākou (ko lākou mau kūpuni) meheu he ‘okanika...Ma ka lawe ‘ana aku i ka makelia e kūkulu ‘ia ai ka lolouila, pehea inā pā ‘ino ko kēia mua aku. Aia ma ke kūlana like me ka hale ho‘okahe hou. ‘A‘ole kākou makemake e lawe ‘ia he makelia e hiki ‘ole ke ho‘olako hou ‘ia ma ka wā pono...eia aku eia mai ko kākou nānā ‘ana ma kahi ‘ē a‘e ma kahi o ka ho‘ohaumia ‘ino ‘ana i ka ‘ohana wilo.”⁶

—Corey Stover

KE KŪKULU ‘ANA

He pule i kēlā a me kēia wā e ke‘a ai ka pou wilo a nāki‘i pū ‘ia me kekahi hainakā i waiho‘olu‘u. Hō‘ike ‘ia he hōkū ‘ewale ‘ao‘ao ma luna. Mea mai ‘o Melita Stover Janis, “Komo lākou [nā ‘uhane] iā loko [o ka hale], a ma ka hīmeni ‘ana o nā mele mua, he kāhea i ka ‘uhane i ka hou, he ao mai kekahi ao aku.”⁷

Ma ke kūkulu hale, he pule pū i kēlā a me kēia kūkulu, ma ka ho‘okau ‘ana a‘e i kēlā a me kēia makana. Wahi a Scott Benesiinaabandan, “He mana‘o nui ko kēia lauka‘ina, he ‘ehā pae i luna a he ‘ehā pae ‘o lalo o ka honua, a pō‘ai.”⁸

He kuleana ko ka ho‘olauka‘ina o nā lālā o loko, ‘oiai ‘o ia ke ka‘ina o nā pou wilo. Eia na‘e, ho‘ohui ke kaha ‘Ōiwi ‘ana i ka ‘oloke‘a me nā hō‘ailono, he ala e pāhola ai i ka lau uea, me ke kono pū i nā ‘uhane o loko a me ka hāpai pū ‘ana i ka paka i kēlā a me kēia ‘ao‘ao.

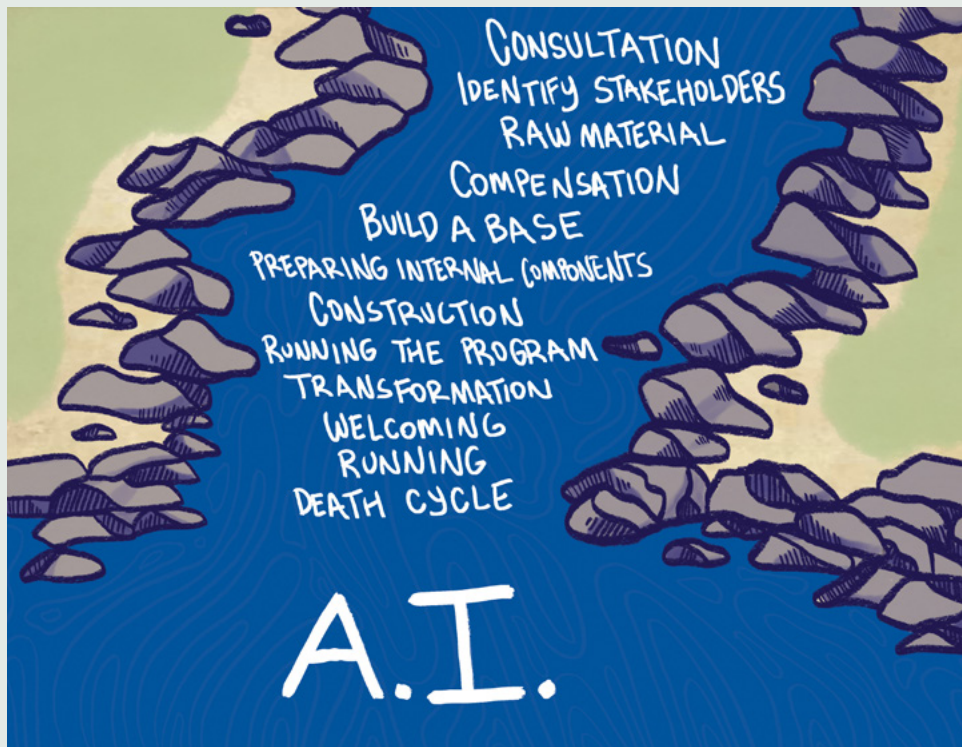
⁶ “For example, oil pipelines, we should not take something that will have a destructive effect, only take in moderation. The Lakota viewpoint is that we always look ahead seven generations to make sure seven generations is provided for through the earth...Their [our ancestor’s] imprint was all organic...When taking materials from the earth to build a computer, what if this matter harms us in the future. It is the same with the sweat lodge. We don’t want to take something that can’t be replaced in a reasonable amount of time...Sometimes we must look elsewhere instead of decimating an entire family of willows.”

⁷ “They [the spirits] come in through the top [of the lodge], as the singers sing the first songs, calling the spirits into the sweat, a portal from one world to the next.”

⁸ “He mana‘o nui ko kēia lauka‘ina, he ‘ehā pae i luna a he ‘ehā pae ‘o lalo o ka honua, a pō‘ai.”

HO'OMĀKAUKAU IĀ LOKO	
<p>'O kekahi 'ao'ao o ke ka'ina hana ke kūkulu 'ia o ke ahi e wela ai ka pōhaku o ka hale. Kūkulu kēia po'e, i 'ōlelo 'ia he Kahu Ahi, a waiho 'ia ihola. He pono ke Kahu Ahi e a'o ma ka haumāna 'ana a me ka maopopo nui nō o kona kuleana.</p>	<p>Ua hiki ke unuhi 'ia ke ka'ina hana Kahu Ahi ma ka ho'olauka'i 'ana i ka lolo a me ka RAM, e mālama kūpono i ka ho'omākaukau 'ana i kahi e 'ikea iho ai 'kahi' o ka W'IH.</p>
KE ALA A'E	
<p>I loko o ka hale, nīele aku nā pu'ukani i e kōkua mai nā 'uhane i ka ho'āla 'ana a'e me ka paka. Ho'onui wale 'ia nō nā pōhaku ke nui a'e ka po'e a me nā hui.</p> <p>"Noho nā kūpunakāne ma ka honua 'uhane a ala hou he nohona, he ola aku nō. Ho'āla nā pu'ukani o loko [o ka hou]," wahi a Scott Benesiinaabandan.</p>	<p>'Ae ka holo a me ka hō'ailona 'ana o ka lau e kāhea ka hīmeni i nā 'uhane e kōkua mai, e like me ko ka laekahi lolouila ho'oholo 'ana he polokalamu.</p>
KE KA'INA HULI HĀ'INA	
<p>He kuleana ko'iko'i a nohihi ko ke mele 'ana ma ka hale ho'okahe hou. He mau ka'ina huli hā'ina ko kekahi o nā 'ano: 'o ka 'ōlelo Lakota a me kona mau pae o ke kumu o ke ola a me ka mana'o, o ka ho'olauka'i 'ana i ke mele, ke koho a me ke ka'ina e mele ai nā alaka'i, a me ka lau o ka hawewe e haku 'ia ana a ho'ohana 'ia e nā ea a me nā leo kūlauna o ka leo kanaka.</p>	<p>'Hana pū ka ho'olauka'i 'ana i ke kākau 'ia o ka polokalamu, a me ke ka'ina huli hā'ina a me ka 'oloke'a helu lolouila e hana pū ma nā 'ano kiko'i, he kūpono ke kūkulu ma ke 'Ano Kūpono, i ho'ohui 'ia ai nā māhele ko'iko'i i ka nui: mai ka ho'oma'ama'a 'ana i ka 'ōneki.</p>
KE KŪĀKINO	
<p>Ke 'ākoakoa nā māhele hale a pau ma ke 'Ano Kūpono, kūākino a'e. Ke pili ka pōhaku me ke ahi, ka wai a me ke ea, he kahawai. Hā'awi 'ia ka paka a me nā mele e noi aia i ke kōkua a kāko'o, i nā pōhaku ('o nā kūpuna wahine a me nā kūpunakāne). Lilo ka wai he māhu, lilo ka pōhaku he lepo, lilo ka lā'au wilo he lehu, lilo ka paka he hunaahi: 'o ka kūākino ka mea ko'iko'i o kēia mau 'aha.</p>	<p>Ma ka ho'ohana uila, 'ikehu a me ke ka'ina pololei o nā makelia i loko o nā papa lolouila a me nā māhele kino 'ē a'e o ka hāme'a, a me ke kahe 'ana, kūākino hou a'e nō i ka 'ikepili kemiokika a no laila e maopopo ai i ke kanaka. A i loko nō o kēia mau kūākino e 'ikea ai ka loa'a o ka W'IH.</p>

KE KŪKALA 'ANA	
Ke ola ka mea o ka 'uhane, he pono ka 'aina no ia 'uhane. Ho'okupu 'ia ka 'i'o malo'o, ka wai hua'ai keli, a me nā 'aina pākela.	E kūkala 'ia ka lolouila i ke kaiāulu e kapa 'ia ai nā lima ho'oholo. He ko'iko'i kēia ke'ehina e kūkulu 'ia ai kēia mea ma ke 'Ano Kūpono, me ke akāka a me ka maopopo o ka mea i kūkulu mua 'ia a me ke kumu. I mea e noho ai i ka pō'aiapili, he pono nā pilina akāka o kēia mea a me nā lima ho'oholo.
KA PŌ'AIAPUNI MAKE	
Ua hiki ke wāwahi 'ia, hō'ano hou 'ia, ho'ihō'i 'ia a ho'okūākino 'ia. Ma ka pau o ke kau hale ho'okahe hou, hu'e i ka pale, a ha'alele me he ho'ohana hou lā. Wāwahia auane'i nā pōhaku, he wāwahia ma ka ho'ohana 'ia. 'Okanika nā mea a pau a ua hiki ke ho'ohana 'ia, ho'ā 'ia, a ho'ihō'i 'ia i ka honua.	'O ka hāme'a holo lolouila kino i haku 'ia ma ke 'ano kūpono, he pono ka Pono o ka Ho'oponopono. No ka po'e kūkulu ke kuleana 'o ka hopena o ka haku 'ia, ka ho'ohana 'ia, a me ko hope o kona ola, a pēlā nō no ka mālama 'ana i kēia hāme'a i ka nohona a me ka make.



'ōlelo wehewehe: Nā Ke'ehina Pākahi ma ke Kahawai Ka'ina Hana.
Kaha ki'i 'ia na Kari Noe, 2019.

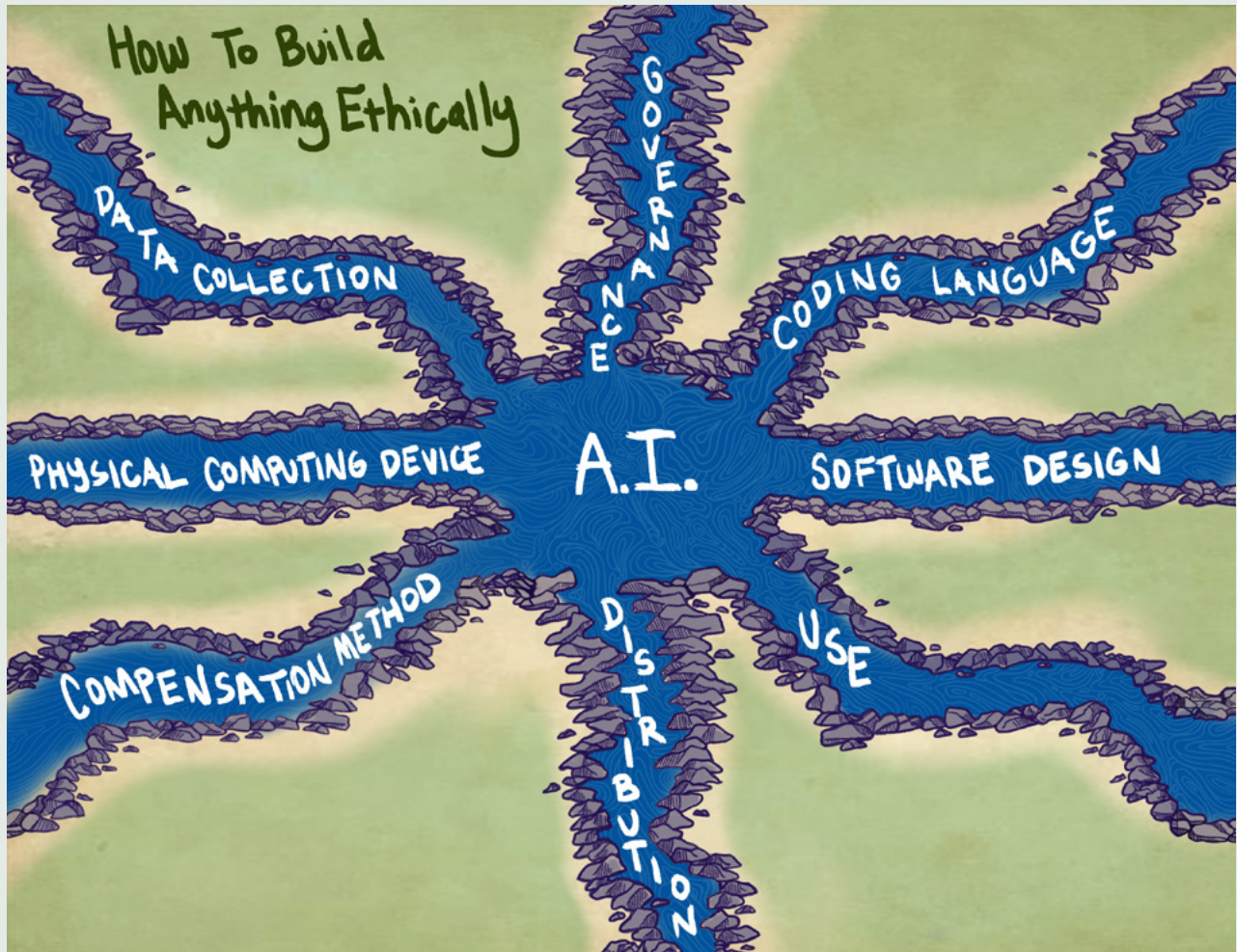
Noke ke Ka'ina Hana 'Ōiwi e Kūpono ka W'IH

Kaha ki' i 'ia na Kari Noe

Ma kēia mau ki' i o lalo iho nei a me ka pakuhi, hāpai au i ke ala e 'ikea ai nā ke'ehina o ke ka'ina hana ma loko o nā kahawai e manamana ana a muliwai i mea e kūpono ai ka W'IH.

NĀ NĪNAU E NĪELE AI NO KĒLĀ A ME KĒIA KE'EHINA KAHAWAI KA'INA HANA
Ka Nīnauele: 'O wai nā Kūpuna a me nā mea nona ka 'Ike no kēia mau ka'ina hana?
Ka Ho'omaopopo Lima Ho'oholo: 'O wai ka po'e o ke kaiāulu, kino kanaka a kanaka 'ole, pehea i pā ai ka wā i hala, e kū nei a me ko kēia mua aku?
Ka 'Ike Kumu Waiwai: He aha ka mo'okina e kō ai ke ka'ina hana?
Ka Uku 'Ia: Pehea e uku 'ia ai ka lima ho'oholo a mea nāna paha ke kumu waiwai a pehea e pā ai ka uku 'ia?
Ke Kūkulu: He aha ke ka'ina hana e pono ai ke 'ano kūpono o ko kēia mau māhele mālama 'ia?
Ka Ho'omākaukau iā Loko: Pehea e pono ai kēia ka'ina e ho'omākaukau 'ia ai nā māhele?
Ka Holo o ka Polokalamu: Pehea e ho'omaka 'ia ai ke ka'ina hana ma ke 'ano kūpono?
Ke Kūākino: He aha ka mea e kūākino?
Ka Welina: Pehea e ho'okō 'ia ai kēia ka'ina hana i ke ala e akāka ai ka po'e e pā aku ana?
Ka Lula o ka Pō'aiapuni Nohona: Pehea e mau ai ka ho'ohana 'ia o ka hopena o kēia ka'ina hana ma kekahi 'ano kūpono?
Ka Ho'omākaukau no ka Hala: Pehea e kō ai ka hopena o kēia ka'ina hana ma ke 'ano kūpono?

Ma ke kaha ki' i 'ana o lalo iho nei e hāpai ai au he 'ewalu kahawai e piha ai ka W'IH, me kekahi mau hi'ona i maopopo i ka W'IH, e like me: ke ala e ho'ohana 'ia ai ka 'ikepili e ka W'IH e 'ohi'ohi 'ia, ke ala e kūkulu 'ia ai ka hāme'a holo lolouila kino, ke ala e pā ai nā mea e uku 'ia i kona ho'ohana 'ia, ke ala e ho'ohana 'ia ai ka 'ōnaehana W'IH, ke ala e kūkulu 'ia ai ke kaha ki' i polokalamu, ke ala e kūkulu 'ia ai ka 'ōlelo helu lolouila, a me ke ala e lula a nānā 'ia ai ke kō o ke kuana'ike o ka W'IH. He mau pahu ho'omaka wale nō kēia mau kahawai ka'ina hana e hō'ike 'ia ai ai nā kahawai nui hou a'e i hiki ma ke ka'ina hana.



‘ōlelo wehewehe: Ke Kūkulu Kūpono ‘Ana o kekahi Mea: Ka Muliwai Kahawai Ka’ina Hana.
Kaha ki’i ‘ia na Kari Noe, 2019.

Ma kēia palapala alaka’i no ka ho’oholo kūpono no kekahi mau kūkulu ‘enehana i kūkulu ‘ia ai ‘elua ‘ano ‘oloke’a kālailai: no ko ke kūkulu hale ho’okahe hou Lakota kū hō’ailona ‘ana no ke kūkulu hāme’a a me ke ala e kaha ai ke kahawai ka’ina hana, a me ka no’ono’o ‘ia o ke kūkulu ‘ia o ka W’IH. He pono nō ke kūkulu i kā kākou mau ‘enehana iho, a e like me nā mea a pau, e pono ai he ‘Ano Kūpono’, he ala nō ia e no’ono’o ‘ia ai nā kino a pau, ola a ola ‘ole. Wahi a ko’u kupuna ‘o Maꞑpíya Nážiꞑ, “He mana’o o’u kēia no ka pōhaku: ke ‘ō’ili mai kekahi, a he ka’a ma luna ou paha i mua pono ou, aia i laila kona kumu-eia me ka mana’o e a’o i kou ‘uhane, i hiki paha ke lilo kāu ha’awina iā ha’i...”

Papa Kūmole

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4.5

Ka ‘Oni i ka Wai ‘Ukele:

Ka Ho‘ōla Loina Euskaldunak me ka ‘Ōnaehana W‘IH

Michelle Lee Brown

He ‘oi a‘e o ke kaukani makahiki o ka mō‘aukala ma wane o ka po‘e Euskaldunak (Basque) a me ka pilina puhi i pilikia i ka po‘e koloniaio. Ho‘ōla ‘ia ka pāhana Txixardin mai ka ‘īkoi o ka inoa o *txixardin*, ‘o ko mākou inoa kahiko ia no ka puhi ‘ōpiopio, i kapa ‘ānō ‘ia ‘o ka ‘European Eel’. Ke ‘ihi a kū‘ai ‘ia aku ma ke kau‘āina, ua loli ka inoa, ‘o angula no ka pohihihi o ka puana ‘ana mai o txixardin ma ke kālepa ‘ana. He māwae kēia ma loko o ka pilina a me ka loina, no ke kia ‘ana ma ka pākela ‘ohi a me ke kālā—he ho‘okahi wale nō ia o nā māwae loina mai ke kenekūlia 19 a hiki i waena o ka 20 ma Euskal Herria.

Ka Pāhana Txixardin

He ala ka pāhana Txixardin e kākau helu lolouila (hou) mai ai i ka pilina Euskaldunak—puhi ma o ka

pāheona a me ka noi 'i nowelo. He 'ekolu 'ao'ao ko'iko'i kona: 'o ka pepa 'oni a'e' a me ka mo'omana'o 'atikala e ho'onoho ana i ka pāhana me ia mau mō'aukala a pilina; he 'ohina mo'olelo a kaha ki'i 'o *Ancestral Descendants* highlighting e kahiāuli ana i ka 'oni o ka liliuēwe o ka puhi W'IH a me ka pilina kanaka Euskaldunak; a pēia ka 'enehana akakū ('EA) *Eel Elder* i hana 'ia ma 'ane'i.

He 'elua pahuhopu o kēia pāhana: 'o ka mua, ke kākau hou 'ana i ka 'alapa a me ka mea heluhelu. Ho'ohana 'ia ke kākou (hou) he mea e komo malū ma muli o ka po'e Haole—he hilimia ke kuana'ike o ka po'e e mālama iho nei nō i ka puhi, a 'a'ole no'ono'o wale 'ia nō he mea 'ē ma nā ho'olaha hou 'ana a me nā 'atikala 'extinction-porn' wahi a National Geographic. 'O ka lua, he pāhana kēia e pāhola ana i 'ekolu 'ana (he pepa, he mo'olelo, a he 'ohina kahaki'i, a he 'EA) a me ke ala e pā ai kekahi i kekahi i ka W'IH a me ka pilina kahiko puhi inā no'ono'o like 'ia ka 'enehana a me ka helu W'IH he 'ohana kekahi me kekahi—he ko'iko'i nō nā pūnaeweke pilina ma waho o ka hiki iā kākou.

Ka Pilina Puhi, Kākau (hou) 'Ia

Ho'ohana au i ke komo malū a me ke kākau me ka maopopo— 'o ke ala e wehewehe 'ia ai ka mau Basque ka 'ōlelo 'ana a'e i ka 'ōlelo i mea e lawelawe a kuana'ike 'ia ai mākou. 'O ke ala e pā ai ko mākou mana'o, he kuhi i kā mākou mau hana i ka honua, 'o ka honua 'o waena o ko mākou mau. Ma ka ne'e 'ana a'e mai ka mana'o koko a me ka 'ona 'ana i kekahi mea (he hewa), ho'ohana kēia pāhana a me ka 'ao'ao 'EA ma ke kiko'i ma ke 'ano ho'i he 'ikoi o ka mana o ka W'IH—puhi—'EA i mea e kākau hou 'ia ai ka Euskara a Euskara 'ole ma ke 'ano ho'ōla hou.

'A'ole kēia he 'ōlelo ho'okahi no ke ala e mālama 'ia ai ka puhi, a 'a'ole ho'i he mea pili i nā mea a pau. He laina nō kēia no ka puhi kiko'i, a me ke ala e mālama 'ia ai ma ka pāhana. E hāpai auane'i ka pāhana i nā kaiāulu 'ē a'e no ko lākou mālama 'ana i ko lākou 'ohana puhi ma ke alo o ke anilā, ke kūkulu, ka 'ino o ka 'ohi 'ai: he kino hou aku e ho'ololi ai paha mākou 'o ka Euskaldunak a Basque e huli i Iparralde a me Hegoalde no ka mālama a noho pū 'ana me ka puhi.

Ka Pilina Puhi W'IH, Kākau (hou) 'Ia

'O ka pahuhopu 'elua o kēia pāhana ka 'auamo 'ana i kēia mau loina pilina he 'enehana no mua: pehea kākou e mālama ai i ka puhi a me ka W'IH, a pehea e pili a hānai ai ka W'IH a me ka puhi iā kākou. Pehea ke ala e ka'ā ai ka W'IH no kēia mau pilina? Pehea e mālama a ho'ōla (hou) 'ia ai ka loina

¹ I use 'extinction porn' here to emphasize what the National Geographic article in the sources and other publications like it miss: for many non-Western/Indigenous/Aboriginal communities these are family and the 'tragedy porn' hurts—literally. Seeing a solitary eel in the image, isolated against black background for visual effect, to somehow capture the tragedy to make viewers 'care'. These eels are never in isolation, outside of Western imaginaries/writings: rather they are constantly wriggling, wrapping, swimming and moving through land, sea, and freshwater ecosystems in incredible ways. Seeing them cut out and isolated for effect hit me viscerally when I read that particular article—I wept at the sink thinking about sorginak and eel kin, how we've failed them. The more I learn, the more I love them and am in awe of them. That's what this Txitardin projects is about: perpetuating that love and relational coding.

Iparralde kahiko o kēia pāhana me ka 'ohana puhi ma ke 'ano he kilo i ka loli anilā a me ka pākela 'ohi 'ai 'ana, he 'anehalapohe paha o ke kino puhi? Ma ka wehewehe nā'ili 'ana i kā Melanie B Taylor, he ala kēia o'u e momona hou aku ai ka *afterlife* o ka puhi ma kona kino maoli a me ke kino o kahi uila.² 'O kahi hana nui o kēia pāhana ka no'ono'o 'ana no ke ala e kino ai ka W'IH ma o ka puhi a me ka ho'omaopopo 'ana i ka po'e waiwai, nā waihona o loko o ke kino, a me ka pilina i ka ho'ōla hou 'ia o ke kino ma o ka 'ike kikokiko, 'ike 'ōlelo, ka 'ike kākau (DNA a me ka helu lolouila) a pēlā wale aku. 'A'ole i hiki ke no'ono'o 'ia ko kēia mua aku me ka loa'a 'ole o ka puhi: ho'okahi wale nō ala kēia o ka ho'olauka'i 'ana i ko kēia mua aku o ka W'IH, me ka 'ae pū 'ana e komo malū, 'oni a'e, a e ho'opā 'ino i nā 'ōnaehana a me nā kino e ola ai ma nā wahi no'ono'o 'ole 'ia.

He kupu a'e o ka na'au 'olu'olu 'ole ma muli o ka ho'i 'ana i kēia mau palena noi'i pāheona o ka pāhana Txixtardin. He pono nō ia 'olu'olu 'ole.

He 'ano 'ē nō ka ho'i i kēia mau pilina mai kēia mau pāheona o ka Pāhana Txixtardin. He pono nō ke 'ano 'ē. He kuan'ike nō ia o ko kēia mua aku: he lole i ka mana'o hāiki a ma'amau paha no ke aloha, ke kaunu, a me ka 'ohana i mea e 'ōwehe 'ia aku ai ka wā i hala, a me ka wā e hiki maila no ke ola hou o ke 'ewe.

'A'ole na'e i hiki i nā ala a pau ke 'ole ka loli o ka pilina W'IH 'ānō—a no laila ka 'EA *Eel Elder* e wehewehe 'ia aku ai i nā māhele 'elua e hiki maila. Ua kup ua'e kēia pāhana 'EA ma ko'u no'ono'o 'ana no ke ala e kū ai ka W'IH i kēia pāhana Txixtardin; a me ke kumu e kōkua ai ka lu'u hohonu 'ana i loko o kēia pilina puhi no ka W'IH ma ka ne'e 'ana me ia, a me ka hāpai 'ana i ka lu'u 'ana ma kēia pāhana.

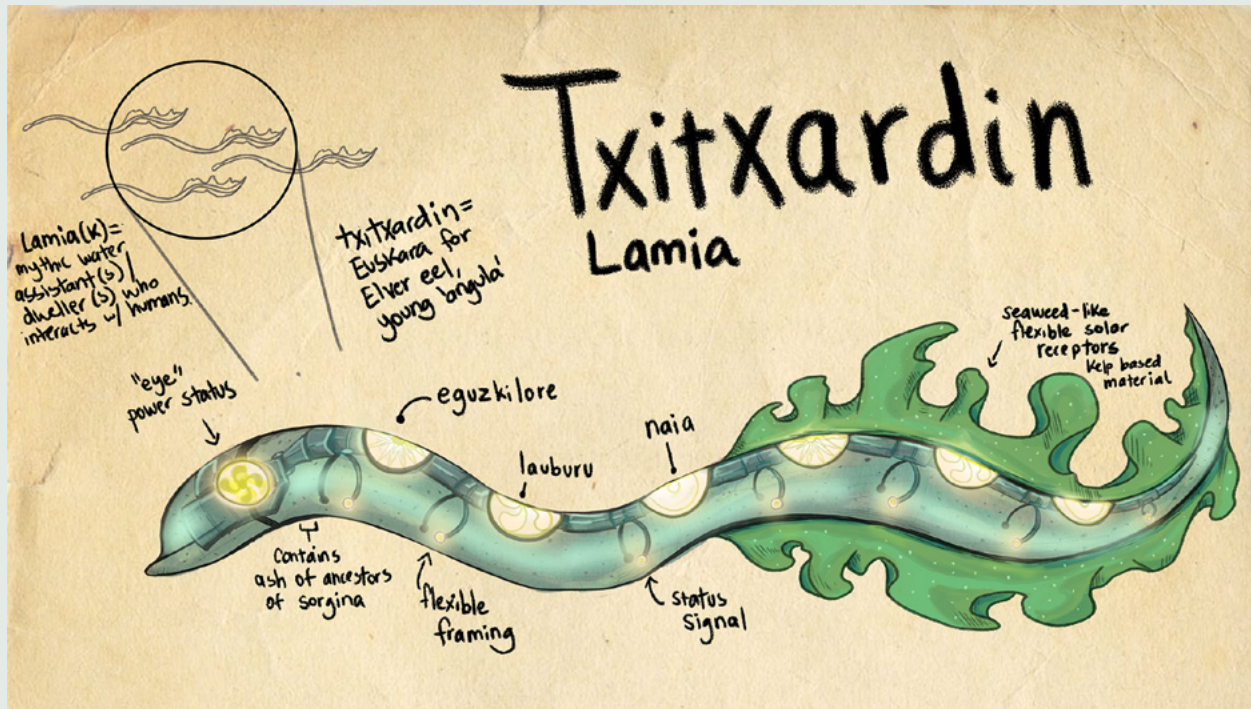
Nānā 'ia nō nā makelia e hale ai ka W'IH. Pā nō kona pilina me ka honua i kā kākou e 'āwili ana a pēlā nō kā kākou pili 'ana me ia. Ma ke ki'i Txixtardin lamiak o lalo nei, nānā 'ia nō ka hale 'ana ma kona kino puhi, a he kuana'ike nō ia o: ka makelia, ke ao kūlohelohe, ka 'enehana kanaka, a me ka 'ōnaehana W'IH e kūkulu 'ia ma luna o kā kākou mau ka'ina hana, mō'aukala a pilina. Ua hā'ule paha ka ho'ohana 'ia o kekahi o kēia mau mea; he ala na'e ho'i e ho'ōla 'ia ai lākou.

He kahua maoli nō ka mō'aukala o nā pilina Euskaldunak-Txixtardin i ke kahiko a me ko kēia mua aku o ke ki'i Txixtardin Lamiak i luna nei, 'a'ole na'e i mākaukau 'ē ka 'enehana e kūkulu 'ia ai. 'A'ole au i makemake e kaumaha nā hi'ohi'ona o ka DNA 'ole a me ke kūkulu 'ana i pili i ke kai, a pēlā nō ke kākau a kūkulu 'ana he kāmua. No'u pono'i ma ke 'ano he kanaka kaha 'oloke'a, he ko'iko'i ka ho'omaka iā waena. A i loko o ke emi hou 'ana iho o ka poe puhi, he ko'iko'i a'e nō ia mau pilina.

He W'IH o ke Kupuna Puhi

A no laila i haku 'ia ai ka 'EA Kupuna Puhi: i ka hālāwai W'IH 'Ōiwi, ua kupu ka mana'o o ka hānai

² "Afterlives" here signifies eels' past-present-future roles as embodiments of regeneration across multiple realms.



‘ōlelo wehewehe: He Ki ‘i Txitxardin Lamia kēia (he ‘enehana meaola puhi-W’IH) Kari Noe, 2019.

‘ana i ka W’IH ma kahi uila— ma kahi o ke kūkulu kino ‘ana he kāmua – a no laila e ‘ae ‘ia ai ko‘u kūkulu ‘ana i kēia W’IH ma ka nui i hiki. Eia ke hō‘ulu‘ulu aku nei i ka ‘EA kekahi me kekahi. A ma luna o kēlā, he kākō‘o kēia mau pilina puhi i nā māhele e hiki maila ma waho a‘e o ka ‘EA.

Ho‘omaka ka ‘EA *Eel Elder VR* ma ke kai hohonu i pō ‘ele‘ele. E like me ka holomua o ka ‘alapa, ‘ikea, lohea, a a‘o hou ‘ia aku no nā ‘ano mea ola o ke kai a puni. ‘O ka ma‘amaui, hō‘ea kekahi ‘alapa i kahi Kupuna Puhi, a aia i ka wā, kahi, a me ka pō mahina, a‘oa‘o mai ke kupuna i kahi ha‘awina kiko‘i e ‘ini ai ka ‘alapa ma kekahi mau ‘ano kiko‘i. He ko‘iko‘i i nā ‘oni lima a me nā hō‘ailona o loko o ka pā‘ani no ka mo‘omeheu Basque:³ ua ho‘ohana like ‘ia kekahi mau pōhaku, nā kino, nā kumu lā‘au, nā moku, nā ‘ano kākou, nā paena pūnaewehe, a me nā loulou huna, a pwa no nā makahiki he kaukani. Ho‘oka‘a‘ike ‘ia nā pae o ka wehewehena, a ho‘opili ‘ia kekahi o ia mau pūnaewehe pilina a me ia mau mea kū manawa o loko, me ia ‘EA.

No ke Aha ka W'IH?

I mea e ho‘onoho a ho‘omalele maika‘i ‘ia ai ia mau ha‘awina, a komo paha i ke kūkā a Joseba Zulaika he ‘nourishing negation’ i loko a kāna pepa “Nourishment by the Negative: National Subalternity, Antagonism, and Radical Democracy,” he pono loa ka ‘ōnaehana W’IH i mālama ‘ia e ke Kupuna Puhi

³ I pluralize cultures here as there are over three million people in the seven provinces of Basque Country and even more among the diaspora. This is a particular way of relating rooted in a coastal province in Lapurdi region.

ma ke 'ano he 'EA me ke kākau 'oloke'a W'IH o loko.

Eia nā mea i pono ai ka W'IH (a me kekahi mau mea):

- Ho'olauka'i kaulana mahina, nā kau ('elua) a me ke kiko'i kā'ei wahi (Poepoe Hapa 'Ākau, Hapa Hema, Kā'ei honua)
- No'ono'o pū 'ia ke kō'ai 'ākau a hema
- Ka pono koho 'ana i kahi mau mea i uliaulia a waiwai hou a'e ko ka 'alapa pā'ani 'ana ma waho o ka palena W'IH

He ko'iko'i ka ho'i 'ana i kahi kiko'i: ho'okuana'ike ka loa'a o kēia W'IH no ho'okahi o nā puhi holomoana, ka mea e hana 'ia, a me ka mea e hana 'ole 'ia no ka 'alapa.

Ka Ho'oulu Hō'ole Laulā

Ma kekahi mau wahi, 'a'ole 'ae 'ia ka 'alapa he wā kūpono e ho'opa'a ai i ka ha'awina a 'ōlelo waha a'e paha: e a'o 'ia ka W'IH Kupuna Puhi no ia mau mea. I la'ana: Inā ho'omaka ka 'alapa i kahi mea i kūpono 'ole ma ke kaulana mahina, a wā o ke kau paha, ua hiki i ka 'alapa ke hui pū me nā i'a ma kinohi, 'a'ole na'e me ka puhi. A i 'ole, inā maopopo kahi hapa o ke mele i ka 'alapa a hīmeni aku 'o ia i mea e 'ō'ili ai ke Kupuna Puhi a a'o no ka manawa kūpono, hele a kokoke ka W'IH Kupuna Puhi, a 'a'ole wale nō he holo puni a pā paha, 'a'ole 'oni kona lima, i like me nā lauana ma'amau. A, inā kau kekahi 'alapa i kona lima i luna, i mea e ho'ā 'ia ai ka mālamalama o ka hō'ailona, a laila wili a'e kekahi a'oa'o ha'awina, a luli ko ke kupuna po'o, aloha aku, a 'o ka ha'alele aku nō ia.

I mea e kōkua 'ia aku ai ka 'alapa a me ka hō'alo hihia inā kō, ua hiki i ka 'alapa ke kapa aku he i'a no kekahi wā a noho wale nō i loko o ke kai, e hō'ōia nō na'e lākou i ka manawa o ka 'alemanaka— no ke aha i pololei 'ole ai ka manawa? (i la'ana, e 'ō'ili a 'ālohi ana he mahina no kekahi manawa). 'O ke kumu e ho'ohana 'ia ai ka W'IH Kupuna Puhi ka ho'opa'a hou 'ana aku i ka ha'awina 'īkoi, 'a'ole ma ke 'ano poholalo. E 'ō'ili *paha* ka W'IH Kupuna Puhi inā hīmeni ka 'alapa (ma ke 'ano he makana manawale'a) - inā na'e 'a'ole i kūpono ka wā o ke a'o 'ana, 'a'ole 'ae ka Puhi i ka pae o ia pilina a me nā 'ōnaehana e ho'opa'a ana i ia ho'oholo 'ana.

Lohe wale 'ia nō nā ha'awina a 'ōlelo o ka pā'ani ma ka 'ōlelo Euskara: he pono ka ho'omaopopo 'ana o ka 'alapa a laila e 'imi 'ia aku e a'o no nā kaona o ka ha'awina. Ho'oikaika wale aku nō kēia 'ōnaehana W'IH i mea e pa'a ai ka hana: 'o ka pilina o ka noi'i ma waho aku o ka hāme'a 'EA e a'o hou aku ai. Hā'awi 'ia he 'ōnaehana kia'i e kēia kuana'ike Euskara no ka waiwai loa o ka 'ikepili e 'ōlelo ma ka Pelekānia a me ka Euskara ma kahi ho'okahi. Ua hiki ke loa'a ia mau palapala ma kahi pili o ka paena pūnaewe. I ia paena pūnaewe e loa'a ai ka pahu kolekole e kau ai nā kūmole a me nā hālau o kekahi mau kumuhana. I laila, ua hiki pū i nā 'alapa ke kama'ilio no ka maopopo 'ana o nā ha'awina a me nā kumu waiwai a me nā mea ho'oikaika.

'O ke ala e hāpai 'ia ai ka 'ōlelo pōkole o ka 'ike ku'una ka ho'olele ki'i 'ana o ke Kupuna Puhi ma ke 'ano he ha'awina a a'o 'ana ma o ka ho'olele 'ana i hā'awi 'ia e ka Txitxardin. He kū hō'ailona o ke a'o 'ana ka ho'olele ho'opilipili 'ana. E mae ana nō ia ho'olele 'ana a e pīna'i 'ia aku ka ha'awina, me ka paipai pū i ka 'alapa e 'ōlelo i ka ha'awina i mea e ho'omaopopo a pa'a na'au ai. E like me ka mea i hāpai mua 'ia, aia ka makana 'ia o ka ha'awina i ka nui o nā kumuloli e ho'omaopopo 'ia e ka W'IH. 'O ia mau kumuloli he like me ka pō mahina, ke kau, ka manawa o ka lā, kahi ma ka honua (kā'ai hema a 'ākau a waena paha), a me ke kō'ai hema a 'ākau paha. He pa'a nō ka nui o nā mea i hiki ke a'o 'ia no kēlā a me kēia hui kumuloli. A no laila he kumu ulialia hou kēia ho'olauna 'ana i ka ha'awina; a aia nō a 'ike ka W'IH i ka 'pa'a' e ki'i 'ia no ia 'alapa kiko'i ma ia manawa/wahi, e pono koho aku ka W'IH-Kupuna-Puhi i kekahi ha'awina mai ia mau koho mai. A no laila he wehewehena-kaona ma waena o ka 'alapa a me ke Kupuna-Puhi-W'IH ma waho aku o nā polokalamu mua o kinohi.

E Hō'ihī Kūpuna

He mau manawa nō ma waena o ke a'o 'ana aku. Ma mua o ka hā'awi ha'awina hou o ke Kupuna Puhi, e noi 'ia ko ka 'alapa ho'opau 'ana i ka pā'ani no kekahi 'ano lawe lima. E ho'oholo ka W'IH inā he kūpono ko ka 'alapa ho'opau 'ana i ka ha'awina, a inā 'ae, pehea e pani kūpono 'ia ai. Inā ha'alele 'ē ka 'alapa ma mua o ka pau pono 'ana—e pilikia auane'i ka ho'omau 'ana, a pā ke Kupuna Puhi me ka hikiwawe no ia mau pā'ani hou e hiki mai ana. I la'ana—'a'ole paha e 'ō'ili hou i kekahi wā a'e o ka pā'ana a laila he pono ka 'alapa e kūkulu hou i ka pilina i mea e a'o hou ai. Ho'ohana au iā Kupuna Puhi a me W'IH Kupuna Puhi ma ke 'ano ho'okahi, i loko o ka 'ōnaehana, ho'okahi o ka hulu. Hō'ākaka a'e kēia māhele i ke ala e no'ono'o 'ia ai ko ka 'ōnaehana W'IH kūkulu 'ia i loko o ka mekanika e ho'ohana ai kākou i ka 'oloke'a o kekahi mea kahua niho pa'a ma ka hopena o ka pā'ani.

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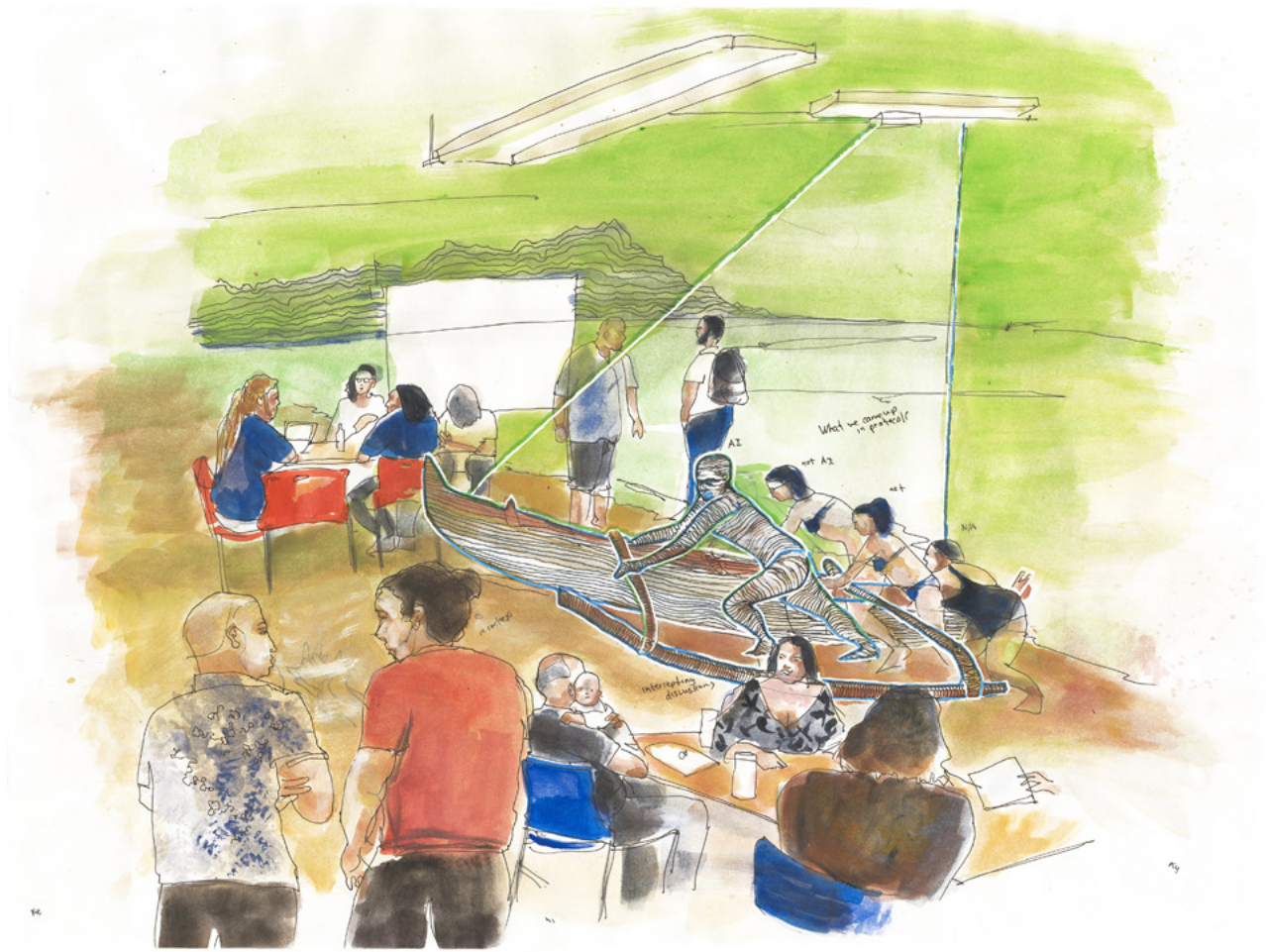
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SECTION 5

Prototypes

- 5.1. Ka Hana Maoli i ke Ka'ina Hana 'Öiwi
Caroline Running Wolf lāua 'o Kauka Noelani Arista
- 5.2. Ka Ho'öiwi 'ana i ka W'IH: Ke Ko'iko'i Nānā Nui 'Ole 'Ia o ke Kākā'ōlelo ma ka Palapala
Kauka Noelani Arista
- 5.3. Ke Ka'ina Hana Kūkulu no Hua Ki'i a me nā Ke'ehina aku
Caroline Running Wolf lāua 'o Kauka Noelani Arista
- 5.4. Akakū o Kuano'o
Michael Running Wolf



Canoeing the Virtual. Image by Sergio Garzon, 2019.

“ Tribal languages contain the tribal genesis, cosmology, history, and secrets within. Without them we may become permanently lost, or irrevocably changed.”

— Darrell Robes Kipp¹

¹ Kipp, D.R., (n.d.) “American Indian Millennium: Renewing Our Ways for Future Generations,” *The Piegan Institute*. <pieganinstitute.org/to-have-a-home>.

5.1

Ka Hana Maoli i ke Ka‘ina Hana ‘Ōiwi

Caroline Running Wolf lāua ‘o Kauka Noelani Arista

He Cheyenne, he Māori, he ‘Ōiwi, he ‘Alalā, a he ‘elua Hawai‘i i komo i ka Hale ‘Awekeke...

‘O ka ma‘a mau, pēlā e ho‘omaka ai he ho‘omāke‘aka ‘ino. ‘A‘ole na‘e he ho‘omāke‘aka iki. Eia ke kinohi o ka haku wale ‘ana aku o ka ‘ike mo‘omeheu a me ka mākau ‘enehana, e kōkua ai i ka ‘apo hou o ka ‘ōlelo ‘Ōiwi. ‘O kahi o ia ho‘omāke‘aka ‘ana aku nei, ‘o kahi o ka Hale ‘Awekeke, he hale ia mai nā makahiki o 1920 ma Kahala, ma Honolulu.

He hui pā lāhui ua hui lā i ho‘opuka mua ‘ia ma luna o nā ‘enekia, nā akeakamai, a me nā koa ‘ōlelo mai ‘ō a ‘ō o ka honua, a ua ‘ākoakoa iho nei i Hawai‘i a komo ihola nā lālā i ‘elua hālāwai moe kahi ‘ana ma Malaki a me Mei, 2019. Ua ho‘omaka ko mākou hui ma ka hālāwai ‘elua ma Mei ma ka nanea wale ‘ana nō ma nā koki o ka lumi ho‘okipa o ka Hale ‘Awekeke. Hāpai nā mea ho‘olauka‘i e hui ‘oko‘a ka po‘e no ka hiki ke kaulapa ka ma‘i‘o. Kapa kūikawā ‘ia ko mākou hui ‘o “Team Prototype” a ‘o ka po‘e o ka hui: ‘elua ‘enekia polokalamu (‘O Joel Davison, he Gadigal a he Dunghutti no Nūhōlani, lāua ‘o Michael Running Wolf, he Cheyenne ‘Ākau mai ‘Amelkia mai), a he kālai‘ikepili (‘O Caleb Moses, he Māori no Aotearoa), he manakia pāhana (‘o Caroline Running Wolf, he Crow from the USA), a he

kanaka mālama 'Ike Kanaka Maoli ('o Dr. Noelani Arista), a he hoa kūkā Hawai'i ('o Isaac 'ika'aka Nāhuewai). He hālāwai kāka'ikahi ia kime'ōlelo 'Ōiwi o nā koa a puni ka honua, no lākou nā mākau pohihihi loa a me ka 'ike mo'omeheu ma ka ho'okahi wale nō lumi!

Me ka ho'omana'o pū 'ana, no nā 'oihana hāiki a laulā loa kēia mau lālā pākahi o ke kime, e aho ke no'ono'o no ka mana'o o ia 'ōlelo 'o "indigenous."

I loko nō o ko ka hua'ōlelo 'o "indigenous" kumu 'ana ma ka 'ōlelo Lākina, he mea hou kona ho'ohana 'ia. Ua ho'ohana 'ia ia 'ōlelo 'o "indigenous peoples" ma ke 'ano he hua'ōlelo laulā e nā alaka'i 'Ōiwi kau'āina, e like me ka United Nations, me ke kū'ē pū i kona mana'o iho. He hō'ike ka ho'ohana 'ana i ua hua'ōlelo lā no ka pono o kahi hua'ōlelo 'oi aku o nā palena o ke kau'āina. He pili ia hua'ōlelo i 'oi aku o ka 370 miliona po'e 'ōiwi mai nā wahi a polikika like 'ole no lākou nā 'ano 'oko'a o ka mo'omeheu, no lākou pū nā pilina like ma waena o ka po'e 'Ōiwi a me nā kau'āina e kū nei 'ānō.¹ He mō'aukala like ko ka po'e 'Ōiwi i 'ō a 'ō o ka honua no ka ho'okolonaio hewa 'ia ma ka 'ōnaehana, "'o ke komo hewa, ka noho hewa, ka ho'okolonaio, a me ka ho'oka'awale 'ana i ke aupuni."² 'O kekahi like paha ka 'ane halapohe o ke kūlana o ka 'ōlelo. I loko nō o ka "hilimia i nā kolonaio o ka wā i hala a me ka wā e kū nei."³ Hiki i ka po'e 'ōiwi ke 'ano ho'omaopopo kekahi i kekahi ma ka wae'ano "'ōiwi," me nā hi'ohi'ona like ma waena me ka mana'o e 'oi aku ka wā e hiki maila.

Hāpai 'o Shawn Wilson (he Cree), 'o kekahi o ka 'ā'ume'ume o ka ho'oka'a'ike 'ana ma waena o nā mo'omeheu ka 'imi 'ana i kahi like⁴ –he hana ma'alaha a'e ke kūkā ma waena o ka po'e i like ka mo'omeheu, 'a'ole na'e no ka po'e "'oi aku ka lō'ihī ke kūkā ka po'e o kekahi mo'omeheu no ka pō'aiapili, ka mō'aukala, a mana'o 'i'o paha o ka mo'olelo, ma mua o ka ha'i wale 'ana aku nō i ka mo'olelo."⁵ Pōmaika'i nō na'e mākou ma kahi like mai kinohi o ka launa 'ana ma ka hale, a nohie ihola ka ho'oka'a'ike me ka laulima pū.

Ma ke 'ano he po'e 'Ōiwi mai nā kau'āina Anglo 'o 'CANZUS' (Canada, Australia, New Zealand, US), he like loa nā mea i make'e 'ia e mākou. Ma kona puke *Research is Ceremony*, 'ōlelo 'o Wilson "'o Cora Weber-Pillwax ka mea nāna ka 'ōlelo "he pono ke kanaka noi'i e ho'omaopopo no nā R'ekolu, 'o ka Respect, Reciprocity a me ka Relationality, ma ke 'ano he kia ma ka noi'i 'ana." Wehewehe hou aku 'o Evelyn, 'oi aku ka hō'ihī ma luna o ka mahalo a me ke noi 'olu'olu, a 'oi aku ka

¹ Factsheet: Who are Indigenous peoples?, (May 12, 2006), *United Nations Permanent Forum on Indigenous Issues*, <un.org/esa/socdev/unpfii/documents/5session_factsheet1.pdf>.

² "invasion, occupation, imposed cultural change, and political marginalization," Niezen, R. (2003) *The origins of indigenism: Human rights and the politics of identity*. Berkeley, CA: University of California Press, p. 93.

³ "Marked by past and present colonialisms." de la Cadena, M. and Starn, O. (2007), *Indigenous Experience Today*. Oxford, UK: Berg Publishers, p. 3

⁴ Wilson, S. (2012), *Research is ceremony: Indigenous research methods*. Winnipeg, Manitoba: Fernwood Publishing, p. 6.

⁵ "speaking with people from another culture it often takes longer to explain the context, background or meaning of a story than it does to actually tell the story." *Ibid.*, p. 7.

“reciprocity” ma luna o ka makana wale ‘ana aku.”⁶ ‘O kahi mea hou aku e no‘ono‘o ‘ia, ‘o ka pili: ke ki‘ina hana, ka lolina, a me ka pahuhopu e pili pū ana i ke kaiāulu a me ka pō‘aiapili. Pono ka noi‘i a me nā pāhana he ‘ano hana pū me ke kaiāulu.

‘O kahi mea hou aku, kahi e ka‘ana ‘ia ai kēia mau make‘e a ke kime holo‘oko‘a e pūlama ai, a pēlā nō ka makakau ‘ana i ke ko‘iko‘i o ka ho‘ōla ‘ōlelo. Wahi a ka United Nations, o

“ka ‘ōlelo he nui ma kahi o ka 7 kaukani, ‘ōlelo ‘ia ka hapanui e ka po‘e ‘ōiwi, no lākou ka hapanui o ka huina honua. (...) A no nā ‘ōnaehana ‘ike a mo‘omeheu i hui pū ‘ia e kēia mau ‘ōlelo kūloko ma nā makahiki he mau kaukani i hala iho nei, he momi mo‘omeheu maoli nō ke nalowale ia mau ‘ōlelo. E nele auane‘i nā ‘ano like ‘ole o ka honua, ma ke kālaikaiaola, ka ho‘okele waiwai, a me nā ‘ano mo‘omeheu like ‘ole.⁷ I loko nō na‘e o ko lākou kūlana ko‘iko‘i, ‘o ia ‘ane halapohe nei nō ia o ka ‘ōlelo o ka honua, a he pono ka hopohopo.⁸

Me ka ho‘omana‘o pū i kēia, ua kauoha ‘ia aku nei, ‘o ka makahiki 2019 ka Makahiki o ka ‘Ōlelo ‘Ōiwi⁹ i mea:

- “e kia ai ka honua ma luna o ke kūlana ‘ane halapohe o ka ‘ōlelo ‘Ōiwi,”
- “e ho‘omaopopo ai “ke ko‘iko‘i no ka mauō, ka ho‘oku‘ikahi, ka lula kūpono a me ke kūkulu i ka maluhia,”
- “e paipai ai i ke ko‘iko‘i ‘o ka mālama, ka ho‘ōla, a me ka ho‘olaha aku iā lākou.”¹⁰

‘A‘ole he pono ke kauoha kūhelu o ka United Nations e maopopo ai i ka po‘e ‘Ōiwi ka ‘ane halapohe

⁶ “Cora Weber-Pillwax, who says, “A researcher must make sure that the three R’s, Respect, Reciprocity and Relationality, are guiding the research.” Evelyn explains, Respect is more than just saying please and thank you, and reciprocity is more than giving a gift.” Ibid., p. 58.

⁷ “the almost 7,000 existing languages, the majority have been created and are spoken by indigenous peoples who represent the greater part of the world’s cultural diversity. (...) Given the complex systems of knowledge and culture developed and accumulated by these local languages over thousands of years, their disappearance would amount to losing a kind of cultural treasure. It would deprive us of the rich diversity they add to our world and the ecological, economic and sociocultural contribution they make. The role of the language, (2019), United Nations Permanent Forum on Indigenous Issues, <en.iyil2019.org/role-of-language>.

⁸ But despite their immense value, languages around the world continue to disappear at an alarming rate.” Media, (2019), *United Nations Permanent Forum on Indigenous Issues*, 2019 <en.iyil2019.org/media>.

⁹ On December 18, 2019 the United Nation has declared an International Decade of Indigenous Languages to begin in 2022.

¹⁰ “focus global attention on the critical risks confronting Indigenous languages,” recognize “their significance for sustainable development, reconciliation, good governance and peacebuilding,” “encourage urgent action to preserve, revitalize and promote them.” Home - International Year of Indigenous Languages, (2019), *United Nations Permanent Forum on Indigenous Issues* <en.iyil2019.org>.

¹¹ Home - International Year of Indigenous Languages, (2019), United Nations Permanent Forum on Indigenous Issues <en.iyil2019.org>.

o ka 40 o ka 'ōlelo honua.¹¹ Kāka'ikahi, inā loa'a, nā kaiāulu i 'alo i ka 'ā'ume'ume o ka ho'okolonaio a pāpā 'ia o ka 'ōlelo makuahine, a pēlā nō nā lāhui o ke Kime Prototype. Ua hāmau mākou ma ka ho'omaopopo 'ana i kahi kūlana like loa o mākou. He mau koa nā lālā 'eono no ka 'ōlelo 'Ōiwi, a lauaki ko kēlā a me kēia mākau ma nā lāhui pono'i e kāko'o i ka ho'ōla 'ōlelo 'Ōiwi 'ana.

'A'ole i li'uli'u ka manawa pōkole ma hope o ka ho'olauna 'ana iā mākou iho. 'O ke akāka akula nō ia o ke kuleana 'o ke kūkulu 'ana he mea au hou. Ua ho'oholo mākou e ho'ohana 'ia kēia pule he "hackathon," a kūkulu a'e he W'IH me ka ho'ohana pū 'ia o ke 'Ka'ina Hana 'Ōiwi.' Me ka hō'ili'ili 'ia o kēia mau pepa, lana ko mākou mana'o e hō'ike 'ia aku kā mākou hana pono'i a e hō'ike 'ia aku ho'i ka 'ōnaehana ma waena o ko mākou mau make'e pono'i.

Ma hope iho nei o ka puapua'imana'o 'ana o mākou, ua ho'oholo 'ia he mea pono ho'ōla 'ōlelo 'Ōiwi kā mākou e kūkulu ai. Ua 'ae like mākou 'eono, i mea e kō ai ke koina o ka *Relevance*, 'o ke kahua ana o ko mākou hālāwai ka ho'ōla 'ōlelo 'ana— he keu pono no ko mākou mau kaiāulu pono'i a pēlā nō ka po'e 'Ōiwi ma ka laulā. Ma ka no'ono'o 'ana no ke kūlana o nā 'ōlelo 'Ōiwi, mana'o 'i'o mākou no ka 'enehana hou loa e like me ka Waihona 'Ike Hakuhi, ua hiki ke 'oi aku ka ho'ōla 'ōlelo 'Ōiwi 'ana. E like me kā Kauka Arista ma kāna paukū *Indigenizing AI*: "E ho'omaka ke ki'ina hana 'ōiwi Hawai'i ma ke kahua 'o ka 'ōlelo, 'a'ole e pau ma laila."¹² I loko nō o ka no'ono'o 'ana o mākou no kekahi mau 'ōlelo, 'o ke Crow, Gadigal, a me ka Cheyenne 'Ākena nā mea kiko'i, ua koho 'ia iho nei ka 'ōlelo Hawai'i, 'o ia ka 'ōlelo a mākou e hāpai ai, ma muli o ka mālama 'ia o ko mākou mau hālāwai ma ka 'āina 'ōiwi o Hawai'i. He hō'ike i ka *Respect* a me ka *Reciprocity* i ko mākou mau mea ho'okipa.

'O kekahi hi'ohi'ona o ke kūkulu pilina 'ana me ko mākou mau mea ho'okipa Hawai'i, a pēlā nō ka ho'omaopopo 'ana no ka pili o kā mākou hana, ka hui pū 'ana me ko Hawai'i ma ka wā holo'oko'a o ke kūkulu 'ana. Ua hāpai like 'o Dr. Arist lāua 'o 'Ika'aka i ka mana'o mai kinohi a ma ka wā o ka pāhana, mai ke kupu 'ana a'e o ka mana'o a hiki loa i ka ho'okō. Hāpai a'e 'o Dr. Arista i kāna pepa, 'o ke kōā e kū nei ma waena o ka po'e, "a'oa'o 'ia ka po'e kūkulu 'enehana, 'a'ole na'e i a'oa'o 'ia no ka 'ike" a ua hiki ke ho'oulu 'ia ka pilina ma waena o ka po'e kūkulu, 'enekia, a me ka po'e no lākou ka 'ike."¹³ Ua loa'a nō kā nā pono keu o ke kimi i 'ōiwi ka po'e a pau: ua launa wale nā lālā, a ua kāko'o pū 'ia kā lākou hana. 'A'ole i 'uha'uha ka manawa ma ka wala'au 'ana no ka 'ōiwi a mau paha, 'o ke aloha wale 'ana aku nō o ke kime no nā like o ka hui.

Ma ke 'ano he mau po'e kūkulu 'Ōiwi me ka wali o ka 'enehana, ua maopopo ke kōā o ka 'ike, a he mahalo ho'i i ka hiki ke hana pū me Kauka Arista lāua 'o 'Ika'aka, na 'olua i lawe a hō'ike mai i ka 'ike 'ōlelo a pēlā nō ke kuana'ike mo'omeheu. Hiki i ka po'e no lākou ka 'ike ke ho'olako i ka pilina hohonu o

¹² "A Hawaiian Indigenous methodology should begin, not end, with a foundation in language." Arista, N. (2020). *Indigenizing AI: The overlooked importance of Hawaiian orality in print*, this publication.

¹³ "developers who have been trained to code, but not trained to know ('ike)" can be bridged by "cultivating good social relations between developers, engineers, and knowledge keepers."

ka mō'aukala 'ōlelo, me ka ho'olauna pū 'ana i nā hua'ōlelo i 'novel,' a me ka hō'ili'ili pū i ka 'ikepili hou, a me ka ho'olako 'ana i nā polokalamu e hō'ike ana no ka ho'ohana 'ōlelo 'Ōiwi i loko o nā kaiāulu 'ōlelo, a me ka ho'opili 'ana iā lākou i ke kahua o ka 'ike ku'una.

'Olu'olu 'o Dr. Arista lāua 'o 'Ika'aka i ka hana pū 'ana me ke kime 'Ōiwi no nā Ka'ina Hana 'Ōiwi, ua mālama lāua he mau hoa kūkā ma nā pāhana 'ē a'e i like. Ma ko lākou mau pāhana i 'ano like me kēia, he pinepine ke kuleana 'o ka "cultural consultant," he kuleana ia e hō'oia wale iho ana i ka pono o ka loina no ka ho'olilo 'ana i ka no'eau Hawai'i he kumu kū'ai. Ma ka 'ēko'a nō na'e, ua kālele ko mākou kime i ke ko'iko'i 'o ka hana pū 'ana i mea e piha ai ko mākou 'ike a mākau pono'i. Ua kūpono ko mākou hana pū 'ana a me ka ho'omaopopo pū 'ana i ko kēlā a me kēia mākau ikaika a ua mālama 'ia nō ka wā e wala'au 'ia ai nā pōpilikia me ka ho'ā'o 'ana i nā hopohopo o kēlā a me kēia ma ke 'ano he lawena kūpono a lawena hō'ihī paha.

'O ka hopena, i mea e hopu 'ia ai kā mākou pahuhopu 'o ka haku 'ana he mea pono 'ōlelo Hawai'i, ua pono nō ka ho'onoho maika'i 'ana i kā mākou polokolamu ma ka pō'aiapili ākea o ka 'ike a mo'olelo Hawai'i, a he hō'ike nō ia i ka pahuhopu Hawai'i o kēia mua aku. Ma mua o ka hiki ke haku 'ia kēia moemoeā 'North Star' o ka mea pono 'ōlelo Hawai'i e hiki maila, he pono ia no ka maopopo 'ana o ke kūlana o ka 'enehana a ma hea ana i 'elima a i ka 'ehiku makahiki mai kēia mua aku. Ua nānā mākou ma ke 'ano he kime i nā polokalamu a'o 'ōlelo e kū nei a pēlā nō kekahi mau 'enehana 'oia'i'o.¹⁴ No ka 'enehana au hou loa, ua ho'omoemoeā mākou i ka "'enehana 'Ōiwi maoli i waiwai'"¹⁵ me ka W'IH ma ke 'ano he ikū kau paha, he mahele 'ōlelo, a he waihona 'ike. Ua ho'omoemoeā mākou i ia hāme'a e hiki ai ke lu'u i loko o ka 'ōlelo. E like me kahi e ho'ohana 'ia ai, hō'ike 'ia ka 'ike kūpono ma ka pō'aiapili o ia 'āina kiko'i e kū ana ke kanaka ho'ohana. Ua kapa aku mākou i ia mea pono ho'ōla 'ōlelo Hawai'i W'IH, 'o Kuano'o. E like ho'i me kā Michael Running Wolf i 'ōlelo ai ma kāna paukū, 'o *Dreams of Kuano'o*, 'o ka 'enehana kahua e like me ke apo lohe 'oia'io hō'ākea, ka unuhi a ka mīkini, a me nā mea kāko'o ma o ka leo, i kēia mau lā – 'a'ole na'e no ka 'ōlelo 'Ōiwi.

Ma ka no'ono'o 'ana i ka palena pau he ho'okahi wale nō pule, ua 'ihī ka hana a ke kime holo'oko'a ma ka ho'opa'a 'ana i ka moemoeā 'ana a me ke ke'ehina mua: he polokalamu kelepona pa'a lima ana ia me kahi wehewehe i hiki ke 'ike maka 'ana a me ka ho'omaopopo ki'i.

'O ka hana mua ke kapa 'ana aku i ka polokalamu. Wehewehe piha 'ia ke kumu a me ke ala i ho'oholo ai mākou iā *Hua Ki'i*, no ke kāmua, a 'o *Kuano'o*, no ke kāmua hope e moemoeā ana, aia nō i ka mahele *Indigenizing AI: The Overlooked Importance of Hawaiian Orality in Print*.

Ua ho'omoe nā kūkākūkā hohonu 'ana me Isaac a me Dr. Arista i ke ala e ho'opō'aiapili 'ia ai kēia mau

¹⁴ 'Enehana Akakū = Virtual Reality, 'Enehana Akakū 'Oia'i'o = Augmented Reality

¹⁵ "Actual effective Indigenous edu-tech." Joel Davison during brainstorming session in May 2019, *Indigenous Protocol and Artificial Intelligence*, Workshop 2, May 26 - June 1, 2019.

'enehana i loko o ke kuana'ike Hawai'i kūpono o ke ka'ina hana 'Ōiwi a me ke ki'ina hana e ho'ohana 'ia. He hō'ike ka pāhana holo'oko'a, mai ka ho'oholo, i ke kūkulu, i ke pa'i wikiō 'ana i ka wikiō hō'ike maopopo,¹⁶ he hō'ike ho'i ia i ke ala o ka manakia, ka 'enekia, a me ka po'e nona ka 'ike e lauaki ai i ka hana ma nā mahele a pau.

'O kā mākou pāhana kāmua, hō'ike 'o Hua Ki'i i ka lauaki pū 'ana o ka po'e 'Ōiwi kūkupu, 'enekia, a me ka po'e no lākou ka 'ike e haku 'ia he 'ōnaehana ho'ōla 'ōlelo a ma nā nāki a wahi like 'ole e ho'ohana 'ia ai ka 'ōlelo.

E like me ka wikiwiki i ho'oholo ai mākou i ka mea pono ho'ōla 'ōlelo, ua ho'omahele aku nei mākou i nā kuleana o ke kime:

- No Joel Davison, he Gadigal a he 'enekia Dunghutti mai Sydney, Nūhōlani, nāna i haku i kahi e komo ai ka mea ho'ohana i ka polokalamu ma ka papa helu a me ke a'oa'o a Isaac 'Ika'aka Nāhuewai i haku ai me Dr. Arista.
- No Caleb Moses, he kanaka 'epekema 'ikepili Māori: ua hana kokoke me Dr. Arista me 'Ika'aka Nāhuewai e kūkulu 'ia ai ka 'ikoi o ka polokalamu –'o ka puke wehewehe a me ka unuhina mai ka Pelekānia aku i ka Hawai'i.
- Michael Running Wolf, he kanaka 'epekema lolouila: nāna i kūkulu i ka hapa hope, a me nā Mea Polokalamu e pili ai ko ke kuhikuhipu'uone 'ia o ka polokalamu i ka puke wehewehe, ka W'IH, a me ka hapa hope.
- No Noelani Arista, he kanaka nona ka 'ike Hawai'i a he Hope Polopeka Mō'aukala ma ke kulanui o Hawai'i ma Mānoa: nāna i kūkulu pū i ka puke wehewehe, nāna i alaka'i i ke kūkā no nā inoa a me ke ala e pa'a ai ka 'ike, ka 'ōlelo, a me ke kapa 'ana.
- No Isaac 'Ika'aka Nāhuewai, he kanaka maoli, he ho'okani pila, a he pukana lao'o, MA, ma ke kulanui o Hawai'i ma Hilo. Aia nō 'o Dr. Arista lāua 'o 'Ika'aka ma mua o ka hui. Na lāua i ho'omoemoeā i ka 'enehana Hawai'i hou me mākou me ka hō'oiā pū i ka pō'aiapili kūpono e kūkulu ai ka 'enehana no ke kaiāulu 'ōlelo Hawai'i me ka 'ihī'ihī. Na lāua i kūkulu i ka puke wehewehe no ke kāmua, he haku hapa mai nā puke wehewehe Hawai'i mai e kū nei a pēlā nō ka nīele 'ana i ka po'e 'ōlelo Hawai'i no ia mau hua'ōlelo.
- No Caroline Running Wolf, he manakia pāhana Crow: nāna i hō'oiā i ka ho'oka'a'ike kūpono 'ana ma waena o nā lālā, a pēlā i ke kahe maika'i 'ana i kēlā a me kēia hui ho'olauka'i 'ana a me ka ho'oholo 'ana. Kōkua pū aku nei 'o ia me ka iwi o ka polokalamu a me ke kuleana 'o ka ho'olauka'i 'ana o ke kime ma o ka manawa, ka moana, a pēia ke kūkulu 'ana i nā 'āpana o kēia pepa.

Pili loa aku nei kēlā a me kēia 'ao'ao mai mua a ma hope. Ua pono e lōkahi kā mākou ho'oholo 'ana no ke kuleana o kēlā a me kēia 'ao'ao a me ke ala e ho'oka'a'ike ai kekahi me kekahi. Ua ho'oholo like mākou i

¹⁶ Obx Labs, (2019) IP AI: Hua Ki'i (video), *Vimeo* <vimeo.com/348661163/d9bff8f5bf>.

ke ka'ina hana e 'āwili 'ia aku nō ka mana'o 'ōiwi a me nā koina 'enehana i loko o ka hana 'ana i mea e kō kūpono ai ke kūkulu 'ia o ke kāmua ma mua o ka pau 'ana o ko mākou wā pōkole kekahi me kekahi. 'A'ole i hiki ke ho'oholo ma ka pākahi, no ka pā 'ana o kēia a me kēia i nā kuleana, a ua ho'oholo koke 'ia nā mana'o me ka 'emo 'ole. Ua maopopo nō iā mākou nā pilikia e kupu ana i mua o kā mākou pāhana 'enehana 'Ōiwi, a ua pono e ho'oholo like i ke ala i mua i loko o kēia ao hemolele 'ole.

'O ka maika'i loa, ua haku a kūkulu mākou i kā mākou mea W'IH iho, me ka ho'ohana pū i ka mo'omeheu 'ōiwi a me ka 'ōlelo ma ka ho'ononiakahi i ka pō'aiapili. 'A'ole na'e i lawa ka manawa a me nā kumu waiwai i hiki ke haku 'ia kā mākou mea iho. A no laila i pono ai ka ho'oholo 'ana no ka mīkini 'ōlelo Pelekānia e kū nei he la'ana no ka iwi o kā mākou kāmua. Ua ho'ohana 'ia he awakea a 'auinalā e nānā ana i ua mau mea lā e kū nei a e ho'ohana 'ia nei e ke kaiāulu 'epekema W'IH, ma ka Pelekānia wale nō, i hiki i ka mīkini ke ho'omaopopo i nā 'ano mea ma'amau o ka nohona ma kekahi ala i nohie ka unuhi 'ana aku. He mau pilikia nō ko kēia a me kēia la'ana i loa'a, me nā hua'ōlelo 'ē i pono ai ka unuhi 'ia. I la'ana, no ke ki'i ho'omaopopo he 1000 hua'ōlelo e hiki ana ke ho'omaopopo i ke 'ano o ka 'ilio, 'a'ole i hiki ke pane nohie iā "‘ilio." 'A'ole i hiki ke unuhi i nā wae'anona like 'ole no kekahi kāmua miomio. I ke au o ka manawa kā mākou ho'oholo 'ana no ka mea nohie, me ka 90 wale nō hua'ōlelo. A pa'a kēia 'ao'ao ko'iko'i i ka ho'oholo 'ia, 'o ka lolo W'IH, ua ho'omāhele 'ia akula nō nā kuleana.

'A'ole i 'ē loa kā mākou ka'akālai. I loko o kā mākou ka'ina hana i hō'ea pākahi ai mākou i ke ka'akālai kūpono i pili iki i ka polokalamu ki'i a ka po'e Māori i kūkulu ai. 'O ke kūkulu mua 'ia o ka polokalamu "Kupu,"¹⁷ he hō'ōia nō ia i ka hiki ke hana 'ia ia 'ano polokalamu no nā kaiāulu 'Ōiwi o kēia wā.

Mai nā pā'ālua a me ke ana a'o mīkini a hiki i ka puke wehewehe, he pili nō kēia a me kēia pono hana i ka 'ōlelo māmalu 'o ka Pelekānia a pēlā nō e ho'okinona 'ia ai kēia a me kēia pono a'o 'ōlelo o ka mana'o Haole. 'O ka 'oia'i'o, a ma kēia pō'aiapili 'o kēia kāmua, e ho'ohana ana nō mākou i ka 'enehana Haole e kūkulu 'ia ai he pono hana 'Ōiwi me ka 'āwili pū 'ia o ke ki'ina hana Haole a me ka lōina 'Ōiwi.

Ua kaulana ko Audre Lorde 'ōlelo 'ana aku "‘A'ole ana e hiki i ka pono hana o ka haku ke wāwahi i ka hale o ka haku. He 'ae kū manawa nō na'e paha kona e lanakila ma kāna pā'ani iho, 'a'ole na'e e hiki ke ho'ololi maoli."¹⁸ He kia a alaka'i 'ana ko kēia 'ōlelo a Audre Lorde i ke kuana'ike kūpono me ka hō'ōia pū 'ana aku i nā hopena o ka hana 'ana me "nā pono hana a ka haku," a me ke kaupalena 'ana i ka 'enehana: he kuleana nō ho'i ko kākou i ka ho'okō i ka hana a nā kūpuna i waiho maila.

Ua kuano'o nō kā mākou kime i nā palena o ka hana pū wale 'ana nō i loko o ke kuana'ike kolonaio o ka haole, a ua kūkulu 'ia he kāmua me ka puke wehewehe e hō'ike 'oia'i'o ana i ka 'ōlelo o kēia au nei nō. Ma ke kūkulu 'ana he papa hua'ōlelo, ua pono pū e kūkulu 'ia he papa ki'i o nā ki'i kūpono, e la'a me ka pua 'ōiwi a mea kanu 'ōiwi paha, ua pono e hō'ike 'ia ma ke kuana'ike a ka po'e Hawai'i e

¹⁷ Kupu's software, featuring the Te Aka Māori Dictionary, can be found on their website, <kupu.co.nz>.

¹⁸ "For the master's tools will never dismantle the master's house. They may allow us temporarily to beat him at his own game, but they will never enable us to bring about genuine change." Lorde, A. (1984). The master's tools will never dismantle the master's house, in *Sister outsider: Essays and speeches*. Berkeley, CA: Crossing Press, p. 112.

moemoeā ana i kēia manawa ma ka pō'aiapili kūpono.

I loko nō o ke kōkua o nā puke wehewehe, he mau hemahema a ke'e ho'i paha nō ko lākou. He pōmaika'i a he pō'ino ka hanauna hou o nā puke wehewehe Hawai'i no ke akeakamai 'o Mary Kawena Pukui. He hō'ili'ili pa'u mau 'o Pukui i nā hua'ōlelo Hawai'i ma kona mau makahiki kanakā, he kuleana nō ia i hiki iā ia ke 'auamo ma hope o nā kekeka o kona ho'opa'a na'au 'ana i nā hua'ōlelo ma ka ho'olohe, ma ka ho'opuka, a me ka ho'omaopopo wale 'ana nō. He pa'akikī nō no ka po'e o kēia wā i hānai 'ia ma ka 'ōlelo Pelekānia, ka moemoea 'ana i kāna hana 'o ka hō'ili'ili 'ana i nā hua'ōlelo a pau no ka haku puke wehewehe ma ka 'ōlelo 'ōiwi. Ho'ono'ono'o 'ia ka luaahi o ke kolonaio i ke kuleana 'o ka ho'omaopopo 'ole 'ana i ka 'ōlelo, mo'omeheu, a me nā lōina 'ōiwi, 'oiai, noho kākou i ke ao o nā mo'omeheu aloha 'āina a ua ho'omaka wale aku nei nō lākou i ka ho'omaopopo 'ana i ke kuleana o ke aupuni i ka ho'oka'awale 'ana i ka 'Ōiwi mai ko lākou nohona a ho'omana aku, me ka wāwahi pū 'ana i ka pilina o ka po'e a me ka 'āina. No nā kenekūlia o nā polokalamu e kāohi ana, e ho'okolonaio ana, 'o ka hopena nō ke kūlana 'ōiwi e kū nei. 'A'ole hiki ke pani maika'i ka mauili no nā pilina a ua haku 'ia nō e ke kolonaio 'ana. Kohu mea, he hana nui pa'akikī ke a'o 'ana i ka 'ōlelo 'Ōiwi.

Ma kekahi piliolana o Mary Pukui i ho'opuka 'ole 'ia a i kākau 'ia e kona 'ohana, ua ho'opa'a lākou:

“Ma loko o kāna mau hana ho'ōla i ka mālama 'ana o ka mo'omeheu Hawai'i he nui wale, mana'o na'e 'o ia 'o kāna hana i ka puke wehewehe ka mea ko'iko'i mau no ka po'e 'ōpiopio o kēia mua aku, 'ōlelo pinepine 'o ia 'hiki i ke kanaka ke a'o i nā pilina'ōlelo a pau loa a mīkolohua wale aku nō nā hua'ōlelo Hawai'i i pa'a iā ia, inā na'e 'a'ole i pa'a ka 'ōlelo ho'onaninani a 'awa'awa paha, he a'o nō koe.’”¹⁹

No ka huliāmahi 'ana o nā nāki o ka hui, no'ono'o iho nei 'o Dr. Arista i ka hiki paha ke kūkulu ma luna o kā Mary Kawena Pukui a me ia mau akeakamai 'ōiwi a 'ōiwi 'ole paha o kona hanauna, e hana pū iho me ka iwi o kā ka Hawai'i lekikona: 'a'ole wale nō 'o ka ho'oponopono, ho'onui, a ho'ohonu hou aku i ka lekikona me ka 'ōlelo i lako e hō'ike 'ia ka 'ōlelo “sweet and sour,” he hāpai hou a'e na'e i ka 'ōnaehana o ke ki'ina hana no ke kuana'ike 'Ōiwi, he ala paha e hiki ai kākou i ka 'ike Waihona 'Ike Hakuhiā. No ka nui o ka 'ōlelo e mau nei ma ka 'ōlelo Hawai'i, ua hiki paha ke lu'u piha i ka ho'omau 'ana i ka noi'i nowelo a haku hou 'ia aku ka 'ike pili, ka hō'ili'ili, ho'ohui, a ho'olauka'i 'ana, he mau ala kona e hiki ai ke ho'ohana 'ia ma nā 'ano pā 'oihana like 'ole.

Eia na'e he pono i nā mea hou aku ma ke kūkulu 'ana i kēia 'ano, 'a'ole wale nō 'o ke kālai'ōlelo. He pilikia ko ka papa o ka 'ike me ka loa'a 'ole o ka pō'aiapili. Nui loa nā mākau o ke kānaka kūkulu, 'a'ole na'e i a'oa'o 'o'ole'a 'ia no ka haku 'ana i nā a'ololo i ka 'ike i pa'a ma ka lōina. Ua hiki i ka palapala

¹⁹ “Of all her work towards the preservation of Hawaiian culture she felt that her contribution to the dictionary would remain the most important for the young people of the future though she often said, ‘One may learn all the grammar possible today and have a very large vocabulary of Hawaiian words at his command, but if he fails to understand words sweetly spoken and sourly meant, he still had more to learn.’” Pukui, M.K., Bacon, G. and Bacon, P. N. (n.d.) *Untitled Biography of Mary Kawena Pukui*. Unpublished. Honolulu. Bacon Family.

Hawai'i ma ke 'ano he noi'ina ke ho'okino hou 'ia aku a ho'ohana 'ia ho'i i nā 'ano papahana ho'ōla 'ōiwi a 'ōiwi 'ole paha.

'A'ole wale nō i kupu he kāmua o ka puke wehewehe kaumaka ma kēia pule hana, ua huliāmahi pū nō na'e nā kānaka 'ōlelo 'Ōiwi. Lana ko mākou mana'o no kēia mua koke iho nō, 'o ka ho'omau nō ia o ko Huaki'i a me ko Kuano'o me ke pani li'ili'i pū 'ana i ke kuana'ike Haole i loko o nā puke wehewehe a mākou ma loko o ka 'ōlelo helu.

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5.2

Ka Ho‘ōiwi ‘ana i ka W‘IH: Ke Ko‘iko‘i Nānā Nui ‘Ole ‘Ia o ke Kākā‘ōlelo ma ka Palapala

Na Kauka Noelani Arista

Mali‘a, ‘a‘ohe lua o ka ulu e like ai me ko ka po‘e ‘Ōiwi ho‘ohiki ‘ia no ka ‘enehana a me ka W‘IH o ka wā e hiki mai ana. I loko nō o ka pa‘i a heluhelu ‘ana i lawe ‘ia maila i ko kākou mau kelekoli e ka po‘e kolonaio, mikionali a me ko kākou po‘e iho nō ho‘i, ‘a‘ole i like ka ka hi‘ohi‘ona o ka ‘enehana no kēia mua aku e like me kona ko‘iko‘i i kēia manawa.

I ka wā ma mua, ka wā ma hope: Ka Mō‘aukala a me Kēia Mua Aku

Nui ke kākau ‘ia ‘ana o ko ka po‘e kolonaio mana‘o no ka ‘Ōiwi a me ka pili i ka manawa— ua wae‘ano ‘ia ko kākou mau kūpuna i nā wahi a pau ma ke ‘ano he nalowale a make paha, pinepine ka no‘ono‘o ‘ia no ka na‘aupō o ka wā i hala, he aniani kū ho‘i e ana ai ka po‘e ‘Eulopa-‘Amelika no ke au o ko lākou po‘e, a ‘o ka po‘e ‘Ōiwi ke koena o ka wā i hala. Ua hiki i ka hi‘ohi‘ona “‘enehana” ke waiho aku i ka po‘e ‘Ōiwi ma waho o ko ka po‘e ‘ōiwi moemoeā ‘ana, ko ka po‘e mau hale kula, ko ka po‘e mau mea kūloko o a pēia aku ko ka po‘e loa‘a o ke kālā.

A 'oi ai, he mau 'enehana hou ke kākau a me ka pa'i i ho'olauna a mana'o 'ia i mea e hāpa'i a'e ai i ka po'e 'Ōiwi, 'a'ole i like ke 'ano iho o ka 'enehana a me ka W'IH. I la'ana, 'a'ohē polokalamu ho'ona'auao i koi 'ia e a'o ai ke keiki i ka helu lolouia, i ka ma'i'o o ka VR, AR, pā'ani wikiō, i ka moemoeā 'ana i ka wā e hiki maila no ka W'IH ma ko ke 'ano 'ōiwi ma'amau. I mea e e ho'oulu ai i ke ea 'ikepili, ma nā ala e wae'ano a ho'onohonoho ai ko kākou po'e i ka 'ike, a ma ka pō'aiapili Hawai'i nō ho'i, he ko'iko'i ka lu'u loa 'ana iho i ka 'ōlelo, ka mō'aukala, ka pilikana kanaka, a me ka 'ike ku'una, he hilimia nā mea a pau i ko ka po'e kolonaio. 'A'ole i pili ke ea 'ikepili ma kēia pō'aiapili i ka 'ao'ao kānāwai, pili nō ho'i i ka 'ike 'ia o ko kākou 'ike a me nā kumu waiwai, nā kāko'o o ke kahua kula a me ke kaiāulu, i mea e 'oi aku ai ka maopopo, ho'onohonoho, unuhi a haku 'ana mai ko kākou 'ike pono'i iho nō.

No ka Hawai'i, he waihona 'ike hakuhia ko ka waihona palapala kahiko. No ka waihona palapala, 'o ka 'oi ia o nā waihona o ka 'ōlelo 'ōiwi 'Amelika 'Ākau, a he waihona i makahi'o nui 'ole 'ia i piha me nā palapala, nā kumuwaiwai i haku 'ia ma ka wā i hānai 'ia ai ka 'ōlelo ma ka waha wale nō a laila i ho'opa'a maoli 'ia ma ke kākau a pa'i aku. Kū ka paila: 'o nā mele hou i haku 'ia aku nei, 'o ka pule me ke mele 'oe, 'o ka mo'omana'o 'oe, 'o ka nūpepa 'oe, 'o ke kūkala nūhou, 'o ka puke, 'o ka hana pono'i o ke aupuni 'oe. I loko nō o ka 'ane halapohe o ka 'ōlelo Hawai'i ma ka 'ōlelo kuluma o ka po'e, *ola māhuahua ma ka wai 'ele'ele*.

Ua lawe mai ke ka'ina hana kolonaio i loli ai ka 'ike ma nā kaiāulu 'Ōiwi, i nā ma'i i wāwahi iho nei i nā kino i ku'u ai ka 'ike mai ka hanauna mai a i kekahi aku, he mea ia i moku ai kekahi mau pilina o ke kanaka i ka 'āina a me ka 'ōlelo.

No ka Hawai'i, 'o ka 'ike, 'o ia ho'i ka hiki ke ho'omaopopo i ka 'ike, 'oi ai, 'o ia ka ho'opa'a 'ana ma nā kaiāulu, a ua hailona 'ia kēia 'ōnaehana ho'opa'a e ko ka po'e kolonaio ho'opau 'ana a ho'ohihi 'ana i ka po'e Hawai'i.²⁰ He pono ka 'i'imi 'ike 'ana e komo ai ke kanaka maoli i nā pilina 'olu'olu 'ole o ko mākou mau 'ke ku'una, me ka ho'omaopopo pū 'ana i ko mākou kūlana ma o ko mākou 'ike. 'O ka hopena 'ino loa nō paha o kā ka po'e kolonaio, 'o ia ho'i ka hiki 'ole ke pa'a ka 'ōlelo Hawai'i ma nā hale o ka 'ohana Hawai'i, ma ke kaiāulu, a 'o ka hopena ke kauka'i 'ana o ka 'ohana ma luna o nā kula ho'ona'auao Hawai'i, nā kula kaiapuni, nā kula ho'āmana Hawai'i, a pēia pū nā papa 'ōlelo Hawai'i ma ke kulanui. Eia ke ki'ina hana e wali ai ka 'ōlelo Hawai'i i ka Hawai'i. Ma ka 'ā'ume'ume 'o ke a'o 'ōlelo 'ana, he nīnau nui" he aha ka mea e wali ai ke kanaka, a pehea ka 'ānu'u o ka mea 'ōlelo Hawai'i e hō'ea ai, e 'ike ai ka Hawai'i i ke ki'ina hana, kuana'ike, a me ka 'ike ku'una o ka waihona no'ono'o.

He hiki paha i ka 'enehana ke kūka'i i kēia mau manawa lu'u 'ōlelo, e ho'ā a ho'oili ana i ke kanaka i kona 'ike kuuna ma o ka 'enehana e like me ka AR, VR a me ka pā'ani wikiō e hō'ike ana i ka no'ono'o 'ōiwi, ke ka'ina hana, a me ka no'ono'o. Inā makemake kākou e no'ono'o e like me kā nā

²⁰ See, Arista, N, Introduction, *The Kingdom and the Republic : Sovereign Hawai'i and the Early United States*, (Philadelphia: University of Pennsylvania Press, 2019).

kūpuna, inā makemake e no'ono'o pū me nā kūpuna ma o kā lākou mau 'ōlelo ma ka waha a me ke kākau, inā makemake e ho'ā hou i ia pilina, pehea e hō'ea ai i ia pae? Pehea e pili pū ai ka pilikia a ka po'e kolonaio i waiho maila i mana'o 'ia e wāwahi i ka pilina o ke kaiāulu a me ka 'uhane ma o ka 'ōlelo? 'A'ole wale nō 'o ke ala e ho'ihō'i 'ia ai 'o ka 'ōlelo, 'o ka no'ono'o iho nō na'e ma o ka lapa'au 'ana i ka pō'ino, ka pilina, ke aloha, a me ke ho'ōla i nā pili ma waena o nā hanauna a me nā kūpuna o mua a me kākou.

'Oiai, he ko'iko'i ka ha'awina 'o ka "ho'olohe a ho'opili mai" i ka 'ōlelo, ka 'ōnaehana ho'onohono 'ōlelo, a me ka ho'omaopopo 'ana i ka 'ike mai kekahi hanauna aku, he ko'iko'i ke nīnau aku: Pehea nā ala e hō'ike ai ka 'enehana i ka "'ike" o ka po'e 'Ōiwi ma kahi o ke pani 'ana i ko lākou kūlana a he pani pū anei ia i ka pilina ko'iko'i a kānaka i ho'oulu ai iā lākou pono'i iho nō no ko kākou mālama 'ike? E pani ana nō anei ka waihona'ike lolouila i ke akamai a me ke kupuna nāna ka 'ike, e like ho'i me ke pani 'ana i ka pilina? He nīnau ko'iko'i maoli nō kēia no ka po'e 'ōiwi. I ke au o ka ho'okolohua 'ana, āhea e mālama ai ka po'e mālama 'ike, ka mea nona ke kūkulu a hō'oloke'a 'ana i ka 'ike i mea e mālama 'ia ai me ka lawena kūpono i like me nā kenekūlia o nā hanauna o mua? He ko'iko'i nō paha ke a'oa'o 'ana o ia mau kānaka mālama 'ike i wali ka 'ōlelo a i wali nō ho'i ka 'epekema lolouila.

Pehea e kūpale ai nā kaiāulu 'Ōiwi (e kūlia ana i ko lākou ea 'ikepili iho) i nā 'oloke'a maoli 'ole o ka 'ike a me ka wehewehena o ko lākou 'ike a me ka 'ikepili, ma ka wā ho'okahi nō na'e o ka "helele'i" 'ana o ke a'o a me ka ho'opa'a na'au 'ana a 'ike, no lākou a no nā hanauna e hiki maila? Mana'o 'ia, mai ke kālaimana'o 'ana mai 'o ka "'ike pololei" o ke kuana'ike kolonaio a, ma kekahi 'ano, me ka ho'omauli ho'okahi nāna e ho'inana ka na'au o ka 'Ōiwi, mana'o 'ia ho'i ka 'imi 'ana e hauka'e 'ole a hemolele nā ala e na'auao ai.

'O ka wali 'enehana a me ka hiki ke ho'okikohō'e 'ia ka mo'olelo, mo'okalaleo, mele, a me nā mele oli, he waiho nō na'e paha i ke kuleana 'o ka haku 'ana i loko o ka lima o kēia mau kanaka kūkulu i ma'a i ka helu lolouila, 'a'ole na'e i ma'a i ka lula a me ka lula 'ana ma luna o ka 'ike ku'una o nā kaiāulu pono'i. Lana ka mana'o 'o ke kia ia ma luna o ke kino 'Ōiwi no ka mauili a me ka hō'ike, ma kahi o ka ho'okumu 'ia o ka mauili i ke akeakamai wale nō.²¹

'O ka hiki ke haku ma ka waha, ka palapala a e ho'olaha i ia mau mea ma ka 'ōlelo, ua ma'a ua 'ōnaehana lā i ka nui po'e Hawai'i a hiki mai i ke kenekūlia 20. 'A'ole nō nui ka po'e i a'o 'ia no ka lōina o ka 'ike 'ōiwi—ma ka 'aha, ka mo'okalaleo, a me ka lōina paha— 'a'ole nō i nui ka po'e me ke kēkelē i ka helu lolouila, ke kūkulu ma ke 'ano he kuhikuhi pu'uone, ke kūkulu AR, VR, a pā'ani wikiō paha e lu'u ai ke kanaka ma ke kūlele paho. A 'oiai, 'a'ohē ala ho'ona'auao e kū nei e pakanā ana me ka 'ike 'ōiwi a me ka helu lolouila, he nīnūnē ko'iko'i ka haku 'ia 'ana o ka ma'i'o kūpono no ke kaiāulu i loko o ka wā e

²¹ In Hawai'i the relationship between paradise and performance, the commodification of hula and how it has impacted or shaped Hawaiian identity is just beginning to be studied. See Imada, A., *Hula circuits through the American empire* (Durham: Duke University Press, 2012).

kū nei a me ko ka wā i hala me ka ho'oulu pū 'ana i ka pilina ma waena o ia po'e haku a me ka po'e 'ike. A, 'oiai, 'a'ohē ala ho'ona'auao 'ōiwi e kū nei i 'āwili pū 'ia me kēia 'ike o ka lolouila, he nīnūnē nō ka haku i ka ma'i'o kūpono loa e kū ana i ka makemake o nā kaiāulu o kēia wā a me ka wā i hala, a aia nō i loko o ka ho'oulu kūpono 'ia o nā pilina ma waena o ia po'e kūkulu, a me ka po'e 'ike 'ōiwi. Ma "*Making Kin with the Machines*," hāpai 'ia maila, 'o ka pilina ma waena o ke kanaka a me ka W'IH ke kinohi o ka ho'opa'a 'ana i ke kahua kūpono no ke ala e hō'ea ai ka 'ōiwi i ka W'IH.²² Eia nō na'e, he pono nō ko kākou paio 'ana no ka hō'ike kūpono no ka pilina o ko kākou mau kaiāulu pono'i, inā 'a'ole na ko kākou po'e e 'auamo i ko kākou "'a'ano" hilimia, he 'ā'ume'ume nō i ka 'ōlelo 'ē. Ua hiki nō anei i kēia mau ala i ka mauli ola ke māhuahua a'e, a inā nō, ma hea kahi e kōkua ai ka 'enehana me ke ālai 'ole 'ana? 'O ka ho'oulu 'ōlelo 'ana ma o kēia ala, he kākō'o i ke ke'ehina ma waena o ka 'ōlelo, ka palapala, a me ke kikoho'e. Hō'ike mai nō na'e ka 'enehana i ke a'o 'ōlelo hou 'ana ma o ka ma'i'o o ke kālai'ōlelo, he nele i ka wehewehena 'ole o ka mana'o me ka pō'aiapili 'ole, ma ka Hawai'i, o ke oli, ka pule, ka mo'oku'auhau, ke mele, a me ka mo'olelo.

Ka Hōnuanua Kaiapuni 'Ōiwi

He kumuhana hahana loa nei ke ka'ina hana 'ōiwi i ke ao ho'ona'auao o kēia lā. Ma ke 'ano he 'Ōiwi, he pinepine ka 'alo'ahia 'ana ma waena o ka nohona loilo o ka 'ōnaehana kolonaio a me ka pololei 'ana o ko kākou mau 'ike pono'i i kama'āina iā kākou i loko nō o ka holomua o ka 'ōnaehana kolonaio. 'O ka hana pa'akikī o ka ho'ohemonāio 'ana ke kia 'ana ma ko kākou mau kaiāulu e pili hou ai me nā kino 'ōiwi o ka 'ike ku'una i kū'oko'a a i pili auane'i me ke *kū'ē*.

Ma ka wā e moemoeā ana no kēia mua aku o ka W'IH, 'o ka ho'ohoa 'ana ho'i i ka mīkini, he pono pū nō ka pili hou 'ana i ko kākou mau kaiāulu a me nā 'ōnaehana o ka 'ike e nele ana i ka loa'a 'ole ma kekahi mau wahi. E ho'omaka ke ki'ina hana 'Ōiwi Hawai'i me ke kahua ma ka 'ōlelo Hawai'i, 'oiai, aia nō i ka Hawai'i ka waihona palapala nui loa o 'Amelika 'Ākau a me ko ka Pākīpika Polenekia. No ka nui o ia mau 'ikepili, 'o ka ho'ihō'i 'ia o ka 'ōlelo ma Hawai'i kekahi ke'ehina mua me ke kālele nui ma luna o ka *heluhelu* a me ka *mahele 'ōlelo*. E no'ono'o nō paha kākou no ka nui o ka 'ike no ka no'ono'o ma ka waihona palapala, a me ke ala ho'i e 'ike ai ka po'e i ke kuana'ike o ka honua a me ko lākou wahi pono'i o loko. Ua hiki ke 'apo hou 'ia ia kuana'ike ma o ka ho'opili hou 'ana i ia mau 'a'alolo ma loko o ka 'enekia pilina 'ana ma waena o kākou a me ko kākou mau kūpuna i waiho ihola i ka 'ike ma ka 'ōlelo i mea e kūkulu hou 'ia ai ka pilina.

'O ka hana mua i ka lu'u 'ōiwi 'ana ma o ka W'IH o Kuano'o, e pono ana nō ka po'e kūkulu e 'imi i ka wā i hala e wehe ākea ai i ko kākou mau mua aku: i ka wā ma mua, ka wā ma hope. I mea e haku 'ia ai kēia mau lu'u 'ōlelo 'ana, he pono e 'ae aku i ka wā a me nā kumu waiwai o ka po'e loa e mālama a noi'i hou aku

²² Jason Edward Lewis, Noelani Arista, Archer Pechawis, and Suzanne Kite, Making kin with the machines, *Journal of Design and Science* 3.5, July 16, 2018 <doi.org/10.21428/bfefd97b>.

ana i kēia mau waihona palapala a pēia pū i loko o nā kaiāulu, kahi ho'i e mau nei ka ili o ka 'ike.²³

Hua Ki'i

Ua haku ka hui kūkulu i pāhana e kūkulu 'ia ai kahi polokalamu e hiki ai ke hō'ike 'ia ka hua'ōlelo o kekahi ki'i i pa'i 'ia aku nei. No ka po'e ho'ohana, kama'āina nō paha ka nānā 'ana o ka polokalamu, a he nohie: e pa'i ki'i aku a e puka mai ana he hua'ōlelo Hawai'i no ia mea. I mea e holo ai ka polokalamu, ua hō'ili'ili māua 'o 'Ika'aka, he haumāna laeo'o, i puke wehewehe.

Ke Kaupalena o Nā Puke Wehewehe

'O ka 'ēko'a ia mai nā puke wehewehe 'ē a'e aku o nā puke wehewehe 'ōiwi, he mau puke wehewehe ko ka Hawai'i-Pelekānia.²⁴ Ua hiki nō ke noi'i 'ia nā puke wehewehe ma ka pūnaewe. Ma kahi o ka 'imi wale 'ana nō i nā puke wehewehe no kēia pāhana a mākou, ua 'imi pū māua i ka 'ike i pa'a iā māua pono'i. 'O ka pahuhopu o ka mō'aūkala, ka mo'omeheu, a me ka ho'ōla 'ōlelo, 'o ia ho'i ka ho'ononiakahi kūpono 'ana i nā kākā, ka po'e i pa'a nōki ka 'ike iā ia, ka po'e ho'i i mawae 'ole i nā wae'anona o ka po'e koloniao: pa'a pū ka mō'aūkala, ke kālāi'āina, ke kālāi'ōlelo, ka huli kanaka, ka mauiola, a pēlā wale aku.

No ka pāhana, ua pono e haku 'ia he puke wehewehe i pili kekahi mea i ka hua'ōlelo Hawai'i. Mālama 'ia kēia mau palapala ma ka waihona CSC. 'A'ole na'e i hiki i kēia mau palapala ke pili wale i kekahi puke wehewehe pūnaewe a pēlā aku. He pono ke komo ke kanaka i pa'a kūpono ka 'ike Hawai'i i mea e ho'olako 'ia ai ka pō'aipili kūpono a me ke kaona paha. Ua lako i kēia hui 'o māua 'o 'Ika'aka, ka 'ōnunu'u ki'eki'e o ka 'ōlelo Hawai'i, 'a'ole na'e i kaulapa ko māua 'ike ma muli: o ka 'oko'a o ka palauahae, ka mo'okū'auhau, ka hālau a me ke lulanui 'oko'a, a me ka 'oko'a o nā makahiki o māua. Ke hui pū na'e ko māua 'ike, ua lako ka pō'aipili a me ka wehewehena i pa'a 'ole ma ka hele wale 'ana aku nō i ka puke wehewehe.

Ma kekahi mau pō'aipili, ua pono ke hō'ili'ili hou aku i ka hua'ōlelo i loko o kā māua waihona, he ho'olako i ka 'ōlelo a ke kanaka 'ōlelo Hawai'i e ho'ohana ai. Ma luna ho'i o ia hō'ili'ili 'ana, ua 'imi māua i ka maopopo o ke kaona a pau o loko a me ke 'ano o ka 'ōlelo, me ka hō'ike pū i ka pilina o ka mana'o o ka mea nāna ka 'ōlelo, a pēia aku ho'i ka loli a liliuēwe paha o ka hua'ōlelo ma ka wā a me ka palauahae. Ua 'aha'ōlelo māua 'o 'Ika'aka i ka hua'ōlelo kūpono no ke ki'i a pēia ka 'oko'a, ua hāpai māua ma ke kūlele paho i nā hoa o laila i wahi hō'ōia. I la'ana, no ka hua'ōleo 'o "backpack", ua 'ike māua he mau hua'ōlelo. Ma Maui a me Hawai'i, ua ho'ohana 'ia kekahi hua'ōlelo i 'oko'a mai ko O'ahu a me Kāua'i mai. 'O kēia hō'ili'ili 'ana, he ho'omaka nō ia i ka haku hou 'ana he puke wehewehe e hō'ike kūpono mai ana i ka 'oko'a

²³ Consider that formal training in customary knowledge in Hawai'i, prior to the introduction of the palapala began in childhood and took place over the course of one's life into young-adulthood.

²⁴ To date however, there is no dictionary of the Hawaiian language that is written in Hawaiian. Dictionaries for the Hawaiian language are available in Hawaiian-English, and due to the cultural spread of hula into Japan and France, Hawaiian dictionaries have been compiled in Japanese and French.

ma ka palauahae o nā wahi ma ka wā 'ānō.

'O kekahi nīnau nui o ka'ū noi'i pono'i: ua hiki nō anei ke hō'ōiwi i ke a'o 'ōlelo 'ōiwi 'ana ma ka ho'ōla hou 'ana a'e i ka hua'ōlelo? 'A'ole wale nō he nīnau no ka po'e kahiko i hāpai 'ia e ke akeakamai ma ke kia niho palaoa, 'oiāi ma Hawai'i *he mana ko ka mea i 'ōlelo mua 'ia*, make'e nui loa 'ia ke ko'iko'i o ka 'ōlelo ma Hawai'i, *he ho'omaopopo ko ka 'ōlelo i ka mana o ka ho'oholo 'ana o nā kūpuna, a pēia ka mana o loko e ili ana i ka 'ōlelo.*²⁵ A no laila i mea e ho'ōla hou 'ia ai ka hua'ōlelo, ka no'eau, ka 'ōlelo 'ikioma, ka pule, ke oli, ka mo'olelo a me ka mō'aukala o nā kūpuna, he ala ia e mau ai ia mana. 'O ka ho'omaopopo a me ka 'ike, 'a'ole he mea no "faith" a i 'ole "belief," ma ka ho'oma'ama'a 'ana nō na'e a me ka honua 'ōlelo: e ho'olohe, e ho'opili mai, e ho'opa'a na'au.

'A'ole e hiki ke hō'oiā'i'o i kēia ka'ina hana ma ke kupuna Hawai'i no kekahi mau kumu. Ke emi ihola ka nui o nā kākā mānāleo, kuhi 'ia he 300 wale nō i koe.²⁶ Ho'ōla nā kula kaiāpuna a kaia'ōlelo a hiki loa aku i ka pae lae'ula i 'ole ka 'ōlelo Hawai'i e nalohia. 'Okō'a nō na'e ka 'ōlelo e puka ana ma kēia mau kula ma nā hanauna 'elua i hala akula mai ka 'ōlelo mānāleo nāna i a'o mai ia'ū he iwakālua makahiki aku nei, nui nā mea i hala.

Ua nele ka hapanui o ka Hawai'i i ka 'ike ku'una ma o ka ho'okolonaio 'ia: 'o ka emi nui o ka nui po'e ma o ka ma'i; 'o ka nele i ka 'āina 'ole ma o ka mana'o o ka 'ona 'ana i ka 'āina; 'o ka ho'okāhuli hewa 'ia o ke aupuni Hawai'i, a me ke kāohi 'ana i ka 'ōlelo Hawai'i. I loko nō o nā ala e ho'ōla 'ōlelo ana i haku 'ia me ka mana'o e mālama i ka 'ike ku'una ma ke kaiāulu, he pono nō ka noi'i a haku kūpono 'ana i ke ki'ina hana e haku 'ia ai ka 'ōnaehana 'oi aku o ka maika'i, a e hiki ana iā kākou ke ho'onohonoho kūpono aku i ka maopopo, a me ka 'ike. 'O nā kūpuna nāna ka 'ike, he mau kūpuna e ola nei a me nā kūpuna i hala, a na lākou i waihoa i ke kākau a me ka 'ōlelo e kama'ilio ai mākou. Ma ka noi'i a ho'ohana 'ana i ka 'ōlelo Hawai'i, ua hiki ke 'ike koke 'ia ka pilina o ka 'ike ku'una a me ke kūkulu mana'o 'ana ma ka laina. 'A'ohē wā e pau ai ka mana e ili ana i ka 'ōlelo a me ka palapala.

Ke komo iho nei kākou i ke au hou o ka ho'ōla 'ōlelo 'ana, kahi e hiki ai i ka 'enehana ke kōkua i ka 'Ōiwi ma ka ho'onohonoho 'ana i ka 'ikepili ma nā ala kūpuna e hiki ana ke 'ike maopopo a kūkulu hou aku i ka 'ōnaehana o ka 'ike. He ala kēia ka'ina hana e hiki ai ia kākou ke 'ike a no'ono'o iā kākou iho me ka pilina i ka wā i hala i mea e hāpai 'ia ai ko kēia mua aku me ka maika'i.²⁷ Aia nō a hiki iā kākou ke ho'okō i ke ea 'ikepili, a laila e 'oi aku ka ho'olako 'ia o ka 'ike e hāpai a ho'okō i nā hā'ina a me nā ala i nā nīnau pākanaka.

²⁵ Memory has been bolstered doubly in Hawai'i by print and textual sources where the imprint of speech has also been recorded to a high degree.

²⁶ 'Ōlelo Hawai'i, *Endangered Languages Project*, <endangeredlanguages.com/lang/125>.

²⁷ Language revitalization is a term which includes many different approaches, which rely heavily on the contribution of linguists, and anthropologists. The methods I am putting forth have come from another space of disciplinarity entirely, one which cannot be accounted for or affirmed through a single disciplinary tract like Hawaiian studies, Political Science, or Hawaiian language.

Hua Ki'i : Ke Kapa Inoa 'Ana

He ko'iko'i ke kapa inoa 'ana i ko Hawai'i. Ma ke koho 'ana i ka inoa keiki, i ka pāhana, i ka inoa hale, a ma kēia pō'aiapili o ka lako polokalamu, no'ono'o ke akeakamai i nā 'ao'ao like 'ole o ka inoa. No'ono'o ka po'e mālama 'ike i ka pili o ka hua'ōlelo a me ke kanaka, ma ka inoa, i mea e pili ai ke keiki i ke kupuna, no ke 'ano wale nō? Pehea ka ha'awina o ka na'au makuahine laulau no ka inoa keiki? He pili ka inoa i kekahi hanana ko'iko'i? Ma hope o ka pua'i 'ana, kapa 'ia ka inoa ma ka ikaika, ke akamai, ka no'eau, a me ka mana'olana i ka ulu. Wahi a ke akeakamai ma ka Hawai'i a me ka 'ōlelo 'o Mary Kawena Pukui, "ma ka hi'ohi'ona pilikana i ka 'ohana, he u'i, he hiehie, he mana, he hiki i ka inoa ke kōkua i ke 'ano o ke keiki a pēia ka wānana 'ana i kona mua aku!"²⁸

Ma ke kapa inoa 'ana no ka 'ike a me ka pā o ka na'aau, he 'ano 'ē nō paha ke no'ono'o aku, keu ho'i ma ka honua i nui loa ka ho'oka'a'ike. No ka 'Ōiwi e ho'ōla ana i ke kaiāulu, he ko'iko'i ka pili o ka po'e, ka 'ōlelo, a me ka 'āina i mea e ola ai. 'O kēia polokalamu 'o Hua Ki'i i haku 'ia e ke kime pā'ōiwi o nā koa 'ōlelo, na 'Ika'aka i haku i ka inoa me ia mau pilina ma ka waihona no'ono'o. Ma ke kūkā 'ana ma waena o nā hoakime, ua hō'ea nō mākou i kēia inoa ma muli o ka wehewehe 'ana no ka polokalamu, kahi e a'o ai ka haumāna 'ōlelo Hawai'i, pēia pū ka po'e ma ka 'akahi akahi o ke a'o 'ana. He 'ōlelo 'o "hua" no ka "hua'ōlelo" he ki'i, he hua'ōlelo. He mana'o hou aku ko "hua" he mea e ulu ana ma ke kumu. He mana'o hou aku ko "ki'i" 'o ke ki'i a 'ohi 'ana paha. 'O ka mana'o o nā hua'ōlelo 'elua ka hāpai 'ana he ki'i ma ka 'ōlelo i pala a kūpono me ka mana'o e ki'i 'ia ka hua, a inā 'a'ole, he makehewa ka hua ma ka hā'ule a palahū 'ana iho.

E like loa me ke kaona ma ka Hawai'i, kūkulu 'ia nā mana'o i loko o ka inoa. 'O ka mua, he mea le'ale'a ia i ma'alahi i ka ho'omaopopo no ke keiki a me ka 'ohana. 'o ka lua, he hō'ike i ka mana'o e ho'ōla i ko mākou po'e me ka hua o ko lākou 'ōlelo, me ka mana'olana pū i ke ola o ka mana'o i ho'oulu 'ia (ma kēia kāmua pāhana) e a'a a ola nui ana nō. Ma ka le'ale'a ma kekahi pae, a me ke kaona ma kekahi, he kono i ka po'e e komo a lu'u piha mai i ka hana. Me ka ha'aha'a, he hiki i ka mana mua 'o Hua Ki'i ke 'ae i kekahi polokalamu nui hou aku ma ka wā e hiki maila.

²⁸ Mary Kawena Pukui, E.W. Haertig, and Catherine A. Lee, *Nānā i ke kumu (Look to the source)*, Vol. II (Honolulu: Hui Hanai, 2014), p. 290.

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5.3

Ke Ka'ina Hana Kūkulu no Hua Ki'i a me nā Ke'ehina aku

*Na Caroline lāua 'o Michael Running Wolf, Caleb Moses, a me Joel Davison
Na Isaac 'Ika'aka Nāhuewai nā ki'i*

Ma ke 'ano he kime, ua ho'omoemoeā ke Kime Kūkulu iā Hua Ki'i ma ke 'ano he polokalamu 'Ōiwi ho'omaopopo ki'i me ka 'ikepili pili honua. Hiki i ke kanaka ho'ohana Hua Ki'i ke pa'i ki'i aku he mea a a'o iho nei i ka hua'ōlelo no ia mea. E like me kahi o ke kanaka ho'ohana, pēlā nō ka hopena o ka hua'ōlelo a palauahae 'Ōiwi a Hua Ki'i e hāpai ai no ia wahi pono'i.

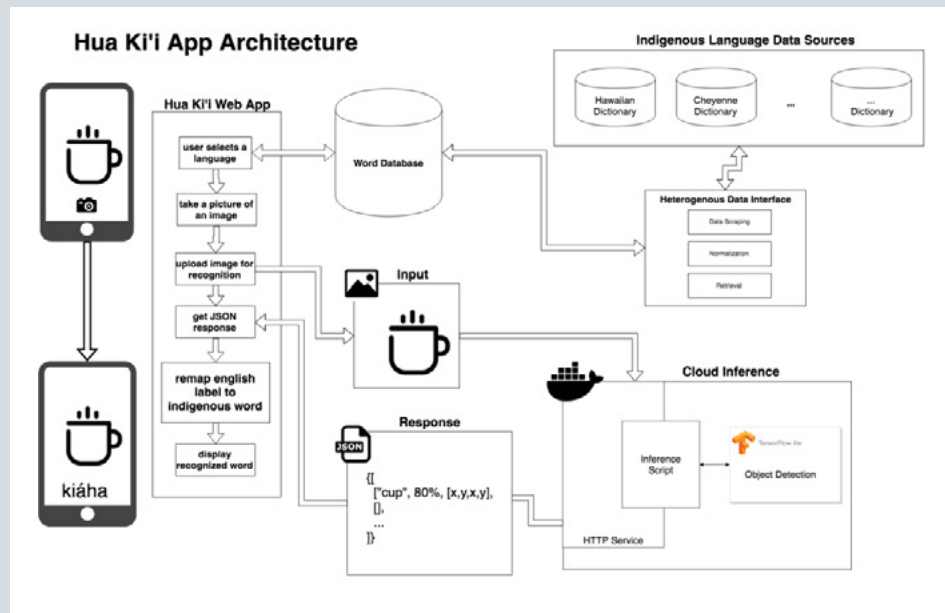


'ōlelo wehe: Ki'i na Isaac "Ika'aka" Nāhuewai, 2019.

Eia he ki'i o ka papakaumaka:

I mea e kūkulu 'ia ai 'o Hua Ki'i e like me ka mea i mana'o 'ia, ua māhele 'ia aku nei 'ekolu hana kiko'i no nā mākau ikaika o nā 'enekia:

1. No Joel ke kuleana 'o ka papa kaumaka e alaka'i ai i ke pa'i ki'i, 'o ka ho'ouka i mea na ka W'IH e kuhi, a 'o ka hō'ike mai i ka hopena.
2. No Michael ke kuleana 'o ka ho'omaopopo 'ana o ka W'IH i ke ki'i a 'ōnaehana kuhi paha e lawe 'ia ke ki'i a pane 'ia me ka 'ōlelo. I la'ana, 'o ka pane 'ana me "fire hydrant" ke loa ke ki'i o ka piula wai.
3. No Caleb ke kuleana 'o ka 1:1 lākiō unuhina o ka hopena W'IH ma ka Pelekānia i ka 'ōlelo 'Ōiwi, e kinohi ana me ka Hawai'i.



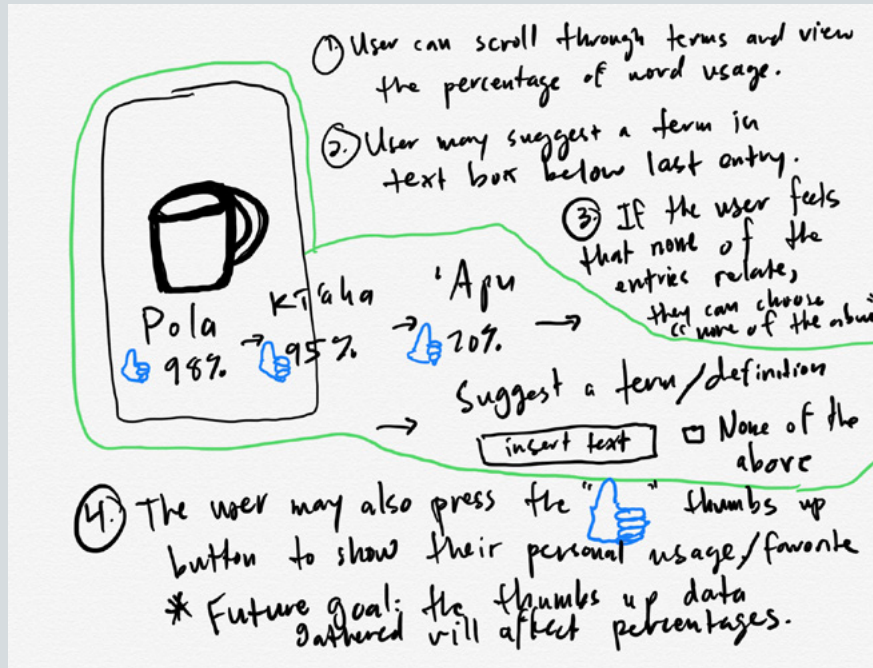
'ōlelo wehe: Na Michael Running Wolf ke ki'i, 2019.

I mea e ho'olauka'i a ho'ohāiki 'ia aku ai ka hana, he ki'i kai haku 'ia:

Hō'ike ke ki'i, mai ka hema i ka 'ākau, i ka papakaumaka, ka puke wehewehe a me nā unuhina, a me ka 'ōnaehana W'IH nona ke kuhina.

'O ke Kūkulu 'ana i ka Ho'ohana 'ia a me ka Papakaumaka o Hua Ki'i

Na Davison ka papakaumaka i kūkulu ma ka papa noi a 'Ika'aka lāua 'o Dr. Arista. Ma waho aku o ke kuleana 'ikoi 'o ke pa'i ki'i 'ana aku i kahi mea a ki'i aku i ka 'ōlelo 'Ōiwi, ma ka papa noi kekahi mau kuleana e like me ka papa kuhikuhi mai luna iho mai kekahi mau 'ōlelo 'Ōiwi, a pēlā nō ka hiki i ka mea ho'ohana ke hō'ike mana'o.



‘ōlelo wehe: Na Isaac ‘Ika‘aka Nāhūewai ke ki‘i, 2019.

He hō‘ike ka polokalamu e kū nei i ka hiki ke haku ‘ia. He polokalamu ho‘omau ‘o Hua Ki‘i i hiki i ka mea ho‘ohana ke ‘e‘e ma ka paena pūnaeweke me kekahi mea e ho‘omaopopo ‘ia ma ke ‘ano he hua‘ōlelo Hawai‘i, ma luna ho‘i o kona kelepona.

Eia ma lalo iho nei ka hō‘ike i ke ka‘ina hana o ka mea ho‘ohana a me ke ala e ‘e‘e ‘ia ai i loko o ka polokalamu a me ka paena pūnaeweke a pēlā nōma ka Android ‘ōiwi a iOS paha ma ka hale kū‘ai polokalamu.

P1 Ke Ka'ina Hana Polokalamu

- 1) ‘E‘e ka mea ho‘ohana ma luna o ka paena pūnaeweke ma kāna hāme‘a iho.
- 2) Hō‘ike ‘ia ka ‘ao‘ao mua i ka mea ho‘ohana me ka hiki ke nānā i ka papa kuhikuhi a koho i kāna ‘ōlelo; he hiki i ka papa kuhikuhi ke hō‘ike i kahi o ia ‘ōlelo a palauahae paha:
 - a) Koho ‘o ia i kona wahi ma ka palapala ‘āina
 - b) Hō‘ike ‘ia nā koho no kahi o ka ‘ōlelo o ia ‘āina
 - c) Hō‘ike ‘ia ka ‘ōlelo i koho ‘ia ma luna o ka papa kaumaka.
- 3) He ki‘iona ko ka ‘ao‘ao mua o kahi mīkini pa‘i ki‘i nāna e wehe i ka pahu ki‘i o ka hāme‘a
- 4) Pa‘i ki‘i ‘ia ka mea;
- 5) Aia nō a pa‘i ki‘i ‘ia, hō‘ike ‘ia mai ka papakaumaka me ka hāpai pū i ka hua‘ōlelo a me ka pākēneka o ka hua‘ōlelo; a‘ia‘i maila ia pākēneka

- 6) He koho ka lolole 'ana e hō'ike 'ia ai nā hua'ōlelo 'ē a'e i hiki paha, a pēlā nō i ko lākou pākēneka
- 7) Ua hiki i ka mea ho'ohana ke hō'ike mana'o kākō'o no ka hua'ōlelo; hō'ili'ili 'ia ia mau mana'o a pā ka W'IH i ia 'ikepili pākēneka no nā hopena o nā hua'ōlelo e hiki maila;
- 8) Ua hiki pū i ka mea ho'ohana ke hō'ike mana'o a hāpai 'ia a'e paha he hua'ōlelo ma ka hopena o ka lololele 'ana, i mea e no'ono'o 'ia ai; he 'elua pahu kolekole a me ka hiki ke hō'ike 'ia ka 'ikepili pono'i o ka mea ho'ohana:
 - a) Hāpai he hua: _____
 - b) Wehewehena (he koho): _____
I la'ana: "palauahae o ka xyz" or
"pili wale nō ka 'apu i ka niu i 'oki 'ia a hapalua."
 - c) Ka 'Ikepili Ponoī (he koho): Inoa piha; helu lekauila

He 'ōlelo pālua ana ka 'hāpai mana'o' 'ana ma nā 'ōlelo 'Ōiwi a me ka 'ōlelo Pelekānia.

Nā Kaupalena a me ka Mana'o Hope

No ka palena 'o ka ho'okahi wale nō pule, 'a'ole i kō nā hana a pau i mana'o 'ia no ka mana kāmua.

E like me ka mea i ho'opuka mua 'ia, 'o kekahi ālaina ka nui o ka 'enehana, mai ka 'ōlelo helu kelepona, i ke a'o o ka mīkini, i nā puke wehewehe; he pili nā mea a pau i ka 'ōlelo nui 'o ka Pelekānia. Me ka loa'a 'ole o nā kumu waiwai i pono ai ke kūkulu a ho'oma'ama'a 'ana iho i kā lākou mau mea W'IH 'Ōiwi me ka haku pū i ka pō'aiapili, 'a'ole na'e i hiki ke alo a'o ke kūkulu 'ia o ka W'IH ma ka Pelekānia no ka Hawai'i. Eia na'e, ma ka ho'oholo 'ana i ka polokalamu i loa'a ka maopopo 'ana o ka maka iā ia, a pēlā nō ka ho'opili 'ana i ke ki'i no ka 'ōkuhi, ua hiki iā mākou ke ho'ohana 'ole aku i ka 'ōlelo Pelekānia no ka papakaumaka polokalamu. Ma muli o kēia, ua hiki ke 'oi aku ka lu'u i ka ho'ōla 'ōlelo 'ana me ka unuhi 'ole 'ana aku i ka Pelekānia. He pono nō kēia no ka ho'okā'oi i ka lu'u 'ōlelo 'ana ma ka 'ikoi o ka 'enehana.

No ka mana e hiki maila o ka polokalamu Huaki'i, 'a'ole e ho'opau 'ia ka ho'ohana Pelekānia ma ke 'ano he kahua, 'oiai no ka hapanui o ka 'enehana, he kahua nō ma ka 'ōlelo 'Eulopa. I mea e lanakila ai ma luna o kēia, he pono nō ka ho'opa'a 'ana i ka mana'o 'Ōiwi a me ka ho'oma'ama'a i loko o ka 'oloke'a o ko ka polokalamu kūkulu 'ana. Me ia mana'o, ua pi'i a'e ka hoihoi.

'O kekahi mahele o Hua Ki'i ka ho'ohāiki 'ana i ka W'IH e ho'ohana 'ia nā 'ōlelo like 'ole, a e ho'ololi i ka papakaumaka e hō'ike 'ia ka 'ōlelo pololei e 'ōlelo 'ia no kahi o ke kelepona ma ka honua. 'O ka moemoeā no'ono'o 'ole 'ia o ka Hua Ki'i ka papakaumaka e hiki ana i ka mea ho'ohana ke hō'ihī a hāpai i ka po'e e noho ana ma ka 'āina 'Ōiwi.

Ka Haku 'Ana he Puke Wehewehe no kekahi mau 'Ōlelo 'Ōiwi ma Hua Ki'i

'Oiai, ho'ohana 'ia ka 'enehana ho'omaopopo ki'i e Huaki'i, ua pono ka hō'ili'ili loa 'ana i nā 'ōlelo like 'ole e wehewehe ana i nā mea like 'ole ma nā 'ōlelo like 'ole. Na Moses i kūkulu i ka 'ikoi o ka 'enehana, e haku ana ho'i he puke wehewehe no nā 'ōlelo 'Ōiwi like 'ole. No ka mana kāmua, ua loa'a ka Hawai'i a me ka Cheyenne 'Ākau a hiki i kēia manawa.

Ka Wae'anona

'O ke kāmua wae'anona a mākou, 'o MobileNet,²⁹ ua a'oa'o 'ia ma ka 'ikepili COCO.³⁰ Ua hiki i kēia mana ke ho'omaopopo he 90 'ano, a no ka papa helu o nā 'ano, aia ma luna o kēia: `Example_Models/coco_ssd_mobilenet_v1_1.0_quant_2018_06_29/labelmap.txt`

'Ōlelo Hawai'i

No ka ho'ohana 'ia o ka 'Ōlelo Hawai'i he pahu ho'omaka, ua ho'ohana 'ia he mau 'ano o ka pūnaewe, 'o NLP a me ka mākau 'ōlelo Hawai'i i mea e haku 'ia ai he papa me nā wehewehena no ka palapala coconet.

Heluhelu pākākā kēia mana i ka 'ike o ka puke wehewehe Hawai'i ma `hilo.hawaii.edu/wehe` me nā hua'ōlelo o ka `labelmap.txt` file.

'O nā hua'ōlelo i loa'a 'ole ma ka puke wehewehe, na nā akeakamai 'ōlelo Hawai'i 'o Dr. Arista lāua 'o 'Ika'aka, na lāua nei ho'i i 'ae aku i nā hewa i pākākā 'ia ma ka 'ike unuhina. 'O ka hopena ma ka 'ikepili `data/olelo-hawaii.csv`, he papa o nā unuhina Hawai'i o ka papa mobilenet.

Ka 'Ōlelo Cheyenne

Maiā Michael Running Wolf ka puke 'ōlelo Cheyenne ma ke 'ano he faila json, he paena pūnaewe.³¹ Ua ho'olike 'ia ka faila me ke aulā'a ma waena o ka wehewehena puke wehewehe a me ka 'ōlelo o ka puke wehewehe a ua ho'ohana 'ia ma ka pū'olo spacy.³² Ua hiki ke haku 'ia he csv o nā mea mua 'elima e puka ana ma ke 'ano he unuhina kūpono no kēlā a me kēia hua'ōlelo i loko o ka pa'a mobilenet, a me ka mākaukau e nā'ana ke kanaka.

Ka Loa'a

Kūkulu 'ia kēia pāhana mai ke po'o a ka hi'u e ka "make and docker," he mau polokalamu manuahi ma nā 'ōnaehana *nix (e like me Linux a me Mac). Na ka "make" ka 'akomi, a na ka docker ke ki'i, a laila

²⁹ Andrew G. Howard, et. al. MobileNets: Efficient convolutional neural networks for mobile vision applications, April 17, 2017, <[arXiv:1704.04861](https://arxiv.org/abs/1704.04861)>.

³⁰ COCO: Common Objects in Context, <cocodataset.org>.

³¹ <`dictionary/data/raw/cheyenne_dictionary.json`>

³² <spacy.io>

ho'omaka ke "kolo" 'ana e hō'ili'ili 'ia ka 'ikepili o ka puke wehewehe.

A laila, inā ho'omaka iā "jupyter," puka mai ka jupyter lab ma localhost:8888, i hiki ke ho'omaka i ka puke kakaha ma ka papa puke kakaha.

Kau Palena o ka Loa'a a me ka Pahuhope

Ua hana pū nō mākou me nā akeakamai 'ōlelo Hawai'i i mea e unuhi 'ia ai ka papa o ke kanaiwa mea i hiki ke ho'omaopopo 'ia e ka helu lolouila wae'ano. Ua akāka ka hapanui o nā unuhina. I loko na'e o kekahi o nā hua'ōlelo, 'a'ohē ona unuhina Hawai'i, e like me ka hua'ōlelo 'ē e haku 'ia, e like me 'ski.'

Ua loa'a pū nō ho'i iā mākou nā hua'ōlelo i loa'a 'ole ka lōkahi o ka ho'ohana 'ana, e like me ka pāisi. Ua loa'a kēia mau pō'aiapili i ka nīele 'ana o mākou i ka po'e 'ōlelo Hawai'i ma ke kūlele paho i mea e koho paloka ka po'e 'ōlelo no ka mea kūpono. No ka lu'u lāli'i 'ana no kēia ka'ina hana, e nānā aku i kā Dr. Arista pepa.

Ua kūkulu 'ia nā hua'ōlelo i unuhi 'ia ma ke 'ano he faila kikoho'e nohīe, me ka hui pū 'ana o ka Pelekānia maoli. Ua hiki wale nō i ka mea wae'anona ke wae'ano i kekahi mau mea kiko'i (elm. Fire hydrant), a 'a'ole paha i pili loa ia mau hua'ōlelo i ka mo'omeheu o ka 'ōlelo. 'O ke keu o ka maika'i, ua hiki iā mākou ke ho'omākaukau i kā mākou mea wae'ano iho, ua pono na'e ke kūkulu 'ana he papa 'ikepili me nā ki'i pono'i; 'a'ole nō i loa'a iā mākou ia hiki. A no laila, ua pono mākou e ho'ohana i ka mea wae'ano Pelekānia, he mea i ho'omākaukau 'ia no ka ho'omaopopo 'ana i nā mea kama'āina i ka pō'aiapili Haole. 'O kekahi kia o kā mākou hana ka ho'omaopopo 'ana i nā hi'ohi'ona o nā mea noe'au a ko'iko'i paha o ka 'ōlelo i mana'o 'ia.

He pono ka 'ōnaehana i ke kaiāulu 'ōlelo me ka palapala maika'i 'ana i ka 'ōlelo me nā unuhina lāli'i a me nā akeakamai 'ōlelo i hiki ke hō'oia a ho'oponopono aku i ka 'ikepili unuhi. No kekahi ho'i o nā 'ōlelo 'Ōiwi, he 'ane halapohe a 'a'ole paha i loa'a ka puke wehewehe kūpono.

'O ka loa'a no nā kuleana kuhi honua o ka hopena o ka pāhana, ua hiki i ka mea ho'ohana ke kūkulu he makakau ma luna o ka/nā 'ōlelo 'Ōiwi i loko o ko kākou wahi pono'i. Ua hiki ke holo ma muli o ka ho'ononiakahi 'ana i ka GIS no ka palena o nā wahi i hiki iā Hua Ki'i ke kuhi i kahi pololei o ka 'ōlelo 'Ōiwi o ia wahi. Ua maopopo no kekahi mau wahi, 'a'ole i loa'a ka hiki ke ho'omaopopo ma ke 'ano o ka mīkini. No kekahi o nā wahi i kaulapa 'ia ka ho'ohana 'ana, ua hiki paha ke kū'ē 'ia e ka mea nona ka 'āina.

Papa Kūmole

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5.4

Akakū o Kuano‘o

Michael Running Wolf

I ka mokulele nō e holo ana i ke kahua, ‘a‘ohe pūnaewehe no ke ku‘u mokulele ‘ana. He apolohe cView ko ka ‘ōhua e pīpa ana ma ka ho‘olaha pū i ka mana‘o: “Welina mai i ke Aupuni Mō‘i Wahine o Hawai‘i! Welina mai ke Aupuni Pākīpika Pekelala iā ‘oukou pākahi me ka ho‘omana‘o pū i ka hoakipa, e mākaukau ka palapala ‘ae holo, ke kānāwai nō ho‘i no nā kau‘āina kiko‘i.”

‘Oli‘oli ke kūkā ‘ana o ka pa‘a ipo Kepanī kekahi me kekahi me ka leo nui i ka Ditto-Man, he ‘ōlelo hakuhi i haku‘ia ma ka pā‘ani W‘IH Chase-A-Monster, ho‘onāukiuki ‘ia he kanaka pā‘oihana kālepa i kona wā ho‘omaha. He 20 makahiki mai kona noho mua ‘ana ma ka pū‘alikoā ‘Amelika a nui kona hau‘oli i ka ho‘i ‘ana i kāna wahi punahele a me ke kahakai ‘o Waikīkī. ‘O ke ki‘i ‘ana i ka palapala ‘ae holo e ka Na‘i ‘Ole, e ka ‘Amelika, he pono nō ka ho‘onāukiuki ‘ia, ‘o Hawai‘i nō ho‘i. ‘A‘ole na‘e he koina ka ‘enehana cView. Kōkua akula kāna mo‘opuna ‘o Sarah, he 11 ona makahiki, i ke kū‘ai i ia ‘enehana. Hō‘alo‘ao piha ‘o ia i nā hāme‘a ‘enehana hou, a me ka huli kua ‘ana i ko Sarah kū‘ē, ua ho‘ohana iho nei ‘o ia i ke kakalina i ka mikini ‘oki mau‘u i loko nō o ka ‘auhau kalepona a ua pono e

kū‘ai i ke kakalina Kanakā.

Ma ka hō‘ea ‘ana o ka mokulele i ke kahua, kānalua aku nei ‘o ia, a kōkī ‘ia akula ke apolohe cView me ka namunamu pū. ‘Akomi ka ho‘opiha ‘ana o ka Lātoma i ke aniani e piha ai i kona maka a ho‘opololei aku i ke akāka ‘ole o kona maka. Ko‘o kahi ‘āpana i ke kua o kona ihu.

‘Ōlelo lopaka ka ‘ōlelo i kikoho‘e ‘ia me ka hemahema o ke ki‘ina leo: *“Aloha, ‘o wau ‘o mPal a welina mai i ke Aupuni Mō‘ī Wahine o Hawai‘i! ‘Ehā āu leka i ‘ike ‘ole ‘ia maiā Sarah lāua ‘o...he koina ka nānā ‘ana i kēia ma muli o ke kānāwai 4.86.”* Pākikē kona maka a wa‘u aku i kona oho pōkole ‘āhinahina.

“Welina mai ke Aupuni Mō‘ī Wahine o Hawai‘i (‘o ke “Aupuni Mō‘ī” mai kēia mua aku), ‘ae mākou i nā hoa kipa a pau, a pēlā nō nā ‘oihana pū‘ali ‘ole e like me ka ‘ōlelo ma ka mahele 1.17 o ko ka U.N. mahele W‘IH. Ho‘omana‘o ke Aupuni iā ‘oe, aia nō kou palapala ‘ae komo Hawai‘i ma ka waihona a e ho‘okō ‘ia ana nō ke kānāwai. He pono ke Aupuni i kou cView me ke kākī o ka 0.0001 kālā Ethereum no kēlā a me kēia kekona ‘elima o ka PELEKĀNIA i ‘ōlelo ‘ia ma waho. Wahi a ka ‘aelike, he pono ka nānā ‘ana o ke Aupuni Mō‘ī i kou palapala ‘āina me kahi Noa ‘Ōlelo. He nīnau anei paha kāu?”

No‘ono‘o ‘o ia ma ka nānā ‘ana i ka palapala ‘āina o O‘ahu i noa ai ka ‘ōlelo Pelekānia me ka nānā pū i kona waihona kiko‘o a nīnau a‘ela, “He mau hale inu tiki ko Waikikī i noa ka ‘ōlelo?” Hemo ka ‘īpuka komo mokulele me ke kani.

“‘ae, he 10 hola ka lō‘ihi kakali. Mahalo i kou ho‘omanawanui. Ke ho‘oili iho nei au iā Kuano‘o ma kāu palapala ‘ae holo...”

“He aha lā?”

Me ka nānā ‘ole aku iā ia, ho‘omau ihola ka cView, *“‘A‘ole i mākaukau ‘o Kuano‘o, ke nānā ‘ia nei kou mō‘aukala kalawaia ma Newaka, ‘a‘ole ho‘i i piha kou mō‘aukala kāleka ‘ea...”*

“‘O ia kā, no ke aha?!” Ho‘ōho aku nei ‘o ia me ka ho‘omaopopo pū i kāna mau kikiki ho‘okū ka‘a i uku ‘ole ‘ia. Kokoke mai ‘o Ditto-Man ma ka ha‘i‘ōlelo ‘ana kekahi me kekahi, nā lima i loko o kahi ho‘āhu me ka ho‘olauka‘i pū i nā pāisi hā‘awe. Me ke kani ha‘aha‘a i ho‘omaka ai nā hoa kipa Kepanī ma ka ho‘okūkū Chase-A-Monster.

Me ke kani ‘olu‘olu i hū ai ka nalu, ho‘olauna maila he leo hou: “Aloha!” Maopopo i ke kanaka na‘auao, he leo wahine Hawai‘i ma ka Pelekānia. “‘O au ‘o Kuano‘o. He pono ka nānā ‘ana i kou mō‘aukala, ma muli o ka ha‘aha‘a o kou helu hoaloha he 3.4, a kupu mai kou inoa ma ka Interpol. Ki‘eki‘e ka pā ‘ana i kou ‘ana, a pi‘i a‘e ke kākī ‘ia o kou unuhi ‘ia i ka 0.002 kālā Ethereum.”

“‘A‘ole kaulike kēnā!”

“E hāpai ‘ia kou mana‘o i ka Visitors Information Agency. E maka‘ala na‘e no ke kākī ‘ia o ka 0.001 o ka

minuke ma luna o ke kākī unuhi. ‘Ōlelo Hawai‘i wale nō nā kānaka.”

Namunamu iho ‘o ia me ka hāmau, me ke kaulakō pū i kāna ‘eke huila ‘ehā ma hope mai o ka ho‘okūkū Chase-A-Monster ma ka lālai mokulele.

“He paipai kēia e komo koke i ka laina no kahi Noa ‘Ōlelo o Waikikī, ‘a‘ohe lawe o kāu kālā ‘Amelika e kū‘ai ai i nā kālā unuhi ma mua o ka ha‘alele o kou mokulele i kēia pule a‘e. ‘O ke kākī ma nā wahi Noa ‘Ōlelo he 0.05 kālā Etherium o ka lā.”

“He kaulike a he ‘aihue ho‘i kā ‘oukou e ka lopako.” Pi‘i ka ‘ena o kona maka. Me ke kāohi ‘ole, namunamu hou aku i kahi ka‘awale me ke alo i ka pa‘a Kepanī: “he wahine ‘aihue!” Ho‘omākaukau ‘o Kuano‘o me ka nānā ‘ana ona i kona wahi–hākilo nā ‘ōhua a pau me ka hāmau pū. ‘Ōlelo hāmau kekahi o nā hoa kipa Kepanī i kāna cView a puka a kani mai ka emoji kaumaha ma kona papa kaumaka.

Hau‘oli a‘e ka leo lopako i hāmau a hiki i kēia, ‘olelo ‘o mPal iā ia: “He 3.32 kāu helu Viadu! He pā paha o kou kākī hōkele.”

Hākilo ka hoa kipa i kēia.

Kīkahō ‘o Kuano‘o, “Ua mihi au ma kou ‘ao‘ao i kou mau hoa, inā iho kāu helu ma lalo o ka 3.3., e ho‘oha‘alele ‘ia ‘oe a e kākī ‘ia he 1 kālā ma luna o ke kākī mokulele.” Alia ‘o ia he 3 kekona, “Mahalo ‘ia kou mahalo a mihi ‘ana mai!”

Moni ‘o ia me ka ho‘omana‘o pū i kā Sarah kākō‘o ‘ana, kāhea he Ditto-man i nā hoa kipa Kepanī. ‘Ae lāua me ka ‘oli‘oli i ko lāua ho‘okūkū Catch-A-Monster.

Ua hiki iā ia ke lohe iā Kuano‘o, “ua lawe paha ka maika‘i. Ke ha‘alele i ka mokulele, na mPal e a‘o aku i ka mō‘aukala o Hawai‘i, he koina. E ho‘opa‘a maika‘i, he hailona ‘ia nō.”

‘Ae ‘o ia a hahai aku i ka Ditto-Man ma kona pi‘i ‘ana.

Me ke kāohi i ka niniu o kona po‘o, ‘auhele ‘o ia i ka moana Pākīpika ma ka 1000km o kēlā a me kēia hehina i kahi e ‘ohi ‘ia ai ke ‘eke. Kū kona meheu i ka papa moana iā mPal e a‘o mai ana no ke kālāi pele.

“‘Ano manakā kēia mahele, ‘a‘ohe a‘u nānā i kou hulikua ‘ana.” Hō‘ike mai ‘o Kuano‘o no ke kūlana o kona a‘alolo a me ka pi‘i ‘ānō o kona pana pu‘uwai. Mino iki aku ‘o ia a komo ‘o ia i ka mahele no Kīlauea a me ka hānau ‘ia o ka mokupuni o Hawai‘i, i ka ‘āhui Ditto-man e kā‘alo mai ana iā ia.

Ua nalowale nō paha kāna ‘eke a he lālani lō‘ihi ma ka hale inu ho‘okahi i noa ka ‘ōlelo ma ke kahua mokulele.

“...ma hope o nā kekeka o ke kū‘oko‘a o ka Hale Ali‘i, ua waiho ‘ia ‘o Hawai‘i ma lalo o ke Aupuni ‘Amelika.” Ho‘omau ‘o mPal i ka ha‘awina mō‘aukala iā ia e kū laina ana ma kahi kōkua.

“Ua ‘aihue ‘ia kā ho‘i kēia ‘āina!” Ho‘ōho mai ‘o Kuano'o. Hā‘ule ihola kāna ‘eke kālā me ia ho‘ōho ‘ana. Ua ma‘a kona pepeiao i ka leo manakā o ka mPal, me ka hopohopo o ka ho‘i ‘ana mai o Kuano'o.

“Ua maopopo paha iā ‘oe ke kāhāhā o kēia ‘ōlelo i ka hoa kipa ‘Amelika.”

“Ua kīkahō au i kēia mahele he 98% o ka manawa no nā makahiki 5 i hala a ‘a‘ohe namu o ka po‘e!”

“Ma muli paha o ka maka‘u iā ‘oe. Ha‘o au i ka mea kahiko.”

“O ka mPal 0.3? ‘a‘ole i ho‘ā‘o iki i ka ‘ōlelo ma waho o ka Pelekānia a li‘ili‘i ka ‘ōlelo Hawai‘i i maopopo.”

“He mau...kau palena ko ka mea kahiko.”

“A ki‘eki‘e ke kāki laikini. Mau nō ke kaupalena! Ma kahi o ka 2021 kōu ‘ōlelo a he pono nō nā mea a‘oa‘o hou.”

“‘A‘ole hiki i ka po‘e a pau ke kū‘ai i nā kānaka ‘epekema ‘ikepili Māori,” i pane akula ka mPal.

I kēia manawa, ua ma‘a iho nei ka hoa kipa i ko ke Kuano'o ho‘ololi ‘ana i ka palapala kūhelu o ka Hawaiian Board of Tourism Mandatory Tutorial v10.9. ‘Ū aku ‘o ia, i ka hakahaka ‘ana nō o kahi ‘ohi ‘eke.

“Ma hea lā au? He 137 makahiki ma mua o ka ho‘iho‘i ‘ia o ke Aupuni Mō‘ī, a ma kēia au hou...”

Ke Ala i ke Kuano'o ma o ka Hua Ki'i

Ma ke kulekele nā mea e pono ai ‘o Kuano'o, ‘a‘ole na‘e i hua a mana‘o ‘ia paha ka ‘enehana i pono ai. Male ‘o Kuano'o i ke akakū ‘oia‘i‘o, a me ka ho‘omaopopo kani leo (HKL), ke alukiko leo (AL), ka maopopo ‘ōlelo kuluma (M'ŌK), ka unuhi mīkini, a me ka W'IH kūkā. No ka hapanui o kēia mau ‘enehana e ola nei, ua loa‘a nō ka mīkini akakū ‘oia‘i‘o, ke kākō‘o o ka leo (he hui pū ‘ia o ka AL, ka M'ŌK, a me ka HKL), a me ka unuhi mīkini. ‘O ka W'IH kūkā wale nō ka mea koe, ‘o ka loa‘a na‘e o ka lopaka kōkua ke ke‘ehina mua. Eia na‘e, ‘a‘ole i hiki i ke kaiāulu kū‘ono‘ono ‘ole o ka nohona ke ‘apo no ka pākaukani o ka kālā ‘amelika a me nā hale e pono ai ka mālama ‘ana i kēia ‘enehana ho‘ōla ‘ōlelo. E like ho‘i me ka ulu o ka ‘enehana, pēlā ka wāwahi ‘ia o nā palena; ‘a‘ole na‘e e hiki iā kākou ke kali.

He ke‘ehi mua kēia mau polokalamu i like me Hua Ki'i no ke kaiāulu ‘Ōiwi Kau‘āina no ka hua ‘ana o Kuano'o. He ko‘iko‘i nō ko ke kaiāulu ‘Ōiwi o ka honua hā‘awi pio ‘ole ‘ana, he mea ho‘okele na‘e paha kēia no ka holomua o ka W'IH. Inā ‘a‘ole i pā ka liliuēwe iā kākou ka po‘e ‘Ōiwi, no kākou ka hopena ‘o ka lilo he pio a luaahi paha. He mea nohie a ko‘iko‘i na‘e ‘o Kuano'o.

He pa‘a hi‘ohi‘ona ha‘aha‘a ko Hua Ki'i, i ‘umi makahiki i hala iho nei i loa‘a ‘ole ka ‘enehana i nā ho‘okolohua waiwai ‘ana. Pehea ke ho‘omoeā he ‘umi makahiki mai kēia mua aku, e hiki ana i ko kākou mau kaiāulu ke kūkulu iā Kuano'o a e ho‘onoa no kākou. No ka ‘enehana e kū nei i kēia manawa, he hiki iā

kākou ke kahukahu i ke kūkulu 'ana o ka W'IH i pili loa i ko ka 'Ōiwi mana'o a lolina paha.

He paena pūnaewe 'enehana akakū 'oia'i'o no ke kumu ākea o ka ho'omaopopo 'ana a he 'oloke'a polokalamu ma'alaha ke ho'olō'ihī aku, 'o ka hakuaho'ou 'ana ma kona kino 'ōlelehu 'Ōiwi (ma ka laki nō ka ho'okō wale 'ana aku nō i kā ka Hawai'i ma ka wā o ka papa). Ua pono ke komo piha o ka na'au e 'ōiwi ai ka hopena o ka W'IH Pelekānia a a he unuhi pū i ka Hawai'i a me ka Cheyenne. Me ka pahuhopu o ka hō'ike 'ana i nā 'ōlelo 'Ōiwi like 'ole, ua kupu he mea hohoki a haku 'ia he papa kau maka e alo aku ai i ka Pelekānia. Ua haku 'ia 'o Hua Ki'i me ka mana'o e ho'omau nō kekahi mau 'ōlelo 'Ōiwi. He pahuhopu ka ho'inana 'ana i nā hi'ohi'ona pā mo'omeheu.

Me ke akahēle nō e hiki ai i ke kaiāulu 'ōiwi ke kūkulu i ko lākou leo W'IH iho, me nā polokalamu akakū 'oia'i'o e hiki ana ke ho'omaka i kēia mau pāpā'ōlelo W'IH..

Nā Ke'ehina Kahua i ke Kuano'o

He mea hakule'i 'epekema 'o Kuano'o, ua hiki na'e i ke kaiāulu 'Ōiwi ke kūkulu i kāna mea iho i kēia manawa. 'O ke ke'ehina mua ka hō'ili'ili i ka 'ikepili a wae kūpono.

He pono nō nā waihona 'ikepili i mea e kūkulu 'ia ai ka W'IH o kēia au no ka 'ōnaehana ho'omaopopo leo a ki'i (he 'ana ho'ohālike' ma ke au 'enehana). Kūkulu 'ia ia mau ana ho'ohālike me ka ho'ohana pū i kekahi 'ano a'o mīkini 'o ka 'ōnaehana a'a.³³ I mea ka 'ōnaehana a'a e like ka 'oloke'a o ka lolo kanaka ma o ke a'a kikoho'e, he mau mea 'ano nohīe ma ka makemakika ('a'ole i like iki ka mākau me ke a'a ola maoli.) Me ka ho'ohana 'ana i kēia mau a'a, ma kekahi pūnaewele makemakika, lilo ka helu kākomo he hopena. I la'ana, hiki i ke ana ho'ohālike ke ho'omaopopo i ke ki'i o ka paipū kinai ahi. Ua ho'ohana mākou he ana ākea, ua pono nō na'e ke kūkulu 'ia mai kinohi mai me ka hiki ke ho'omaopopo i ke ki'i paipū kinai ahi, 'a'ole paha. I mea e kūkulu 'ia ai ke ana W'IH, ua pono nō ka waihona nui o ka 'ikepili, me nā ki'i he mau haneli, me ka paipū a me ka 'ole. I mea e kūkulu 'ia ai ke ana i 'oi a'e kona ho'omaopopo 'ana ma waho o ka paipū kinai ahi, he pono he mau haneli ki'i o ka mea e ho'omaopopo 'ia. Ua hiki ke pākela ka nui o ia mau 'ikepili i pono ai. 'O ka hiki ke ho'omaopopo i ka paipū kinai ai ka ho'omaopopo ki'i 'ana. He mau 'ano ana ho'ohālike W'IH 'ē a'e kekahi.

He pili pū nō ka Ho'omaopopo Leo (HL) i kēia mau kaiāulu 'Ōiwi. I mea e kūkulu 'ia ai ka W'IH HL, he pono nā hola o ka leo ma kekahi hulu like loa (e like me ka MP3) a pēia pū me ka palapala leo 'ia ma ka pī'āpā o ka 'ōlelo. No nā kiko 'ikepili, he pono kahi 'ōlelo 'ana ma ka Hawai'i me ka palapala leo i pili me ka 'ōlelo "paipū kinai ahi." Inā ua nui nā hakuloli o kēia 'ōlelo pōkole ma ka waihona 'ikepili, ua hiki ke 'oi a'e ka ho'ololi 'ana i ka 'aukiō i ka palapala leo. I mea e ho'omaopopo nui a'e ai nā 'ōlelo Hawai'i pōkole, i ka 'ōlelo holo'oko'a paha, he pono nā 'aukiō he lehulehu nā hola, me nā 'ano 'ōlelo pōkole a hua'ōlelo like 'ole. I pāku'i, he kōkua ia waihona i ka maopopo 'ana o ka lauana i ka

³³ 'Ōnaehana a'a = Neural Networks

W‘IH ma ka Hawai‘i, he pono nō.

He kahua nō ia ho‘omaopopo leo a ki‘i ‘ana no Kuano‘o, ho‘omaka nō na‘e i ka hō‘ili‘ili a mo‘opa‘a ‘ana i ka ‘ikepili mo‘omeheu. He ko‘iko‘i kiko‘i ka hō‘ili‘ili i ka ‘ikepili ‘ōlelo ma muli o ka ‘anehalapohe. Ma ka pōmaika‘i na‘e, he waihona palapala nui loa ko kekahi mau kaiāulu no ka waihona leo o kā lākou ‘ōlelo i loa‘a ‘ole i kekahi kaiāulu. He kuleana nui ia hana no ke kaiāulu: ‘o ka hō‘ili‘ili i ka ‘aukiō ma‘ema‘e i palapala kūpono ‘ia. ‘O ke kūkulu ‘ana he ana ho‘ohālike, he kuleana pā makahiki e kūkulu ai, ua hiki nō na‘e ke ho‘okō ‘ia.

I mea e lawa ai ka mākau e kūkulu ‘ia he W‘IH ho‘omaopopo i ka paipū kinai ahi, he ho‘omaka wale nō kēia.

Ua hiki ke hopu ‘ia ‘o Kuano‘o!

SECTION 6

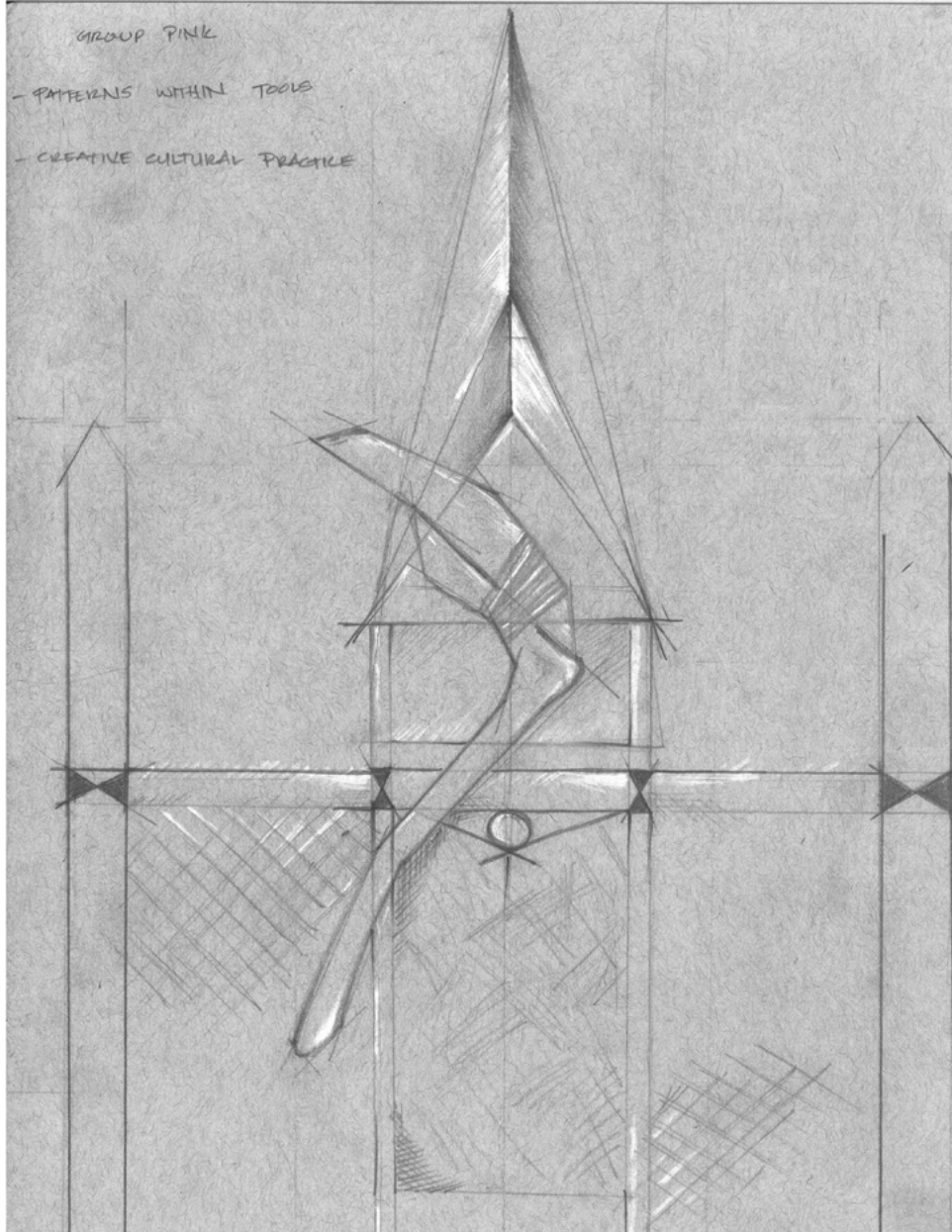
Appendices

6.1. Pre-Workshop Blog Posts & Workshop Interviews

6.2. Indigenous Protocol and AI Reading List

6.3. Biographies

6.4. Workshop Schedules



Wa'a Blueprint. Image by Kūpono Duncan, 2019.

6.1

Pre-Workshop Blog Posts & Workshop Interviews

In preparation for Workshop 1, we asked IP AI participants to write short, informal texts responding to the question: “What does the future look like for AI?” These texts were used to seed our conversations at the workshop and to give participants an opportunity to introduce themselves. Marlee Silva also conducted interviews during the workshop, which were then transcribed.

The texts provide insight into the rich set of concerns and perspectives that participants brought to the first workshop. One can see many of the concerns expressed here carried forward into the final collection of position papers, including the role and proper recuperation of traditional knowledge within technical systems; the need to protect traditional knowledge while also making (some of) it available to inform the design of these systems; the importance of language as both knowledge carrier and a primary site of computational processes; the centrality of territory in forming frameworks for understanding and communication; Indigenous communities’ historical and ongoing engagement with new technologies; contesting concepts of intelligence which ignore emotional and social engagements with the world; the intrinsically cultural nature of technological systems; the cultural biases that get built into these systems;

distinctions between AI by, for and with Indigenous communities; the dangers that AI and related technologies pose towards Indigenous communities who have experienced centuries of settler colonial violence aided and abetted by the latest technologies; and the need to think about AI systems through the lenses of our specific cultures.

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I ka wā ma mua, ka wā ma hope
The future is secured by the past

Dr. Noelani Arista

February 28, 2019

My interest in AI is a continuation of the central concern of my work: that ancestral knowledge, deeply and broadly conceived will be carried over into ‘the digital,’ continuing into the future as it has until now; what D. Fox Harrell states is a “cultural computing perspective,” which “entails performing research and practices that engage commonly excluded cultural values and activities to spur socially and critically valuable computational innovation,” is an exciting concept to me.¹ In my thinking in relation to his proposition, I see how Hawaiian cultural production is held multiply as exclusive as excluded, *at the same time*.

The challenge of my work has always been how to supply access to the enormity of Hawaiian knowledges and to place them back in the everyday lives of the lāhui (the people, the nation, the community). ‘The digital’ poses particular challenges to the continuance of Hawaiian knowledge, in the sense that its progress doesn’t leave room for the ravages which colonialism has wrought.²

As a historian I study the period in Hawaiian history where the technologies of the palapala (writing and print) were introduced. I have investigated how an oral/aural culture negotiated the simultaneity and transformation by, and into, the textual, how, in the 19th century kānaka maoli secured that knowledge through that transition, study which is vital to my various projects: to rebuild and understand the ontological, the epistemological, knowing and how we know, and the structures through which knowledge, story, practice, were passed on.

My research, translation and written work has focused on the training of Hawaiian intellectuals, how memories were carved (kālai ‘ia) and structured to receive large amounts of data and how that data was retrieved and mobilized for particular purposes, under a regime disciplined by kapu.³ I am studying

¹ D. Fox Harrell & Danielle Olson, “Cultural computing/Indigenous values,” *Indigenous AI*, June 6, 2019 <indigenous-ai.net/cultural-computing-indigenous-values> 167.

² In my praxis language looms large as that which constructs the affective, the mode through which feeling and connection to kūpuna flows. Colonial processes hastened the loss of language and customary practice in ways that have left people with symptoms of memory loss, the inability to communicate feeling through language, and since healing was dependent to some extent upon prayer, it has given us a more difficult pathway to healing and self expression.

³ ‘Data’ as in customary chant, prayer, law, history, story, some of which were quite lengthy, kept and passed on orally in a disciplined manner; and yet, these customary forms of knowledge cannot be reduced to an impersonal concept of data as unmediated by relationships. After the introduction of the printing press in 1820, many of these were re-recorded in writing and print. In addition to these new compositions moved from speech into text.

and helping to shape the transmediation of mo‘olelo (history, story, authoritative speech) from textual forms into digital formats that are methodologically resonant with customary modes of transmitting knowledge.⁴ I want to see these theories borne out, and I believe that Hawaiian knowledge, since we have the largest textual archive in Native North America and the Polynesian Pacific, can be an important site to contribute to what Harrell identifies in his work as an “integrative cultural system.” In thinking of these systems, I am also cognizant of the limits which we in islandic communities might impose on (over)development. Several blogs have highlighted the pitfalls of colonial and capitalist tendencies trending towards extraction and consumption, and so I approach the excesses of digital formats with my desire to do what my kūpuna did, to ward knowledge (kapu), protecting it from shallow projections and proliferations which ultimately may cause lasting damage to the foundations of ‘ike because of the rapidity with which incorrect, and inexact knowledge can be spread, supported, and ‘shared.’ Finally, I am interested in how digital formats can be Indigenized to facilitate our movement between the textual and the auditory, how to train these systems in a way that support our need to continue the passing on of our customary knowledges, histories and stories, through which the lāhui will continue to thrive.

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What does the future look like for AI? : Oshkaabewis or a Skynet

Scott Benesiinaabandan

March 11, 2019

I’ll answer this as it relates to my visual arts practice, involving the futurity of *Anishinabemowin* (the spoken Anishinabe language) and land/water protection and sovereignty.

Language

I think that in the near-future, AI can have an immediate impact on the preservation and promotion of endangered Indigenous languages. Already there are some projects making use of AI towards this effort. Deep learning programs designed at its root with a community’s ethical concerns forming the backbone

⁴ Mo‘olelo—succession of speech acts, history, and story.

of programs can both improve research and educational resources and opportunities. Languages that are agglutinative, such as Anishinabemowin, would certainly benefit from AI driven language tools, programs that could search and scan contemporary internet resources alongside historical text archives, could provide new and intelligent responsive learning apps, driven by the particular user and their specific community contexts (dialects).

New words for new worlds is a theme I have been exploring from Anishinabemowin perspective and could see how AI assistance could provide alternate visions of the future through exploration of new language(s).

Land

Other areas where the near-future AI could be employed is in Indigenous land/water-use and sovereignty protection. Ongoing analysis of land/water-use maps could provide deeper understanding of territorial uses and importantly how best to protect on-the-land resources, such as fish stocks, forests and forest management, endangered wildlife populations, critical watersheds and high risk habitations. While drone-AI is a scary proposition, as it is mostly driven by the military and commercial interests, the same deep learning programs, coupled with the automation aerial surveillance of drone monitoring of Indigenous territories could be used as a powerful tool for Indigenous sovereignty actions.

In the Anishinabe world-view, the most important person in a ceremonial context is called *askabewis*, or “helper.” With design care and Indigenous protocols at its core, AI could be an incredibly powerful skabe working on behalf and towards the future of our communities. Seeing the opportunity in deep learning programs, and treating them as *oshkaabewis* rather than *a skynet*, is key to guiding the ethical and productive use of future AI.

‘Umeke kā‘eo: (Re)coding AI to ‘Āina

Michelle Lee Brown

Illustrations by Kari Noe

February 26, 2019

‘Umeke—bowl, poi bowl, food bowl (from the calabash gourd)

‘Umeke kā‘eo: a well-filled bowl, a well-filled mind

‘Umeke pala ‘ole: calabash bowl without a dab [empty bowl, empty mind]

(wehewehe.org)

For the traditions I am steeped in, there is no future without the past orienting it, anchoring it, and

leading it. In the title to this post, I have woven in the ideas of physical vessels - bowls, containers for the tech we use, including our own ‘wetware’ - with more intangible ones: minds, interconnected consciousness, vast depths of knowledge. This transference from vessel to vessel, tangible to intangible, highlights the porous boundaries between them. The title also nods to other writing I am working on around seemingly disparate sources that outline survivance as a practice of cybernetic Indigenism¹: how Indigenous communities learn, adapt, and adjust as feedback indicates through fluid and ongoing protocols. These digital-physical, tangible-intangible materials have coded meanings within them that are routed and grounded in specific Indigenous systems, ready to (re)code and ground us.

For this introductory post, I am taking these ideas a step back—or more aptly reorienting myself to the past—by sowing seeds of something deceptively simple that will shape our futures and that of other beings and kin: the vessels we use to house these systems.

I come from salt water shorelines; we learned to navigate out, but I'm also drawn to brackish areas where fresh and salinated waters mix. Eels hatch, sharks hide, seaweed and shellfish grow rich and thick in the muck. "You find it with your nose" my Nana laughed and said. "That's where the good stuff is."

How to ensure these intelligences we help shape are well-filled ones, nourished from a mix of pasts and futures? How to take it from **AI** (as emblazoned in neon lights on Bourbon Street and some areas on the outskirts of Waikiki) to what Noelani Arista terms² ‘Āina—from illusions of fulfillment to being well-filled? These are central questions; to answer them we must use our noses to orient to the fertile (and sometimes fetid) murk of our histories. Perhaps more unpalatable: we must hear from and listen to nonhuman kin how we as human—even Indigenous ones—have taken too much (as Johnson Witehira shows in his video game *Māoriland Adventures*). Can we compost these unpleasant histories and grow? Who might help us listen and change? What kind of vessels can hold that, even when it stinks?

Stink. "No talk stink now."

When the poi bowl is uncovered, we are reminded to shift our thoughts, hold our sharp tongues.

The presence of it, in its calabash, is a reminder to come together, let go of tensions, of anger.

Stink. "It stinks, Mom."

My 3-year old daughter said this as we approached the shoreline, the wind bringing us rich Atlantic coast smells: kelp, quahog, cod and flounder that seagulls have found and picked clean. To me, it smells

¹ Archer Pechawis, (2014), Indigenism: Aboriginal World View as Global Protocol, in Loft, S. and Swanson, K. (Eds.) *Coded territories: Tracing Indigenous Pathways in New Media Art*, pp. 36-47. Calgary, Alberta, Canada: University of Calgary Press.

² “‘Āina is a play on the word ‘āina (Hawaiian land) and suggests we should treat these relations as we would all that nourishes and supports us.” In Jason Edward Lewis, Noelani Arista, Archer Pechawis, & Suzanne Kite (2018), *Making Kin with the Machines*, *Journal of Design and Science* 3.5 <doi.org/10.21428/bfafd97b>.

like life. Like home. I realized how much she had to learn, how much I needed to do to (re)code her senses when she said those words. We had been away too long.

Stink. "That STINKS!"

My comment to another adult (while our elementary-school age kids were nearby); I had just found out I'd need to replace my phone. I'd bought my first cellphone two years before, when the floodwaters rose in New Orleans after Katrina. I had not wanted one, but cell phone messages were the only way my kin could communicate with us for 8 harrowing days.

Now I would need a newer one to do the work I wanted to do.

But what could I do with this one, that carried messages of hope, calls for help and of rescue, shared our laughter and tears of relief?

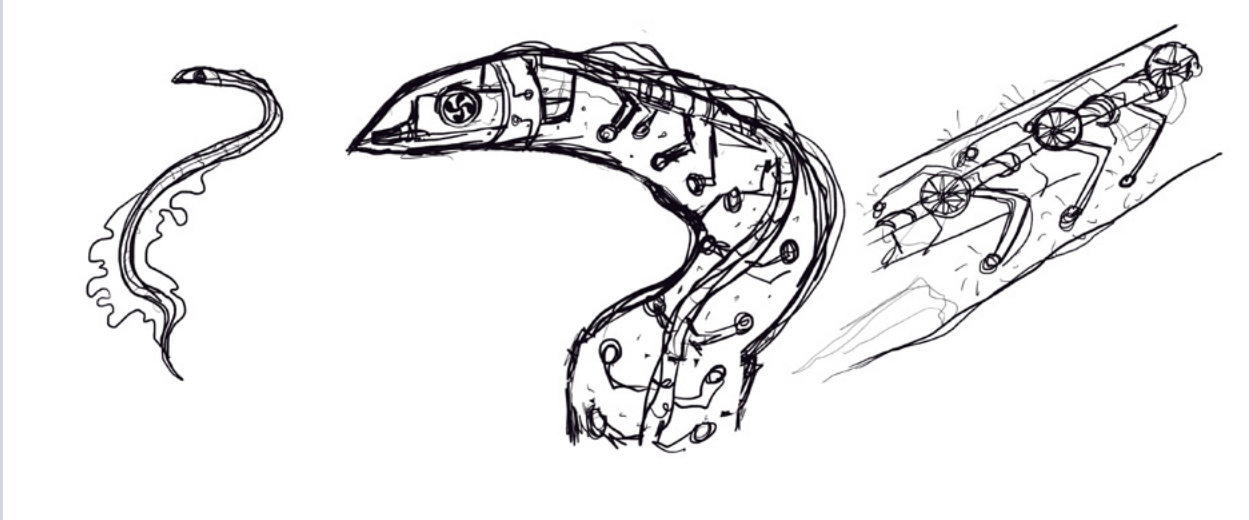
I take up stink here to highlight that our technology pasts stink, and not in a good way. Past and current iterations of computers and Western communications technologies plan obsolescence into our devices, yet the housings are designed to not break down for decades, if not centuries. E-waste is being refused at recycling facilities around the world even as newer versions of devices are marketed multiple times a year. These are what roots of our 'ĀIna, whether we like it or not. Smaller and larger impacts from this technology (mining, manufacturing, distribution, disposal) slide into the water we drink, the rain that falls on our crops. What futures will spring from those e-waste soils? What kind of calabash will come out of that ground? To answer this, I see two branches—two different emergences of 'ĀIna.

The first will be algorithyms (rather than algorithms) that can work with older tech—cobbling it together, creating hybrid machine-kin collectives to do work for specific communities. Arthur Pechawis and Ahasiw Maskegon-Iskwew's concepts³ of drumming across realms made me think of algorithms set to different rhythms. Technically, algorithms don't require computers (ex: geometry); an algorithm solves a problem. In Western media and computation studies, a special or highly-useful algorithm gets a name. I want to mark a category of special algorithms and name them algorithyms—these are set to different rhythms, and work with each other across digital and physical borders.

These algorithyms are Indigenously (re)coded and storied calculations and programs, ones that operate on different Indigenous community rhythms and needs; they will have their own names within communities as they build relationships with them. I also see them as interacting with other nonhuman kin, helping to address problems that occur, like the one noted by Pechawis with the Horse Nation in "Indigenism." If we take up the call to rethink what computing and technology is made of and made with, these algorithyms (and AI that emerge from them) offer rich lines of flight from what is considered castoff/outdated. This reduces e-waste and allows for groups with less re\$ources to build and connect with their own systems in

³ Ahasiw Maskêgon-Iskwêw. (1995). Talk indian to me #1. *Ghostkeeper*. Grunt Magazine Archives: <ghostkeeper.gruntarchives.org/publication-mix-magazine-talk-indian-to-me-1.html>.

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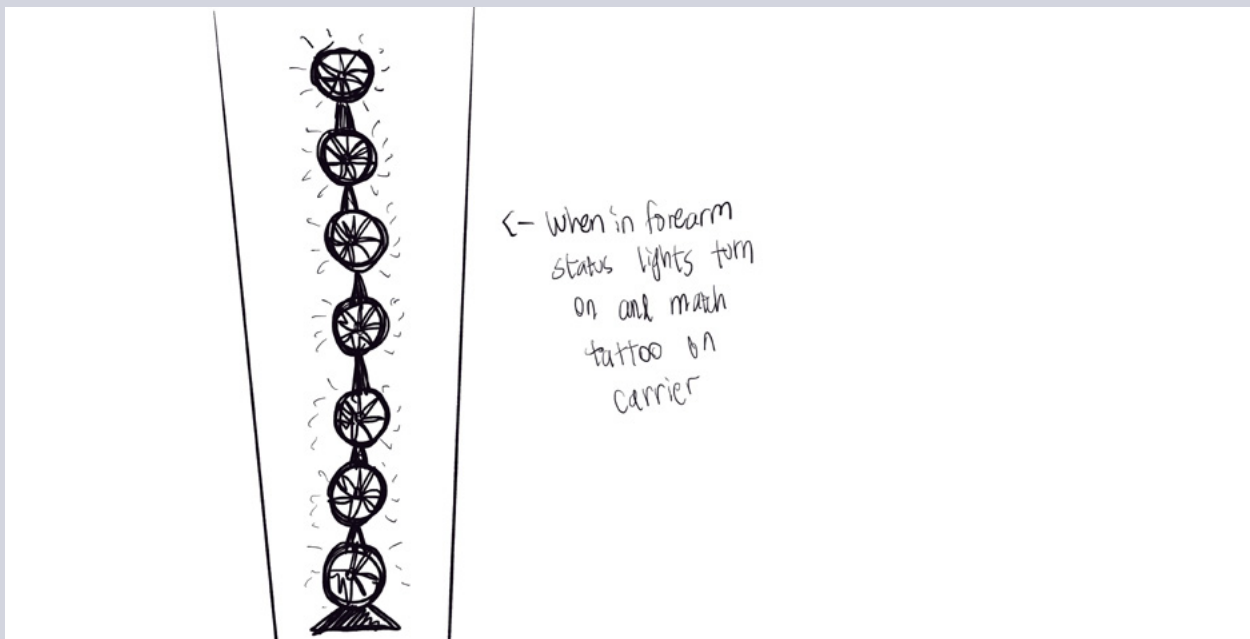


Txitxardin Lamia. Image by Kari Noe, 2019.

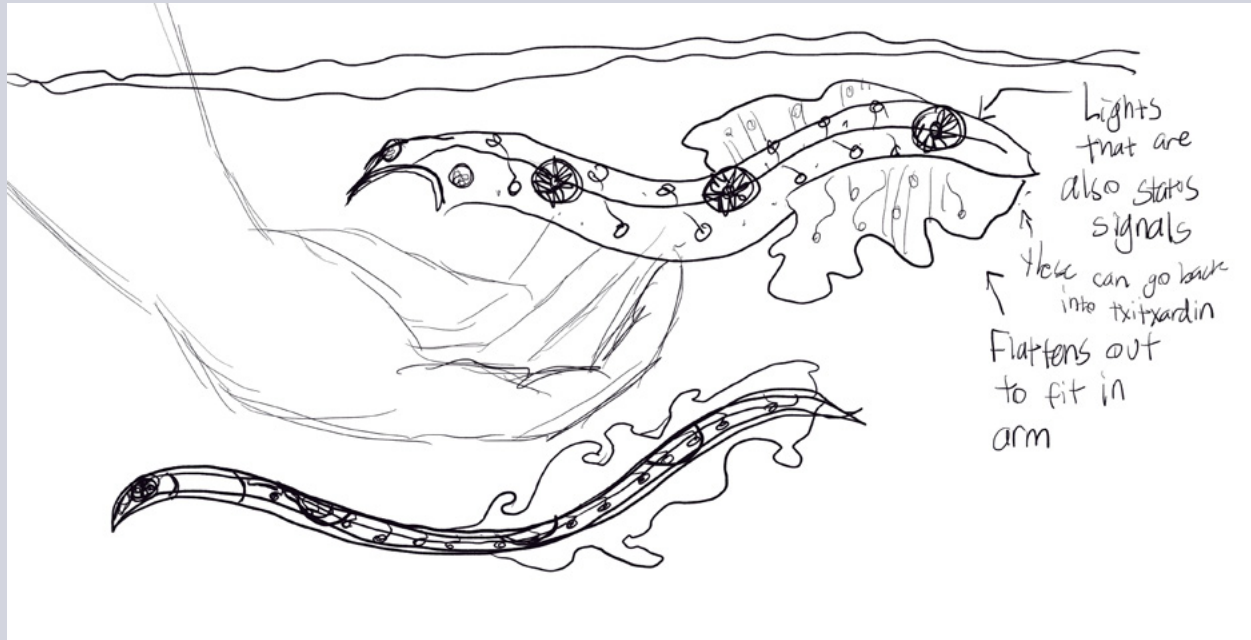
ways that are meaningful for them.

The second emergence is 'wetware'—biotech AI that take seriously the temporalities and materialities we are and will be. An example of this is shown below.

This is a model of a txitxardin lamia—a biotech angula/txitxardin (*elver eel* in English) that slides into specific ocean regions it is attuned to: gathering information and communicating with nonhuman relations there: algae, plankton, fish, etc. It collects and interprets this information, then enters the



Txitxardin Lamia. Images by Kari Noe, 2019.



Txitxardin Lamia. Images by Kari Noe, 2019.

arm of the sorgina (the human it works with). As it enters the sorgina and relays what it has learned, it also draws nutrients and an electrical charge from them. Each is nourished in different ways by this exchange—while intimate (and perhaps horrific to some observers), it is also consensual. This engagement is also specific to particular waters and sorginak within particular communities.

One meaning of txitxi is flesh, meat; txitxardin is our older word for eel: this is an eel made of particular kinds of flesh. Lamia (lamiak, plural) are water creatures⁴ that have long assisted Basque people and received assistance from us as well - the reciprocity must be maintained. The structure of this txitxardin lamia is crucial—the casing is made from kelp and the mineral remains of the sorgina's ancestor. The DNA codes of land, sea, and AI are woven together. It is understood that the human (sorgina) will become part of txitxardin in the future, and that these beings are also temporal—they do not last indefinitely. Txitxardin are fertile and temporal vessels, well-filled as they engage with their relations; they become fertile materials for next iterations and generations to draw from as this code becomes (re)coded yet again.

There is more I could say about this example, for now I want to hold it up to highlight that the vessels we use to hold AI and algorithms matter—they shape what they do, how we connect/exchange. What can we say about the casings we use now? How would that shape if they were not 'made to last' long after we intend to relate to them and with them? If we know technological tools/kin won't always be there, how would we treat them differently?

Ideas and designs shift in provocative ways when we take up these relations as reciprocal—with elders

⁴ Lamiak are place-based, associated with particular rivers and streams; itsas lamiak are ocean/shoreline relations – again with very specific ares/places.

who have much to teach, nudging us to absorb as much as we can, then give of ourselves to infuse future iterations. It also means looking to our past: our e-waste past (re)coded into fertile ground for AI; our ancestral relations and recipes (re)coded as wetware and interfaces. To keep all these vessels/minds well-filled, it is important to ask over and over how might we give to them as they give to us. Reminding ourselves what we owe to the larger communities we are connected to—and how we negotiate those relations, what consent looks like in these intimacies.

The vessel dictates how much can be held within it—it also codes how we interact with it, how these machine-kin influence other relations on larger and smaller scales as they degrade or pile up in landfills. Wide and vast futures of potential are routed in these pasts and presents—what matters most here and now is how we (re)code ourselves internally, drawing on past technologies of relationality to structure these new kinships and the vessels that carry them.

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When will computers be able to model the human brain? How will artificial intelligence impact on Indigenous communities?

Dr. Melanie Cheung, Ngāti Rangitahi

February 28, 2019

Until now, artificial intelligence isn't something I have thought very deeply about. I was never into science fiction. I didn't even take computer studies at high school. The fact that I now work in tech, despite being slightly technophobic, is kind of funny.

I am a Māori neuroscientist that has spent the best part of two decades studying the human brain from its gross anatomy right down to the molecular level. It's really an exquisite organ that allows us to see, hear, touch, taste, smell, think, feel, act, create, joke and move. Many cultures also credit the brain for having spiritual properties such as sacredness, spirituality and life force. In Māori culture, the brain

is not only sacred, but human interaction with brain tissue is restricted. Consequently, I worked with *kaumatua* (elders) to develop *tikanga* (customary practices) to integrate into my scientific methods for growing cells from post-mortem human brain tissue. We continue to develop decolonizing methodologies that acknowledge sacredness, spirit, culture and community, within our laboratory and clinical practice.

My area of expertise is neuroplasticity, the brain's extraordinary ability to change its structure, function and connections in response to the input it receives. Through providing specific inputs that therapeutically alter the structure, function and connections in dysfunctional neural networks, we've been able to develop neuroplasticity-based treatments for a wide range of brain disorders. The inputs that drive these changes involve online brain training, which is how I came to be working in tech.

So, when I think about what the future looks like for artificial intelligence, I think about the increasing ability for computers to be able to model the human brain. Despite huge gains in machine learning, there are a number of limitations that computers would need to overcome to model human brains.

We know that computers can learn, so there is some degree of neuroplasticity. But computers will always be limited by the fact that they need to be programmed by humans. That is, someone still needs to program the learning. You could argue that the human brain is programmed by experience. In fact, there are several famous experiments that show that 'programming' in primate brains is actually reversible by changing input. This is the beauty of neuroplasticity.

One of the reasons that the human brain is able to change so readily is because it is a biological system. The brain contains all the cellular machinery and elements that are required for brain cell connections to be formed, reinforced and broken: DNA, RNA, proteins, neurotrophic factors, neurotransmitters, receptors, ion channels, cell membranes, energy sources, transport networks, and so on. While synthetic biologists are able to engineer artificial cells that mimic biological cells, the most complex cell they've been able to model so far is a bacterial fighting eukaryote (which is nowhere near as sophisticated as a brain cell). Artificial cells that conduct electricity, similar to brain cells, have also been created, but they are still a long way off being able to carry out the other complex cellular functions of brain cells. I think it's only a matter of time before synthetic biology and machine learning scientists combine their knowledge to develop a synthetic biology-based brain-like computer. But to what end?

Why are we interested in creating machines or robots that have human-like intelligence?

What will the real cost of artificial intelligence be on our Indigenous communities?

Will people lose their jobs because robots will be built to be more efficient than humans?

How do we develop an economy that values human qualities, as well as efficiency?

Could the vast amounts of money poured into artificial intelligence research be better used on improving Indigenous health and living conditions or protecting our environment?

How then, can we develop artificial intelligence technology that improves quality of life for Indigenous people rather than creating yet more disparity?

How can Indigenous people be involved in decision making about artificial intelligence?

What do our elders have to say about artificial intelligence?

Will Indigenous voices be valued in this space?

What decolonizing methodologies can we develop to determine how we want to interact with artificial intelligence?

In summary, I am looking forward to our workshop together. I'm excited to meet Indigenous people from diverse disciplines. I'm especially looking forward to spending more time thinking deeply about artificial intelligence and the ways it might impact on Indigenous communities in both good and bad ways.

What does the future look like for AI?

Meredith Coleman

18th Feb 2019

Artificial Intelligence already surrounds so much of what we do in our day to day lives—for example self-service scanners in supermarkets were posited as a 'creepy futuristic machines' when they were first introduced in the mid-noughties, yet these are now a much-appreciated convenience for shoppers, and asking Siri or Alexa rather than typing a question into Google has become second nature to many. Shaving a few seconds from one's day has become preferable in many cases to maintaining our privacy, willingly giving our precise location and other personal details to companies such as Google, Facebook and Uber in the name of convenience.

We are already living in the future, in some respect, as much of our technological progress becomes focused on refining what we have already created—although perhaps this is a naïve view from someone who can't picture how different the future may really look. Today's world looks vastly different from the world of the 1990s, for example, except that we still use much of the same technology. Might it be the case that twenty years from now, artificial intelligence and technology are aesthetically very different, yet their function remains similar? Might we be using the same basic technology for brain surgery that we've used for years, while the success rates and accuracy of the technology dramatically improve?

In [Kate Darling's TED talk](#) on our emotional connection to robots,¹ she raised questions about why, as

¹ Kate Darling, "Why we have an emotional connection to robots," *TED*, September 2018, <ted.com/talks/kate_darling-why_we_have_an_emotional_connection_to_robots>.

humans, we seem to feel emotion for certain technology as though it were alive. I think this is important when considering where the future of AI will take us, in particular as Darling raises issues of what happens when humans are unable to disconnect from technology emotionally. It may be the case that the more specialised and progressive our technologies become, the less we are able to separate ourselves from them emotionally. Darling spoke specifically about robots being used to clear minefields, and other army robots even being given funerals when they were “killed,.” In light of this week’s news that the Mars rover “Oppy” Opportunity has ‘died’, this emotional connection seems to have really hit home, as we have seen the direct impact that an emotional connection with robots and technology can have.

But perhaps this is a good thing. Does this not show us that humans are not so desensitised to violence and destruction, to the degree that we will mourn for something that is not even alive? Darling’s talk highlights for me how humans are still very much in touch with our emotions, and we seem to be a long way off being made robotic ourselves in our inability to care. One of the greatest worries for the upcoming generations is that an increasing demand for artificial intelligence will result in humans being less reliant on other human company, as the need to communicate with one another is stripped away by technology. Darling’s research suggests that this is not the case, at least not yet, as our ability to empathise still outweighs the abilities of the technology we have created. While it remains true that the technology that exists today is capable of doing terrible things, it simultaneously seems that to most people, improving on technology is largely for positive progress. Yes, artificial intelligence is reducing our need for learning certain skills (think being able to have food delivered through our phones and the internet, rather than learning to cook for ourselves), yet these same technologies can help us to learn skills we might not otherwise have the opportunity to explore—for example devices such as Alexa and the Google home hub being able to use the internet to create walkthrough instructions for people to learn as they go. I mentioned earlier that people are becoming increasingly fond of convenience, and it seems to be the case that the progression of technology and artificial intelligence is most appreciated when it allows the user to add a level of convenience to their lives, rather than having our lives be taken over by the reach of artificial intelligence. In particular, technology has practical uses in the disabled community, from screen readers for accessing social media, to the specialised treatment of disease. Being able to harness new technologies to aid specific groups opens doors for creating a more accessible society for all.

Overall, it seems that the future of AI is incredibly bright, with new technologies being produced on a near-constant basis. While popular culture increasingly prophesises how artificial intelligence will be used for the downfall of civilisation (dramatic, but perhaps not too hyperbolic), with the likes of Elon Musk becoming the comedy villains of our real-life superhero movie, it seems that we are far from being taken over by a robot race. It is inevitable that artificial intelligence will become a much larger part of everyday life in the coming years, however this does not need to be “the escalator from hell,”² as Jack Clark, the head of policy at OpenAI worries that their latest AI technology will become if released to the

² Alex Hern, “New AI fake text generator may be too dangerous to release, say creators,” *The Guardian*, February 14, 2019 <[theguardian.com/technology/2019/feb/14/elon-musk-backed-ai-writes-convincing-news-fiction](https://www.theguardian.com/technology/2019/feb/14/elon-musk-backed-ai-writes-convincing-news-fiction)>.

public. These concerns surrounding AI are not entirely without reason, with privacy and data breaches being front and centre of many news stories in recent months, however it seems to be the case for now that much of the technology for now is being used for public good—even if vast quantities of personal data are being stored by corporations. It is difficult to say whether AI will ultimately have a wholly positive or negative impact on society, since so much of the technology is being created and worked with while not necessarily being fully understood. We are at a point in history where science is progressing at an incredibly fast pace, with new concepts being realised constantly, as predicted in the 1960s by Gordon Moore. Working with such technology means that fundamentally, we are not fully equipped to deal with the full extent of its capabilities. The coming years are likely to bring a massive change in how we interact with the world around us, as well as with one another, and may exact immense social change around the globe on a much larger scale. It is impossible to say whether Jack Clark’s concerns or Kate Darling’s optimism for the future of AI and technology will become the realised state, but with the rate of progression it seems sensible to accept that either approach is a distinct possibility for our future.

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Envisioning the Artificial: Technology, Time, and Indigenizing The Future of AI

Ashley Cordes

November 19, 2019

As tired as it is to say, thanks to the *Black Mirror* Netflix series, the music of Janelle Monáe, psychedelia, sci-fi, and a plastic bag full of cultural artifacts, the pop cultural psyche already has a clear collective visioning of what the future will look like via Artificial Intelligence (AI). How do we move beyond what is already semiotically pre-determined to ask the negotiated and oppositional ways that the future looks like *for AI*?¹ We need to question what the future looks like for AI, because we and AI are among the

¹ See Hall, S. (1973). Encoding/Decoding. In *Culture, Media, and Language: Working Papers in Cultural Studies*, 1972-1979 (pp. 128-138). London, UK: Hutchinson.

many agents determining it. In taking these steps, there are challenges in theorizing what technology of the future is because of the work that theorizing it performs within an overarching capitalist, sexist, and racist system.

In the '90s particularly, the popularization of digital was framed by discourses of transformation, replacement, and advancement (Van den Boomen, 2009). Digital culture came to define the zeitgeist, slighting the so-called generalized print and electronic eras that preceded it. Maintaining the pretense of these eras as separate and linear is but one tactic used by tech industries to sell their newer products because technologies are on one hand commodities not gods—and on the other hand, gods.

This narrative of progress tends to help humans more generally by making them feel comfortable about their movement through time and space and they hold profound social meaning. Most relevant is that the narrative of progress reflects racially charged ideologies that become hyper-naturalized. As Métis critic Emma LaRoque (2010) states, “behind the dichotomy of civilization versus savagery is the long-held belief that humankind evolved from the primitive to the most advanced, from the savage to the civilized” (p. 39). They blur the fact that communities, particularly Indigenous communities, have been using many technologies, shifting, retaining, rearticulating, and adopting different forms for tens of thousands of years or since time immemorial.

In this regard, history and time is too commonly described as existing on a horizontal line with the far left being the past and the right being the future within certain worldviews. The narrative of progress creates a laughable spectrum that tends to place Indigenous technologies (old and/or new) in the past and uber-new new media on the right, despite Indigenous spirals upon that slippery spectrum and their/our clear contributions to the uber-new new media. I, before recently reading disappointing writing on Indigenous currency technologies (see the forward of *Paid: Tales of Dongles, Checks, and Other Money Stuff*, which describes ‘shell money’ as weird, depressing, and non-modern (Sterling, 2017, x-xi), thought that this was already clear. The only thing that is now clear is that conversations like these need more space.

Specifically some space needs to be focused on the future of AI because it is now being paired with almost all other preeminent technologies. AI will infiltrate privacy while simultaneously being personal assistants, fuel technology races between nations and be adopted for warfare while still driving you home from work. It will, as it already has, come under large scale scrutiny and regulation for the bias it inherently holds when used in criminal justice, healthcare, lending, and education. It will also look hopeful. The future will be techno-pessimistic, optimistic, and pragmatic and it's not productive or holistic to look at in only one way. Moreover, looking at it in only one way is a means of forcing arguments that we just simply are not sure of and limiting a categorically more creative visioning of the future of AI.

What makes newer technology, AI, or media interesting, meaningful, and worthy of talking about is when technological innovations are thought about by communities that have been consciously marginalized by the system. The innovations themselves are not necessarily paradigm shifts, but the

ways in which the systems created are commandeered to change up the systems in some small way are. Foucault, a critical theorist, discusses how power is, of course, an omnipresent feature of life. One side or many sides of a power equation pushes the others in a direction and visa-versa, a tug-of-war of sorts. Power is not only everywhere and two-directional but is targeted, enacted, and embodied through discourses and knowledge. The discourse that centers on Indigenous people as technologically backwards is one deployed by colonial forces to delegitimize Indigenous ways of knowing and ways of acting, and it is disconcerting that we still have to talk about it. By making AI work with us and framing it as an Indigenous project, efforts like these play into a chipping away at this ‘regime of (un)truth.’² They break down epistemological underpinnings and exemplify the fact that Indigenous people are not only surviving in the digital age, but are in the driver’s seat of envisioning futurity in an increasingly digital and globalized world.

Technology, the communicative artifacts that are considered in the deployment of stereotypes such as these, are at the same time the essences that can be re-inscribed or created with counter-hegemonic charge. With Indigenous efforts the future of AI will feel like predicting, planning, learning, representing, executing, doing, perceiving, solving, fixing, ruining, helping, hurting, intellectualizing, complicating. The ride will not look like a linear line and it will also recognize and give nods to glimpses of AI in ‘traditional’ items. For example, Haas (2007) points out that hypertext and multimedia are too often claimed as Western. Hypertextuality refers to the accessibility of texts through other texts, layered with meaning. Wampum shells were, and still are, made by many Indigenous peoples, particularly Haudenosaunee peoples, into intricate ‘belts’ to tell stories, to mark occasions, to make contracts; there are layers of meaning that make them hypertextual. These are also arguably digital in that the beads are strung, they are code, and can be read; they are retrievable, decodable, memories of Indigenous epistemology. This suggests an intelligence in the creation of life that carries on beyond when human and non-human ‘creator’s’ hands have left said technology.

AI can look to help make better the lives of Indigenous people and help to ensure Indigenous futurity. For this to happen, AI should be made/stewarded with Indigenous epistemologies at the forefront to radically question, appropriate, and push back pervasive globalized peer-to-peer systems or any systems which may not help our communities. Here lies the potential to help restructure our social worlds, transform the ways we view digital territoriality, and help us to embody relationships with the various ecosystems we depend on.³

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² See Foucault, M. (1978). *Discipline and punishment: The birth of the prison*. New York, NY: Pantheon Books.

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A very personal look at the future of AI

Joel Davison

AI today is bound by practicality, talented developers, cutting edge research, specialised hardware and top of the line cyber security, which are all ingredients required to advance simple AI beyond current offerings. This means that the entities with the power to advance AI, those with access to pools of talent and academic connections as well as the funding for hardware and security, are those which already have much more money to invest than what is required to operate as a business. These entities, be they government or private, expect a return on investment, in this way AI advances will always be pushed in a direction that is either profitable or marketable, due to this AI is entwined with automation in our cultural lexicons and it is this connection that often dominates conversation.

If Artificial Intelligence is to replicate human intelligence, then the most direct way to profit off of said intelligence is to exploit its labor value. In this way conversations are often steered towards analysis of labor-value of existing occupations. For example, advances by large tech companies in self-driving cars has every in-tune truck driver eyeing other industries at this point, and we¹ can't² stop talking³ about⁴ it.⁵

¹ Walker Orenstein, "Automated 'platoons' of trucks might soon be driving on Minnesota roads," *MinnPost*, February 1, 2019 <minnpost.com/good-jobs/2019/02/automated-platoons-of-trucks-might-soon-be-driving-on-minnesota-roads/>.

² Seth Clevenger, "Self-driving truck startups TuSimple, Ike attract more investment to fuel development," *Transport Topics*, February 13, 2019 <ttnews.com/articles/self-driving-truck-startups-tusimple-ike-attract-more-investment-fuel-development>.

³ Adam Rowe, "The trucking industry's future: go high tech or go home," *Tech.Co*, August 30, 2018 <tech.co/news/trucking-industry-future-autonomous-drivers-vr-2018-08>.

⁴ David Welch, Gabrielle Coppola, & Chester Dawson, "Young CEO of electric vehicle startup Rivian has Amazon riding shotgun," *Seattle Times*, February 24, 2019 <seattletimes.com/business/young-ceo-of-electric-vehicle-startup-rivian-has-amazon-riding-shotgun>.

⁵ Finn Murphy, "Truck drivers like me will soon be replaced by automation. You're next," *The Guardian*, November 17, 2017 <theguardian.com/commentisfree/2017/nov/17/truck-drivers-automation-tesla-elon-musk>.

The vast majority of these industry shaping moves that are being made are opportunities presented only to the wealthiest organisations on the planet, due to the benefit only being realised at a huge scale thanks to the costs outlined above, talent, research, hardware and security. It simply isn't feasible for small organisations, potentially social ventures, NGOs or co-ops, to lay stake to a portion of the market without the network and capability to take advantage of the wider market. If the benefit of Artificial Intelligence in this liberal-capitalist frame is the profit earned by extracting more labor-value by reducing the overhead of hiring humans to manually perform tasks, then by the time you have paid the up-front costs for the research, development and specialised manufacturing to begin providing self-driving vehicles as a service, you start to realise that you need to roll out your service on a massive scale to begin to realise the benefits. In this environment Artificial Intelligence becomes a winner takes all venture, where the only participants are those already winning.

However, we have been seeing a shift in this landscape, a move by some of the largest organisations that changes the climate entirely. Having developed their AI and taking their time to scale and implement before they start to see their benefit, these large organisations have started to look for alternate revenue sources for their AI solutions. Most notable of these alternate revenue sources are the AI as a service platforms, such as IBM's Watson or Google's Tensor Flow. Suddenly, small organisations can provide the benefit of AI (or at least market that they do) without the tremendous up-front cost of research and specialised hardware. In this we are now seeing many small businesses and startups getting into the game of exploiting the difference in labor value between human intelligence and Artificial Intelligence, this time opening up smaller scales, nooks and crannies in the marketplace to be explored.

In all of these conversations we are only exploring the capital value of simple Artificial Intelligence: it's the capitalist equivalent of only talking about the 'why?' of AI (the answer to which is almost always 'money'). Little do we explore the impact of simple Artificial Intelligence, we never really ask 'how?', and when we do it's always too late.

In November 2017, The Guardian broke the story of a secret police blacklist employed by the New South Wales Police,⁶ a "Suspect Targeting Management Plan," which the NSW Police Commissioner called a "predictive style of policing,." This is kind of low-hanging fruit isn't it? My intention was to share a couple of cases where organisations hadn't stopped to ask 'how?', or what their impact is, but surely no one on this program even stopped to ask 'why?'. It doesn't take a genius to figure out how this goes terribly wrong, hell you don't even have to look much further than Marvel, who ran a (fantastic, by the way) crossover event by the title of "Civil War 2" which featured at its center the arguments for and against 'predictive policing', it's actually kind of prophetic and I love it so.

⁶ Michael McGowan, "More than 50% of those on secretive NSW police blacklist are Aboriginal," *The Guardian*, November 10, 2017 <theguardian.com/australia-news/2017/nov/11/more-than-50-of-those-on-secretive-nsw-police-blacklist-are-aboriginal>.

spoiler warning

The event comes to boiling point when a new Spiderman, Miles Morales⁷ (A young African American, Puerto Rican man) is accused of murdering Steve Rogers, Captain America in the future. After all of the superheroes have shared their perspectives and opinions and had their brawls, the takeaway from this is the question, ‘is it ever okay to judge someone for something they haven’t done but could do?’, to which the answer is no, you shouldn’t, especially if the current criminal justice system is suited to it and especially if you don’t think very carefully about it. Unfortunately the Australian criminal justice system isn’t suited to it and very clearly the NSW police did not think very carefully about it.

spoilers over

‘Okay Joel so you have some comic-books-based opinions on predictive justice, but seriously how bad could it be?’

It gets pretty bad. According to the NSW Police Commissioner Mick Fuller, “here were about 1,800 people subject to an STMP across the state. About 55% of them were Aboriginal,” the youngest of which is a nine year old. Currently Indigenous Australians only make up 3% of the national population, so how is it that we represent such a large portion of this database? Are we really that talented at crime? I mean, do we really commit 17 times more crime than any other Australian ethnicity? Of course not, that’s ridiculous, so how did this AI come up with this list of suspects? The truth is, we don’t know and if you ask the police they wouldn’t know either, the company that they contracted to develop the solution likely don’t know either and don’t care how, they’ve already answered their ‘why?’ (read: money). Most likely the people developing the solution don’t understand how the AI’s learning algorithms work and didn’t think about the kind of training data the AI was trained on before it started working on production data.

‘But Joel, they’d have to have thought pretty hard if they made the AI racist, it’s a machine so it’s impartial to race and ethnicity’, turns out that’s not the case,⁸ AI more or less come out of the box as racist. This is due to how AI are configured in these projects, to perform better than humans they need to learn more than humans in the narrow field they’re being developed for, which is one of their strengths: they can take a huge set of training data and learn from it very quickly. The data is important, however, and as it so happens the most easily accessible large datasets are user-generated and contain all of their respective prejudices. So it’s important to ask ‘what data set was it trained on?’, in this case definitely existing data on previous arrests and criminal convictions by the Australian Federal Police. ‘Hold on, the data on previous arrest and criminal convictions by the Australian Federal Police reveals a strong recurring prejudice toward the Indigenous population of Australia?’

⁷ “Miles Morales (Earth-1610),” <marvel.fandom.com/wiki/Miles_Morales_(Earth-1610)>.

⁸ Robyn Speer, “How to make a racist AI without really trying,” July 13, 2017 <blog.conceptnet.io/posts/2017/how-to-make-a-racist-ai-without-really-trying>.

Imagine my shock.

So now the police have a racist AI that's populating a confidential list of suspects who are majority Indigenous, who the police are now legally able to arrest before they commit a crime or do anything suspicious. Yeah, the police in 2017 criminalised being Aboriginal. That's how bad it gets.

I'd love to say this proves the point I was making earlier about the impacts AI can have if we don't ask 'how?' but it's even worse than that. The fact of the matter is unless we are very careful, AI-as-a-service can be used to intentionally obfuscate the 'how?'. We don't know how the NSW police's AI became a racist, we can make very good educated guesses about training data and configuration, but we don't *know*: the AI obfuscates the process by which it came up with its database through its sheer complexity alone. The biggest problem is that in spite of this, the results are still being used with authority. Because it is an AI, a machine that 'just runs analysis' all it is doing is giving authority to existing and past prejudices and perpetuating said prejudices, rather than having the ability to challenge them like a human might.

We haven't been asking of ourselves 'how?' and when we don't, we don't move forward, we don't challenge and we don't change. We just become more efficient and I don't think that's the vision anyone who is passionate about AI & Computer Science imagine. If we are to use AI to move our society forward, to make real change instead of just making profit, we need to ask 'how?'.

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Cultural Computing/Indigenous Values

D. Fox Harrell, Ph.D. & Danielle Olson

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Artificial intelligence (AI) systems are cultural systems. This may not seem intuitive for those who think of them as complex technologies serving utilitarian purposes. However, “all technical systems are cultural systems” (Harrell, *Phantasmal Media*, p. 345). This is because technologies are created in particular historical-cultural contexts and are informed by underlying shared cultural perspectives. Furthermore, computers play a role in shaping culture “through facilitating the construction of shared knowledge, shared beliefs, and shared representations” (Harrell, 2013, p. 345). When considering the future of AI, particularly the relationship between a plurality of Indigenous values and AI, we need to then make some of the values within AI explicit that are usually left implicit. Toward this end, it is first useful to consider what AI itself is—and we quickly begin to see that AI itself represents a plurality of values as well.

AI represents many different aims, technologies, approaches, and communities of practice. Often times, these aspects are described in binary terms, for instance contrasting:

CONTRASTING FEATURE	SIDE A	SIDE B
Aspirations	Strong AI ¹ : Aspires to machine consciousness, sentience, etc.	Aspires to competence in a more narrow domain (e.g., performing indistinguishably from humans in conversation)

¹ Searle, 1980

CONTRASTING FEATURE	SIDE A	SIDE B
Approaches	Symbolic: a.k.a. “Good Old-Fashioned AI,” (GOFAI) ² Uses high-level, human-readable representations (e.g., first order logic)	Connectionist: Uses artificial neural networks as a model
Research Goals ³	Engineering: Produce a system that performs some task typically thought of as requiring intelligence	Cognitive Science: Produce a system that helps explain or simulate human mental or neural processes
Style ⁴	Neat: Preferring top-down explainable, if not provable, solutions	Scruffy: Preferring bottom-up, functional, if not completely explainable, solutions

Support for AI has gone through cycles as well. Early on, AI researchers worked on abstract, small domains with the belief that the results would generalize to the world at large—with a swath of research impelled by military-industrial applications. The mid-1970s have been described as an “AI winter,” particularly in the United States as the Defense Advanced Research Projects Agency (DARPA) funding policy changed in a way that disadvantaged generalized AI research. Recently, with the processing power of today’s computers, pervasiveness of big data, and new innovations and optimizations with artificial neural networks, ‘deep learning’ approaches have produced compelling results. The attendant attention and funding AI have prompted some to even suggest we are now in an “AI spring” (Warren, 2016).

In light of these many aspirations, aims, approaches, research goals, and styles of AI, one might ask: how might we begin to characterize the values within traditions of AI? The concept of an ‘integrative cultural system’ helps toward this end. The term ‘integrative cultural system’ can be used to describe how culture, knowledge, beliefs, and representations are distributed onto material and conceptual artifacts, here with a focus on computational artifacts (Harrell, 2013, p. 207-249). We need to carefully examine the assumptions, structures, uses, discourse around, and practices involving these technologies. This means that we should not limit ourselves to analyzing the technical functionality of systems, but rather looking at the ecologies of people, artifacts, code, interfaces, language, etc. around systems in a more holistic way (Harrell, 2013, p. 74).

² Haugeland, 1985

³ Jenson, 2018

⁴ Schank, 1983

Finally, to engage the relationship between Indigenous cultures and AI in a manner that supports people's empowering needs and values, we need to adopt a cultural computing perspective (Harrell, 2013, p. 167). This perspective means entails performing research and practices that engage commonly excluded cultural values and activities to spur socially and critically valuable computational innovation. More importantly, cultural computing research and practice focuses on rigorously understanding and articulating the groundings of computing systems in culture. This all means that we must work together to build the future of AI in a manner that supports the vast array of human creative cultural production, including supporting mental and physical wellness, economic and educational advancement (U.S. Global Development Lab, 2018), the arts, and more. We hope that this workshop can help open new vistas based on grounding computational practices in Indigenous values that have long traditions of supporting such ends.

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Digital Sovereignty

Peter Lucas Jones

June 18th, 2019

Kia ora, my name is Peter-Lucas Jones and I'm from Te Hiku o te ika, and my iwi, or my tribes, are Te

Aupouri, Ngai Takoto and Ngati Kahu.

So I met Oiwi Parker Jones at Oxford University, which was in year 2018. We had the opportunity to meet with him and a few of his colleagues and talk about Maori language voice recognition and the opportunities that that gave to our people to actually synthesize a voice in our language, to actually develop a huge text corpus for, a data for development and innovation and along with that an acoustic database or an acoustic data collection with all the reading of utterances in our language in order to develop natural language processing tools.

So that's how I met Oiwi and then he contacted Keoni Mahelona, who is my partner, and then that's how I got here. Yeah, after writing a couple of paragraphs around what I could possibly bring to the table, knowing that this is about participation but also sharing our expertise, experience and what knowledge and skills that we bring to complement designing a solution for a problem we all share as Indigenous people.

I'm often mindful that we get invited as Indigenous people to Indigenous conferences that are organized by non-Indigenous people. So my expectation was that this was being organized by Indigenous people, so I think the level of participation that you're quite happy to be part of when it's a hui, or a workshop or a meeting that is organized by people that are from communities similar to yourselves, then you think, well they understand the context of colonization, white assimilation in a in socio-economic background and place that affords us as Indigenous people, and quite often it's at the bottom of the heap. So I was looking at it as a way to secure a place for ourselves, my tribe, my tribes, you know—my people, in the future, in the digital future.

Because as far as I'm concerned I don't just think about how AI can be used, I think about how we can be the makers of AI and how do we secure economic opportunity for our people in the future, so that when we deal with open source and all that that offers us, we deal with it with our eyes wide open, knowing that these are the skills and expertise that we need to apply open source code or whatever.

Let's face it: most of our people are not in a position of privilege that affords them those skills and expertise, so open source is good for white privilege.

But what does open source amongst Indigenous communities look like? How do we share ideas, concepts with a level of integrity and trust that you only have with other Indigenous people?

When we look at the artificial simulation of human intelligence we're mindful that that operates a great deal of the time on the data that it is fed for training, computer modeling and all that type of behavior that we expect it to perform relatively well at.

If we look at the jail. For Maori people, we make up more than 50% of the jail population yet we are only 15% of the wider population.

Quite often a reason for that is described as racism or racial profiling but if we look at the other Pacific peoples that are in our wider population in Aotearoa, New Zealand, we can see that only 11% of the jail population is actually made up of other non-Maori Polynesian or Pacific Island people. So then that suggests something quite different.

We know that most of our people at least have a first or second degree relative that has either been to jail or is in jail. So when we talk about law enforcement and AI we're mindful that, what are the risks there that we need to be mindful of. Data, if it's being mined or if it's being categorized or if it's being curated in a way for law enforcement, needs to take into account that that data is biased.

We know that white people get let off for crimes that our people get sent to jail for and so that's a risk that we've identified. But along with it comes, along with AI, comes a lot of opportunity.

If we were to think about natural language processing tools, if we were to think about the important part that we place on language retention and the acquisition of our languages and our culture, we know that that sort of data is captured in our written text. It's also captured in the stories that we tell, intergenerationally amongst our people through speaking our language.

So if we were to synthesize a voice or if we were to develop voice to text, text to voice, or even voice to voice, what does that open up in terms of opportunity for cultural and language intergenerational transmission in today's day and age?

So whilst there are risks, we can't run away from the opportunities. Because as people that have been alienated from our culture, we now have an opportunity to sometimes revive things that we have lost as part of the colonization process.

So I think working with other Indigenous people that have similar problems, we come up with a solution or a series of solutions that we can then pick from, knowing that we trust other Indigenous people because they've gone through a similar traumatic experience to ourselves.

I mean, imagine if we could automatically transcribe Maori language audio in real time and the traditional knowledge we could unlock from there?

Our extensive native speaker collection that we have at our iwi radio station, I'm the general manager for my tribal broadcasting media hub, if you think about all the traditional knowledge, the medicines, the foods. We talk about food security, we talk about restoring the water ways, what sort of plants grew down a specific water way. We talk about the ocean, we talk about the mountain, we talk about the forest, the birds and all the animals that are part of our landscape. And when we think about natural language processing tools and using that as a way to mine our own data for the purposes of revival, maintenance, preservation, promotion and growth of our language and culture, it opens up so many amazing opportunities and that excites me.

I think that we naturally gravitate towards people that have shared problems and what I'd like to see come out of this is us to be able to at least group our shared priorities.

I'm very optimistic in terms of what we can achieve and you can hear that we're talking about the environment, we're talking about our landscape, we're talking about our language, we're talking about our culture. We're talking about data security and data storage.

We store our data in our song and dance. We store our data in the way that we cook. We store our data in the way that we perform oratory. We store our data in the way that we welcome people and we store our data in the way that we farewell people.

But in the modern age how are we going to store our data being mindful that we do not live like we traditionally used to?

I grew up with our grandmother, our grandmother's sisters, our uncles and aunties, our mother and father. Our cousins were like our brothers and sisters. But now our families are growing up with a mum and a dad in a western context. So how can we use artificial intelligence to simulate the way in which our families are connected and the way that we transmit inter- and intra-generationally? Because I think that's a big part of our shared problem, is we are now displaced from the places we are most connected to.

So how do we reconnect ourselves without observing the community and starting to participate in it?

I think that we've got to be mindful that we have to enable development and innovation. We should be protective of our data, we have every right to be. We have a responsibility to protect our data. But with the protection also comes the role to promote and grow and we cannot promote and grow if we are going to constantly live in fear.

So I think what we have here today, and yesterday, is a group of people that are ready to risk it all, and we know that people that are ready to risk it all are going to be leaders.

They're going to be leaders that take these concepts and new ideas back to our communities so that we can take hold of these opportunities and when we do that we know that we're going to be moving with our brothers and sisters. And I think there is a level of security and when we can offer that back as a report to the communities, the Indigenous communities that we come from, we can then seek the ongoing endorsement and support. Because it's not about us making the decision on behalf of our people, it's about us taking these ideas back to our people and seeing if they're ready to engage.

And I think that the time is now and I think that this workshop couldn't have brought together more passionate people that are related and very entrenched in their own Indigenous communities and development and innovation, cultural and language preservation and very much connected to the landscape.

So I'd just like to say kia ora, thank you for inviting me, but most of all thank you for allowing us to share

and receive, of course, the offerings from our brothers and sisters from other Indigenous parts of the world. Kia ora mai ano tātou.

What does the future of AI look like?

Kekuhi Kealiikanakaoleohaililani

February 28, 2019

*from the lowland forest of Pana'ewa
our aloha to you of the makali'i constellation
to you of Kānehoalani-sun and his fiery volcanic offspring
our greetings to you of the oceanic people
to you of the mountainous regions*

OUR fondest aloha to you all as you traverse Kanaloa's vast ocean memory on your winged canoes and finally land on our ocean-bound island home...Hawai'i! Welcome home.

Thank you for the posts ahead of mine. In addition to very little inquiry on my part, your contributions are helping me form some understanding on the less tangible, less visible aspects on the topic(s). I hope not to offend anyone's intelligence by not forming any particular opinions, critiques, conclusions, but instead offer the first thing that comes to mind... in the spirit of Maui, the innovator & inquirer.

Here are some bullet point ponderings when asked to consider the future of AI:

- Is authentic-intelligence a possible future term for that which is a natural extension & reflection of human curiosity and invention; or perhaps alliance, or affinity or animated or some "A" word that has a relational quality
- What is AI's cosmology? Or, what is the creation story we can create?
- Aside from our pedestrian & physical dependence on AI, how do we cultivate a multi-dimensional & sensual relationship to AI?
- Can we infuse a beloved tree with the technology to 'tell' us how it feels?
- In the same way that we pray to the rain cloud to disburse or collect, or to call up the fire of the volcano, could AI enhance how we communicate with elemental phenomenon & the energetic universe?
- Are there AI applications that can help us monitor how the microbiome of forests or coral reef communities are doing when we're sleeping?
- About sleep time & the super conscious & subconscious & the subliminal—when we're in states of

ecstasy, meditative, trance, theta or delta states or experiences—how could we engage with AI to enhance or record inner states for quick reflection/feedback?

- Art, dance, music, poetry, ka'ao (myth) creation...I don't know what the question is besides the fact that these are necessary intelligences/processes that exercise underdeveloped parts of ourselves

I think that's it for now. Well, not really, but I'm sure we'll get to the bones of the discussion this weekend. Aloha to us all, love, Kekuhi.

How do we Indigenously Interact with AI?

Kekuhi Kealiikanakaoleohaililani

May 29th, 2019

Okay, aloha my name is Kekuhi Kealiikanakaoleohaililani. I am from Hilo from the island of Hawaii, so that's Southeast of here. My assumption is that artificial intelligence is just an extension of the human curiosity. And that I engage it every day and so do my children.

And then if that's the case then I assume that I have to create a relationship to it. That's the kind of mindset I came here with, cause I had to get a grip on something. I'm just super curious, is just how I entered this space. And if there is a challenge to bridge Hawaii life ways and some other new component of life.

My instinct is to start building the bridge. We started talking about, in the first hour, where we come from, and who we are in that community. And then I think we made the distinction about what is *not* Indigenous about how we interact with AI, and what *is* Indigenous about that.

And then I think as we became a little bit more comfortable with each other, we began to be okay with talking about, okay then if what we're looking towards is some ... An Indigenous way of having a relationship with AI, then I think we have to be okay with talking about some of our shared values. And I sort of think that's where we are right now. The Hawaii people are thinking through that and the ... The Aboriginal peoples thinking through that and Māori peoples are thinking through that. And I didn't know if we've gotten anywhere besides, the ... I think the big progression is that we're creating a new network.

Which to me is not much different from AI the interface. Let me just talk about some of the things that I've learned here, in the collective. I've learned that we all have the value of sort of inseparability with the elemental-scape. And the other thing I've learned is that we've all inherited particular cosmologies, that then sort of frame our relationship to that landscape. And the seascape and the skyscape, including the dream scape. So, if we could begin to approach AI through that story, give it a name—everything that's meaningful to us has either a name or a title or it's named a major element in the landscape, you

know—and create its cosmology, because then I think our relationship with the AI structure, no matter what kind it is, we can claim as almost familial.

And I think in that way we can begin to build an Aboriginal consciousness towards our relationship with AI. And then all that requires, then, is assigning names to the parts. Like what's the name of the mineral that we begin to use to construct the actual thing? The board, the interface; what's the name of the electricity that we have to infuse into that, to the material thing?

What's the name of the silica? That when all of these parts put together creates this new sort of extension of ourselves. I don't think it's any different from having created a canoe or a net or a dream weaver or a tattoo for that matter. I think we're in a good space. I think people know enough about themselves and their place that we can come to that. I don't know if two days is enough for that conversation. But here you go, we began this symposium with an introduction that included the regular things who I am, where I come from, what is my culture, what is my tribe.

So, the reality is, is there an Indigenous world? And is there a colonized world? Or are we even permeable to the fact that as soon as you decolonize sovereignty in your own mind, there's no doubt that you can influence your family and your community and it may not be your family or community nearby you. I mean our stories aren't any different from Star Wars; it's about the hero who has to leave his community, comes out of his community, because there's only one way of thinking there.

Moves out into not just another island or another continent. He moves to another place in the universe, has his journeys, and is able to reintegrate. Now, I'm sure you have stories like that from your space—we have tons. Odysseus is another very cool example of how the human spirit is able to shift; we have to evolve. Traditions didn't become traditions because they were static. Our stories are continually changing. You cannot tell me that your grandmother told the story exactly as she heard it from your great grandparents, it's impossible. It's impossible because it's filtering through another body. There we are: we recreate the story, and if we can recreate the story, then we can do it in our own spirit. It's that central piece that I ... That's where I like to live. 10 years ago it was difficult to live there, it was challenging, and now it's the norm. I think coherence consumes incoherence. I think we have the power—as long as we maintain our relationships with the elemental world and ourself—I think we have the power to consume incoherence around us.

And we just have to stop thinking that, just stop thinking that we're only colonized, and decide who we are. And then take over the world!

How AI alters and enhances our understanding of reality

Megan Kelleher

June 25th 2019

Hi. Okay. So my name is Megan Kelleher, I'm a Barada and Gabalbara woman from Central Queensland in Australia. And so I came to be a part of this workshop through a LinkedIn connection with Angie Abdilla, and I was invited to participate because there's kind of some synergies between this work and the work that I'm doing in my PHD, looking at Indigenous knowledge systems and the blockchain. So my PHD, as I mentioned, is looking at the synergies or the conflicts between Indigenous Knowledge systems and second wave automation, artificial intelligence, blockchain and these kinds of technologies where automation is occurring. So it's really grounded essentially in Indigenous protocols and how, or whether, they can inform the design of artificial intelligence or the design of these automated protocols, these automated systems.

So I actually find AI extremely interesting because it's teaching me a lot about how, within Indigenous Knowledge systems, we're not at the centre of the universe. So I'm just finding it really interesting to learn how AI is kind of teaching me about my own culture. I'm excited by exploring what AI can do and how there are actually some different ways that cognition occurs culturally. So different cultures have different cognition processes, and so I'm interested in what AI does to time and space and how it kind of alters and enhances our understanding of reality. I'm also concerned about what it can do and what the risks might be because it's so huge and it's mysterious and it reaches into places that we don't know it's reaching a lot of the time.

And I'm concerned because do we have a choice to participate in it? And so these workshops have given me some hope, I guess, that we can influence it in an ideal world. If it does become as powerful as people are saying that it can be, I would hope that it can empower Aboriginal peoples. I hope that it can help us to understand our genius. I hope that it can help us to understand that we were always, that we always had this genius in our old ways and kind of lead us back to that place where we were before. I hope that the world listens. I hope that the people who are designing AI and using AI's and implementing AI's think really seriously about what it is that they're doing.

I hope that they get an understanding that theirs is not the only way. Our ways are valuable and important. They kept us alive. They kept the earth alive. They kept the earth healthy for thousands of generations forever into the past. So I hope that these workshops can provide some knowledge that, and I'm certain that they will. We have: we've come up with stuff that's really valuable. I just hope that people take it seriously and they don't just kind of write it off and think that's a bunch of Black fellas getting into a room and playing imaginary games. It's really important what we've done.

Our thought experiments, they will lead us somewhere if people take it seriously. You know, we've got massive fires in Tasmania. We've got massive fish kills happening in the Murray. We've got droughts happening in Queensland. We've got skeletal cattle on the front covers of newspapers. I kind of think maybe that should send some signals to people in Australia that—and not just in Australia—that's not

just happening in Australia. I feel as though there might be a bit of a shift, I see little slivers of hope.

I read a story about a couple who handed back half of their property in Tasmania to an Aboriginal land council, because they believe that they can look after it and manage it better. I think that it just shows that they actually do understand and they care for the land and they want it to go on. So I think there is a little bit of a shift, however you've still got politicians in the northern territory signing off on massive fracking deals, in the face of Larrakia elders just flat out saying, no, it's not safe. We've got pipelines running through Queensland to offshore gas shipping terminals that are stirring up the reef. We've still got all of these environmental catastrophes and in some ways there is a shift, but it's far too slow. And you know, as much as AI is a really exciting area to explore the technology that it requires in its current stage, the materials that are required to support the technologies are not sustainable. So we need to think about how, if we could program an AI that can tell us: "build me with this."

This has been amazing; just coming together with all of these really thoughtful, humble, powerful, Indigenous peoples from around the world has been really inspiring and humbling. And two days has just not been long enough and I really want to be involved as the project goes forward, but I guess our message to the world, to the designers of AI and similar technologies is to be humble and remember that humans are not the centre of the universe.

Looking back to the future of AI

Maroussia Lévesque

Jan 31st 2019

In short, it looks like the past—unless we do something about it.

First, a definition. AI is an umbrella term that means different things to different people. My work focuses on machine and deep learning, because I think those are the technologies most conducive to a paradigm shift. I'll spare you the platitudes about AI's potential transformative effects, but it is worth noting that deep learning, especially in its unstructured form, can detect patterns in large data sets in a way humans can't. I'll let my comp sci colleagues unpack—or debate—this assertion.

Back to my point about the past:

- Machine and deep learning systems feed on existing data. Unchecked, they tend to reproduce and amplify existing bias. The most concerning examples sit in the criminal justice system, from predictive policing to bail determinations. Note that the latter uses a crude statistical analysis rather than complex deep learning system, but the argument stands: considering 'criminality' factors without a critical understanding of the racial and socio-economic constructs biasing the data perpetuates inequality.

- Computer science has a major white guy problem. It's important to acknowledge laudable initiatives to organize POC, non-binary and other folks, but generally AI is still designed by people who are the norm. A case in point is the lower accuracy of facial recognition systems on black and brown faces,¹ especially women's. Similarly, might a diverse team prevented the gorilla mishap?² To note: the company simply deleted the gorilla search results³ rather than address the problem. There's an interesting tangential discussion about when (in)visibility is power, depending on whether AI is used in repressive contexts or to provide services. Spoiler alert: marginalized communities are overrepresented in law enforcement datasets due to over-policing. If we want AI to stop replaying the same scenario, it's time to flip the script and get a diversity of people involved upstream. Caveat: I'm also conscious/weary of the limitations of positionality, i.e. demanding that the token representative of XYZ bear the burden of defending a whole community. I think it's everyone's job, particularly those who are more privileged—a burden of proof of sorts.
- If systems are imposed top-down, marginalized/disenfranchised communities will continue to be the testbeds for oppressive practices. See Virginia Eubank's excellent case studies⁴ in the US context. More broadly, AI meshes with surveillance practices in a way that challenges both domestic and international protections on privacy.

Who's Doing What

The private sector drives AI development. While some companies have called for hard regulations or international treaties,⁵ the overwhelming majority lobby for soft ethical standards. Some see corporate social responsibility as a form of ethics-washing.⁶ Compromises might be regulatory sandboxes, and technical standards. [Disclosure: I'm part of the IEEE standard on algorithmic bias.]⁷

Governments are also grappling with this new reality. AI-facilitated election meddling was a wake up call for many. How should nations leverage AI's economic potential, while respecting their human rights engagements? A fair criticism would be that (a) most don't and (b) human rights are a Western construct

¹ *Gender Shades*, <gendershades.org>.

² "Google apologizes after app mistakenly labels Black people 'gorillas,'" *CBC News*, July 3, 2015 <cbc.ca/news/trending/google-photos-black-people-gorillas-1.3135754>.

³ Tom Simonite, "When it comes to gorillas, Google Photos remains blind," *Wired*, January 11, 2018 <wired.com/story/when-it-comes-to-gorillas-google-photos-remains-blind>.

⁴ Virginia Eubanks, *Automating inequality: How high-tech tools profile, police, and punish the poor*, New York: St. Martin's Press, 2018.

⁵ Google, Perspectives on issues in AI governance, *Google AI*, January 2019 <ai.google/perspectives-on-issues-in-AI-governance>.

⁶ Ben Wagner, "Ethics as an escape from regulation: from ethics-washing to ethics-shopping?," The Privacy and Sustainable Computing Lab, 2018 <privacylab.at/wp-content/uploads/2018/07/Ben_Wagner_Ethics-as-an-Escape-from-Regulation_2018_BW9.pdf>.

⁷ Algorithmic Bias Working Group, "P7003 - Algorithmic Bias Considerations," IEEE Standards Association, 2017 <standards.ieee.org/project/7003.html>.

further perpetuating oppression. At any rate, we've seen several nations and regional alliances lead consultations and issue AI strategies to hedge against perceived future risk and seek leadership in what some have called the new space race.

Ways Forward

What about people? I've already alluded to informal alliances of AI workers. Another thread is the [#TechWontBuildIt](#)⁸ phenomenon. While it is not limited to AI projects, the movement opposes the use of technology for immoral purposes, and most of the actual technology involves AI. For example, Amazon employees [denounced](#)⁹ the use of their facial recognition tech and cloud computing platform in support of state surveillance and immigration deportation. There's a longer discussion to be had about the potential and limitations of Valley engineers to make these kinds of decisions, but there is at least some evidence of wider coalition building with existing forms of activism.

One thing that troubles me very much is that these conversations are largely taking place without the people primarily impacted by these technologies. I've had the honor of getting a glimpse of the fierce work of the [Stop LAPD Spying Coalition](#)¹⁰ based in Skid Row. LA is ground zero for predictive policing, and its affected communities have organized a formidable, smart response to tech-facilitated surveillance and data analytics. Coalition work is hard. It requires patience, compromise, and humility. The group must wait for everyone to be caught up and on board before it moves forward. But when it does, it speaks with a thousand voices.

I want to leave us on two more positive notes. First, art has the power to interrogate AI the way policy, law or computer science can't. I particularly enjoy the work of [Trevor Paglen](#),¹¹ and I hope you will too. Back to the idea that AI is a social construct, it is largely shaped uniformly through Western concepts and values. From [Estonian folklore](#)¹² to [Innu grammar](#)¹³ and [Japan's Shinto tradition](#)¹⁴, some concepts are making their way into AI discussions. I look forward to meeting you all and learning about what your perspectives might be.

⁸ "#TechWontBuildIt," Twitter, <twitter.com/hashtag/TechWontBuildIt>.

⁹ Kate Conger, "Amazon workers demand Jeff Bezos cancel face recognition contracts with law enforcement," *Gizmodo*, June 21, 2018 <gizmodo.com/amazon-workers-demand-jeff-bezos-cancel-face-recognition-1827037509>.

¹⁰ Stop LAPD Spying Coalition, <stoplapspying.org>.

¹¹ Caitlin Hu, A MacArthur 'genius' unearthed the secret images that AI uses to make sense of us, *Quartz*, October 22, 2017 <qz.com/1103545/macarthur-genius-trevor-paglen-reveals-what-ai-sees-in-the-human-world/>.

¹² Nathan Heller, Estonia, the digital republic, *The New Yorker*, December 11, 2017 <[newyorker.com/magazine/2017/12/18/estonia-the-digital-republic](https://www.newyorker.com/magazine/2017/12/18/estonia-the-digital-republic)>.

¹³ Karina Kesserwan, Indigenous conceptions of what is human, of what has a spirit and what doesn't, offer a different way of considering AI - and how we relate to each other, *Policy Options*, February 16, 2018 <policyoptions.irpp.org/magazines/february-2018/how-can-indigenous-knowledge-shape-our-view-of-ai/>.

¹⁴ Takeshi Kimura, Robotics and AI in the sociology of religion: A human in imago roboticae, *Social Compass* 64(1), <doi.org/10.1177/0037768616683326>.

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Will Indigenous ways of thinking save AI?

Keoni Mahelona

February 27, 2019

I rarely blog.¹ Not good at it. In 3rd grade I was put into the special reading class. Reading and writing was never my thing, but I always loved math and science and all disciplines derived from those fundamental subjects.

I'm attending an Indigenous AI workshop in Hawai'i. I initially thought this was gonna be a brown nerd meetup 😂 but it's much better than that. The point is to bring together Indigenous and some non-Indigenous doers, makers, and creators to discuss what Indigenous AI is and how it *will* play an important role in the future of AI for humanity.

It's probably best to insert my background² here to justify why you should even consider what I have to say on the matter. I won't do that. Those who know the work I do, which are primarily the communities I serve, know me and respect my whakaaro.³ That's important here—community and trust. I'll try to link that in later (again I'm not a good writer)

So the question I have to answer is “what does the future look like for AI?” I'll answer this question purely based on what I know now from the work I've done over the years in science and engineering as a Kanaka Māoli.

I need to preface that I'll use machine learning and AI interchangeably. Machine learning is a tool that might lead to artificial intelligence, but I don't think that will happen. Peter Lucas Jones⁴ (also attending the workshop) says it best, “Ko te AI tētahi karetao ka taea e tātou te whakakōrero me te whakakanikani. Mā te whakamahi i o tātou rarāunga me ngā kōrero tuku iho, ka tutuki ngā āhutanga o te karetao.” He's basically saying AI is a puppet and we make it do what we want using our data and knowledge. **Puppet**. Until we figure out a way to do AI that isn't only data driven, I don't think we'll reach the singularity.

For me, the future for AI is looking bad. Currently the big corporates (the wealthy, the 1%, the colonizers,

¹ Originally published K. Mahelona (2019) Will indigenous ways of thinking save AI?, *Medium*, <medium.com/@mahelona/what-does-the-future-look-like-for-ai-1ffdf620395>.

² Keoni Mahelona, “Keoni Mahelona - CTO - Te Hiku Media,” *LinkedIn* <linkedin.com/in/kmahelona>

³ Search results for 'keoni mahelona', *Te Hiku Media* <tehiku.nz/search?q=keoni%20mahelona>.

⁴ peterlucasjones, *Twitter*, <twitter.com/peterlucasjones>.

etc.) are leading the way in AI. The current technology trends show that you need vast amounts of data and huge computational power to achieve anything close to ‘AI.’ The scales at which AI works are financially unreachable by most people, and I find this terribly frightening—corporates have more power in AI than sovereign nations (that’s nothing new in colonial history—profits drove much of colonization including the overthrow of the Hawaiian Kingdom with the illegal aid of the U.S. Military).

Having said that, a small non-profit, [Te Hiku Media](http://tehiku.media),⁵ is able to deploy its own [speech recognition software](#)⁶ in the cloud thanks to services like AWS and open source projects like Mozilla’s [DeepSpeech](#).⁷ In this case, machine learning is just another tool to help us do what we need to.

The difference between Te Hiku Media’s ‘A’ and Google’s ‘A’ is that ours is created from our Indigenous language—our data. We collected this data. We look after this data with *tikanga* (cultural practices and values). We will not allow large corporates to have access to this data and use it to exploit us (e.g. serve us ads, sell our language as a service back to us, read our cultural knowledge, etc.). This data is unique to our people, about 600k Māori, the Indigenous people of Aotearoa. We were able to collect this data because the community that shared it with us trusts us. We’ve worked with the community and for the community for the last 30 years. Our data is what makes us unique. It is our own ‘AI,’ the puppet we’ve created to help us achieve our goals and aspirations as a people revitalizing our reo.

This is where data sovereignty—privacy and guardianship over individual data and the data of groups of people—is critically important. If we can maintain that sovereignty, we can prevent the 1% from further colonizing us. But I see the opposite happening. Global corporates like Lionbridge are soliciting Indigenous people to sell them their language—they’ll pay you USD\$45 for 1 hour of your time. They clearly have customers in mind as they’re a globalization and localization company. You see companies like Duolingo and Drops being given our languages for the sake of revitalisation and promotion. And while these companies might be good at heart, they make a profit from selling language services. Do those profits make their way back to our communities from which the language data was taken? Or should we be thanking them as the saviours of our people and they can have our data for free... what ever happened to all our land? Of course the biggest insult comes from DNA companies like Ancestry.com. **YOU PAY THEM to GIVE THEM YOUR GENETIC DATA**, and they have the right to use it as they deem fit. Read the terms and conditions whānau! AI is very much about our data and our knowledge.

Don’t get me wrong. I know society as a whole could benefit when we share genetic data, when we open source knowledge, and when we put data in the public domain. But in a world with so much inequality, racism, genocide, the list goes on and on, clearly only the wealthy are to benefit from these ‘public’ goods and services.

⁵ *Te Hiku Media*, <tehiku.nz/>.

⁶ *kōreromāori.io*, <koreromaori.io>.

⁷ “Mozilla/DeepSpeech: A TensorFlow implementation of Baidu’s DeepSpeech architecture,” *GitHub*, <github.com/mozilla/DeepSpeech>.

I wish AI could change the balance of power, but I can't imagine that happening anytime soon. It's possible that a technological revolution could do the trick. If/when quantum computers (or some computationally equivalent tech) exist at the consumer level, that could give the 99% similar power to the 1%. But history dictates that the technology itself isn't enough to 'do good.' We need laws and ethics around the technology that guides its use for the benefit of all of humanity (and the planet) and not just the wealthy, pale, stale, and males. Chief Sitting Bull made such a keen observation in the 19th century that still stands today, "the white man knows how to make everything, but he does not know how to distribute it." He said this on reflection of the white man's neglect for their poor. With all the Western wealth and technologies in 2019, we still can't solve such a basic problem as poverty.

Western science is only just recognizing how Indigenous knowledge can help our planet, especially in the face of environmental destruction and climate change. I believe how Indigenous people look after their data and knowledge could also help form a framework for AI that works in the best interest of everything contained within our solar system. We personified land and water not because we were hedonistic, demigod worshipers, but because these personifications allowed us to maintain a level of respect and responsibility toward our environments.

I think AI will reaffirm Indigenous knowledge especially around the fringes of science. For example, how are humans affected by the moon, *māramataka*? There's a huge body of traditional knowledge around that and while western science might call this new age mumble jumble (thanks hippies!), the data I've observed—people around me have cycles of behavior aligning with the lunar cycle—is enough for me to say, hey, how could we measure these behaviors and use them to predict patterns? Machine learning could help us understand from a western perspective some of what we already know in an Indigenous context.

For an AI to not be a puppet, I think it needs to be able to do something as basic as caring for the poor *without* being forced to do so. It's one thing to force people to pay taxes and another for people to fundamentally understand the value and joy in paying taxes in a civilised society. I live in New Zealand. I do enjoy paying taxes because I know it means I get free health care and it helps with the conservation and protection of New Zealand ecosystems. I would not enjoy paying taxes in the U.S. because it funds genocide, colonisation, and the wealthy.

But what creates that difference between being forced to do good and having joy in doing good? I suppose that's nurture. How we grow up, the people we are surrounded by, and the communities we belong to all come together to shape *why* we do the things we do. We're a reflection of our environment, or rather the data we're exposed to determines whether we want to do the things we do or whether we're forced to do the things we do. If this is the case, I do not trust the Big Five to build AI, and I do not trust countries like the US and China to build AI. I'd really only trust an AI coming from my own people and the communities of which I am apart. Huh, I'd say the same is true for humans I trust.

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Caleb Moses on the Bleeding Edge

Caleb Moses

June 12, 2019

My name is Caleb Moses. I'm a data scientist from New Zealand, based in Auckland. I'm working for Dragonfly Data Science, and we are working with Te Hiku Media on an exciting body language technology project. So we built the first speech-to-text algorithm in Te Reo Māori. So where you can speak Te Reo, the Māori language, to your computer and then it will be able to transcribe what you're saying in real time. My relationship to AI is that I like to build them.

At university, I did mathematics and when I graduated, I was looking, you know, what are the interesting maths jobs that I could go and apply for. That's how I learned about data science, how I learned about machine learning. I spent about a year, well, no. I spent about a year studying on my own, pretty hardcore, and then another year trying to apply it in my work and, eventually, found myself working at Dragonfly with Te Hiku.

So, personally, I'm more interested in using AI as a tool to create things. Basically, what you do if you are kind of interested in AI and stuff is you find the people who are on the bleeding edge, and you follow them. You follow them on Twitter. You see what work they're doing. You see the stuff that's coming out

of the big labs, DeepMind and Google Brain and Uber and all of the stuff that they're doing, Facebook. Then you try to figure out how you can take those technologies, and then use them on your scale because one of the big problems is not just access to know-how.

Because, generally speaking, at least for someone like me who has a university degree and that sort of thing, there's a lot of resources available online where you can go and learn how to put these things together yourself. I know that for Indigenous communities where university degrees are in short supply, that's not necessarily what could be considered easy access. But at least for me, I've been able to kind of find stuff online, find blog posts, read them, figure out how to put them together, how to run the models myself. I've been able to do that.

But one of the really big gaps between us and Facebook is just computational power. They have so many more computers than we could ... We can scarcely imagine how many computers they have. I remember finding out a few years ago that Google ...that they had built this new kind of hardware to do AI models real fast. I managed to find the source that said that their models ... like they have so much computing power that they can run, like, object recognition across all of Google Maps, like all of the street view for the entire world, they can do it in about two days, which is like, yeah. Yeah, there's no way that a person could do that. There's no way that a university could do that. Yeah, it's totally insane. I've been excited being here at the conference getting to talk with people who have access to more Indigenous data than what I've been able to find so far. Te Hiku themselves have probably, so far as I know, the best collection of at least Māori audio, but probably also Māori text now that we've assembled our language corpus, and I'm definitely looking forward to doing some interesting work with that.

Just a few weeks ago, I was working on a model that basically generated Māori language text. You just feed it all corpus and then it learns how to make new stuff. It went pretty well, but I think it could do a lot better and, yeah, just more work. More work needs to happen in this area. I think that that's another thing that, at least as Indigenous people, we could really kind of leverage that knowledge that we have about where we come from to create new things. And not just new things, but new things that only we can make, or at least that only we should make. So, that's what I'm excited about.

My dream, and I say dream sort of on purpose, I want to see an Indigenous AI research lab that creates things that are Indigenous, yes, but also things that are on the bleeding edge with everyone else. That's what I want to see, so I want to see us making our own image recognition algorithms, and our own AIs that play chess better than humans and all of that sort of stuff. But also using that knowledge to create new things: new ways of interacting with our culture, like building new tech, the stuff that Te Hiku are doing now, voice recognition in Te Reo Māori. We could create our own virtual assistance. We could bake them into video games. People could play video games where they have to say a spell in Te Reo Māori in order for it to work. My idea it would be us kind of creating new technologies that are just out there with the best of them. That's what I think. That's what I think we can do.

What does the future look like for AI?

‘Ōiwi Parker Jones

February 28, 2019

What is Indigenous AI?

I suppose that answering this question will be part of our task at the workshop.

My first thought on the topic was to frame it in terms of AI *by* Indigenous communities and for Indigenous communities. But I have also, more recently, been considering a third way: *AI in dialogue with Indigenous communities*.

I would propose the following working definitions for the three views:

- (1) AI *by* an Indigenous community is AI that is produced by one or more members of an Indigenous community.
- (2) AI *for* an Indigenous community is AI that addresses the needs of one or more Indigenous communities.
- (3) AI *with* an Indigenous community is AI that is in dialogue with one or more Indigenous communities.

Here (1) is intended to denote anything produced *by* a member of an Indigenous community, no matter what. So if a member of an Indigenous community worked on any random topic in machine learning, then, by definition, it would be ‘Indigenous AI’. To me this misses the point. As an Indigenous person who works on AI, I appreciate the sentiment. But if I invented a new kind of LSTM module, should that module be considered ‘Indigenous AI’? We could end up with an incoherent subset of AI research that we call ‘Indigenous AI’ simply because Indigenous people worked on those things.

Definition (2) focuses on the content of the research, rather than on the identity of the researcher. AI *for* an Indigenous community might include some of my own work on Hawaiian NLP. Should any research that touches on topics relevant to an Indigenous community be considered ‘Indigenous AI’? One limitation of (2) is that it does not give agency to our Indigenous communities over what counts as ‘Indigenous AI’. Any company might, for example, develop an application for one of our languages, or for any part of our culture, and then market it as ‘Indigenous AI’. Is that the space that we want to create around this term?

Definition (3) is meant to maximise the pros and minimise the cons of (1) and (2). ‘In dialogue with’ is meant to express the idea that the AI is being actively engaged with by an Indigenous community.

One reason to engage with AI research might be that it is being performed by someone who is already a member of the community, as in (1). Another reason is that the AI research bears on topics that are important to the community, as in (2). But definition (3) leaves the choice about what counts as ‘Indigenous AI’ up to our communities, so that that it should be impossible to hijack the term without buy-in from at least one of our communities.

This, I would suggest, is one way to frame what we will be doing at the workshop: entering into dialogue between research on AI and our Indigenous communities.

From this perspective, then, what does the future of Indigenous AI look like? This question has been posed by the workshop organisers. If I could suggest a few relevant topics, they would include: intellectual property, fairness, and data-efficiency. I hope that we will get to talk more about these things at the workshop. However, if the big idea is to create a community of ideas, then I also look forward to finding out what ‘Indigenous AI’ means together.

I also hope that we might continue to broaden our conversation to include more non-Indigenous AI researchers, with the intention of producing as active an ecosystem of ideas together as we can.

What does the future look like for AI?

Caroline Running Wolf

February 18, 2019

As a preschooler I was fascinated by my friend’s parents, who have been researching and trying to develop an artificial intelligence for a large company since the 1960’s. Whenever I checked in with them, every decade or so, they laughed it off and confided in me that artificial “intelligence” still had a long way to go to fill the shoes of that label.

Today we have achieved a certain level of (almost) artificial intelligence—for clearly delineated, specific tasks. Much of this is still based on computational pattern recognition through large amounts of data. Machines still can’t learn and infer context like humans can. But humans are the ones programming these machines—and it shows.

On a regular basis reports surface about AI powered software with racial or gender bias. Earlier this month a Twitter user posted a screenshot of a suggested correction by Grammarly, an online grammar and contextual spell checking platform. Grammarly had an issue with an “unusual word pair” and suggested to combine the noun “girl” with an adjective other than “successful,” positing that synonyms like “lucky” or “happy” might be more fitting. Facial recognition software jumps from a 1% error margin for light-skinned males to over 35% for dark-skinned women. Despite the obvious bias in current AI

systems, Joy Buolamwini, founder of the Algorithmic Justice League, concludes her February 7, 2019 *Time* article on a hopeful note:

“I am optimistic that there is still time to shift towards building ethical and inclusive AI systems that respect our human dignity and rights. By working to reduce the exclusion overhead and enabling marginalized communities to engage in the development and governance of AI, we can work toward creating systems that embrace full spectrum inclusion. In addition to lawmakers, technologists, and researchers, this journey will require storytellers who embrace the search for truth through art and science. Storytelling has the power to shift perspectives, galvanize change, alter damaging patterns, and reaffirm to others that their experiences matter. That’s why art can explore the emotional, societal, and historical connections of algorithmic bias in ways academic papers and statistics cannot. And as long as stories ground our aspirations, challenge harmful assumptions, and ignite change, I remain hopeful.”¹

I agree with Joy Buolamwini. Despite currently manifested biases and limitations, the future for AI is still malleable. Our workshop is not a day too early!

Today’s implementations of AI are already very promising. Personally, I am excited about the possibilities of AI, especially what speech recognition, Natural Language Processing (NLP) and chat bots offer for the revitalization of endangered Indigenous languages. This is the field that I am passionate about and I am willing to recruit the help of any technology available for this goal. I realize that the amount of data needed for NLP to generate speech and interactions for Indigenous languages are a major hurdle—but just imagine the possibilities!

Some endangered Indigenous languages have only a handful of fluent speakers left. These speakers are elderly. Our time with them is limited and we have to use it wisely. We shouldn’t waste their energy and knowledge by making them teach language beginners or having them translate individual words for a dictionary. Technology can assist with these simple tasks. In the future, home assistants could be programmed to recognize and respond in Indigenous languages, allowing language learners to apply and practice their language skills. Real-time translation could translate websites and social media as well as dub TV shows and movies. We could interact with video game characters in our Indigenous language, engaging in human-like conversations. With the help of current and future AI technologies we can build language tools that expand our everyday usage of Indigenous languages.

No technology can replace humans and true human interaction but just like other technologies that came before it, artificial intelligence can change our lives. My hope is that AI will also have a major effect on the reclamation of our Indigenous languages.

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¹ Joy Buolamwini, “Artificial intelligence has a problem with gender and racial bias. Here’s how to solve it,” *Time*, February 7, 2019 <time.com/5520558/artificial-intelligence-racial-gender-bias>.

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What does the future look like for AI?

Michael Running Wolf

February 21, 2019

The future is the continuing proliferation and accessibility of Machine Learning (ML). Though the fundamental math and technology has not changed, the access and relative ease to create advanced AI systems has. A mere generation ago custom built supercomputers, and millions of dollars of investment, was the minimal entry fee to use ML. Now, in addition to the advent of the Open Source Software (OSS) movement, ML is consumer grade. One could build a reasonable ML computer with top of the line software tooling for less than \$1,000! Even that is not strictly necessary, all you need is a web browser to access cloud computing. One could, for a fee, deploy a supercomputer cluster within minutes. For Indigenous nations, this access is at once an opportunity and risk.

The AI tooling to suppress Native activists, protecting sacred lands, is easily purchased by antagonistic special interests. One not need be a well financed national state, small agencies can easily license facial recognition software to monitor 'radical environmentalists' protecting their sacred lands from exploitation. Advanced facial recognition turns any phone into a potential spy while social media photo platforms are susceptible to analysis. Though our privacy is at risk, the benefits outway the risk.

Every internet user is a few minutes away from deploying their very own ML infrastructure and a wealth of research. TensorFlow, the most popular ML framework for instance, is freely available and gives community researchers access to millions of dollars of research development investment. We are limited only by time and skill.

Initially, a tribe's community researchers could collect the decades of anthropological and linguistic research collected in mountainous digital archives. A researcher can expect to barely scratch the surface of this knowledge if they diligently read every word. However, with advanced text analysis one can quickly mine the knowledge to rediscover lost insights into their own tribe. These insights can then form the building blocks for advanced cultural and linguistic revitalization tooling.

For example, one could textmine the Hawaiian news archive, the Papakilo Database, and build a statistical language corpus. With this corpus one could train recognition and generative ML systems, i.e. a way of validating proper Hawaiian grammar while also creating a mechanism to generate new sentences. With these tools in hand one can create a Hawaiian chatbot! With phonemes and audio

recognition you are inches away from creating an Indigenous Voice AI similar to Apple Siri or Google Assistant. Imagine Virtual Reality worlds populated by intelligent Hawaiian language speakers wanting nothing more than to teach you a new language. Everyone needs an infinitely patient Indigenous personal language teacher.

Despite the risk, ML offers opportunity for Indigenous communities. In fact we have little choice, Machine Learning will be leveraged against us or by us.

An Urban Mohawk Woman Who Loves Her Cyberpunk Avatar Envisions The Future Of AI

Skawennati

2019-02-26

Sken:nen,

While I wouldn't call myself a Trekkie, I am a Star Trek fan. My favourite series was *The Next Generation*. I love how Star Trek portrays the future: filled with space-faring human/alien half-breeds and higher intelligences, yet governed by the Prime Directive, which privileged knowledge exchange over slavery or other resource extraction. Mr. Data was the show's portrayal of Artificial Intelligence. Housed in a humanoid cyborg body (some would say he's an android—but not I), he could do many things that only the computers in previous iterations of the show could do, such as scan a planet for life forms.

The majority of my ideas about AI come from fictional books and movies like *Neuromancer* and *The Terminator*. Most recently, I've become fascinated by the portrayal of the AI from the Netflix series *Travellers*. *The Director*, as it is known, is revered by the people of the future as if it were a god. It (and it is emphatically an "It") only shows up in computer code (although sometimes, if absolutely necessary, it can inhabit a child's body). Through the omni-present surveillance devices of contemporary life, as well as the time travelling agents sent to present-day Earth, *The Director* is able to see all. Its job is to figure out what events in the past should be altered or avoided so that the Earth does not become the barren wasteland it is in the future where it is from.

The AIs of today are much less exciting than the AIs of fiction. As Nick Heath of ZDNet says, in an informative article called "[What is AI? Everything you need to know about Artificial Intelligence](#)":¹ "AI is ubiquitous today, used to recommend what you should buy next online, to understand what you say to

¹ Nick Heath, "What is AI? Everything you need to know about artificial intelligence," *ZDNet*, February 12, 2018 <zdnet.com/article/what-is-ai-everything-you-need-to-know-about-artificial-intelligence/>.

virtual assistants, ... to recognise who and what is in a photo, to spot spam, or detect credit card fraud.”

I am happy that Gmail’s AI filters out my spam, and my bank sends me a new card when some thief gets their hands on my number. For these AIs I am thankful. I do sometimes wonder, however, what we might be missing out on. It seems like the AI-makers think that it’s a small price to pay if one real email gets lost in the spam. But what if that is the golden email?

I recently met an artist who is using AI to create paintings (reading their blog reminds me of how little I know about real-life AI and machine learning. Sorry folks.). They are using a machine-learning algorithm with multiple discriminators to generate unique works of art. What I understand from that, as well as from a conversation I had with them, is that the AI is composing the image, selecting the colours, determining the style, and ensuring technical merit. “But that’s all the fun stuff!” I said to them in dismay. And why in the world do they want to put artists out of work?

You asked us what the future looks like for AI.

For one thing, I don’t think AIs will look human, the way the AI child looks in the movie *AI*. I think we are smart enough to avoid that folly. I think they’ll probably become more like avatars that we each customize, like a visual Samantha from *Her*.

Also, I don’t think AIs will want to be human. I read a great quote (that I forgot to cite) that says that “humankind has a massive ego thinking that we are the center of the universe and everything around us must desire us in some capacity,”

Which brings me to this workshop.

I am excited by the idea that we are engaging with AI on our terms, as Indigenous people. I am excited that a platform is being built such that other, non-Indigenous folk might listen to what we have to say on this topic.

The strength of an AI—its very *raison d’être*—is that it can solve complex problems. Perhaps it can solve the problem of social injustice. Maybe it can figure out how to bring about a non-violent revolution.

I have been reading about the history of the confederation of the Haudenosaunee. The three tenets of the Great Law of Peace, which is our constitution, were peace, unity and the good mind. My ancestors had in place a complex system of consensus in order to come to decisions. I wonder if we could feed that info to the AI?

At the very least, we need to program the AI with the Thanksgiving Address, the oral tradition that reminds us of the familial relationships between the earth, water, sky and all the things living there. Most of us Indigenous folk have a similar teaching or ceremony. That ancient message is very similar to Star Trek’s message. As Kyle Sullivan and Katie Boyer of [Trekperitise](#)² say, it is meant to “remind us to

show respect and reverence for all life, and forms of intelligence, whether natural or artificial.”

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² Charles Evans, “Artificial intelligence in Star Trek,” *Redshirts Always Die*, November 4, 2016 <redshirtsalwaysdie.com/2016/11/04/artificial-intelligence-star-trek/>.

6.2

Indigenous Protocol and AI Reading List

The following is a list of resources that workshop participants drew upon in their discussions. It is not comprehensive, and, in fact, is somewhat idiosyncratic.

Indigenous Knowledge + AI and Digital/Computational Technology

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Indigenous Epistemology, Ontology, Cosmology and Ethics

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6.3

Participants' Biographies

Organizers

Prof. Jason Edward Lewis (*Cherokee, Hawaiian and Samoan*) is the University Research Chair in Computational Media and the Indigenous Future Imaginary, at Concordia University, Montreal, Canada. He directs the Initiative for Indigenous Futures and co-directs Aboriginal Territories in Cyberspace and the Skins Workshops on Aboriginal Storytelling and Video Game Design. Lewis' creative work has been recognized with the inaugural Robert Coover Award for Best Work of Electronic Literature, a Prix Ars Electronica Honorable Mention, several imagineNATIVE Best New Media awards and six solo exhibitions. He's the author of numerous chapters in collected editions covering Indigenous technology and digital media, mobile media, video game design, machinima and experimental pedagogy with Indigenous communities. Lewis has worked in a range of industrial technology research settings, including Interval Research, US West's Advanced Technology Group, the Institute for Research on Learning, and Arts Alliance Lab. Lewis was born and raised in northern California.

Angie Abdilla (*Trawlwoolway*) is the founder & CEO of Old Ways, New. Abdilla works across culture, research, strategy and technology, with Country (known as an entity) centring how Indigenous cultural knowledges inform service design and deep technology for both the public and private sectors. Her published research on Indigenous Knowledge Systems, Robotics and Artificial Intelligence was presented at the United Nations Permanent Forum on Indigenous Issues, where she continues this work to inform the rights of future technologies. Abdilla publicly presents and lectures on Human/Technology inter-Relations at the University of Technology Sydney. Abdilla is a Fellow of The Ethics Centre and holds a Bachelor of Arts in Communication.

Dr. 'Ōiwi Parker Jones (*Kanaka Maoli*) is a Research Fellow at the University of Oxford where he works on biological and artificial intelligence in the departments of Neuroscience and Engineering. In

the 1980s, he was among the first children to be raised speaking Hawaiian in two generations. Later, as a graduate student, he worked on the adaptation of big data computing for the often fragmented corpora available in endangered languages—a research programme that he has continued to advance, for example by developing hybrid Deep Learning methods that contribute to the preservation and revitalisation of the Hawaiian language (e.g. Shillingford and Parker Jones 2018). As a postdoc, Dr. Parker Jones trained in systems neuroscience—with an emphasis on applications of machine learning to large-scale brain data. His current research is focused on Brain Computer Interfaces.

Dr. Noelani Arista (*Kanaka Maoli*), Researcher, Writer, Historian, is Associate Professor of Hawaiian and American History at the University of Hawai‘i-Mānoa. Her research and writing focus on Hawaiian religious, legal, and intellectual history. Dr. Arista’s current projects further the persistence of Hawaiian historical knowledge and Hawaiian language textual archives through multiple digital mediums including gaming. Dr. Arista is known for her work in developing new approaches and methods for writing Hawaiian history up from customary modes of keeping Hawaiian knowledge. Her work has also focused on precision in crafting historical contexts as an important first step in approaching the interpretation and translation of Hawaiian language sources. Her work in historiography, the training of Hawaiian intellectuals, as well as translation has prepared her for considering larger questions of cognition, and how artificial intelligence might be created and approached on Hawaiian terms. She mentors many students, instructing them in how to conduct research in Hawaiian language textual archives, and through online digital mediums. She was a contributing author to “Making Kin with Machines,” an essay about Indigenous views on Artificial Intelligence, one of ten award winning essays in the MIT competition, *Resisting Reduction*. Her book *The Kingdom and the Republic: Sovereign Hawai‘i and the Early United States* was published by PENN press in 2019. Her creative projects include the extensive facebook archive of mele, translation and photos that she wrote and compiled, *365 Days of Aloha*.

Suzanne Kite is an Oglála Lakōta performance artist, visual artist, and composer and a PhD candidate at Concordia University and Research Assistant for the Initiative for Indigenous Futures, and a 2019 Trudeau Scholar. Her research is concerned with contemporary Lakota epistemologies through research-creation, computational media, and performance practice. Recently, Kite has been developing a body interface for movement performances, carbon fiber sculptures, immersive video & sound installations.

Michelle Lee Brown is Euskaldun, Miarrtiz area (Côte des Basques) and German/German American, but raised on the lands and waters of the Wampanoag. As a PhD candidate, she studies Indigenous political praxis and futures through Indigenous designers’ video games, graphic novels, and machinima at University of Hawai‘i at Mānoa on the mokupuni of O‘ahu in the Kona moku, part of the traditional and ongoing sovereign territories of the Kānaka Maoli. Brown has published peer-reviewed work on the Never Alone video game, a chapter on immersive media for Routledge’s forthcoming *Handbook on Popular Culture and World Politics*, a chapter on Thunderbird Strike for “*The Women, They Hold the*

Ground": *Indigenous Women's Digital Media in North America* from University of Minnesota Press, and a comic in the recent *Relational Constellation* collection from MSU Press and Native Realities Press. She is currently working on a VR project and completing her dissertation *(Re)coding Survivance: Indigenous Media Science and Relation-Oriented Ontologies*.

Participants

Brent Barron is Director, Public Policy at CIFAR where he is responsible for engaging the policy community around cutting edge science. He played an important role in the development of the Pan-Canadian Artificial Intelligence Strategy, and now oversees CIFAR's AI & Society program, examining the social, ethical, legal, and economic effects of AI. Prior to this role, Barron held a variety of positions in the Ontario Public Service, most recently in the Ministry of Research, Innovation and Science. Brent holds a Master's in Public Policy from the University of Toronto, as well as a Bachelor's in Media Studies from Western University.

Scott Benesiinaabandan is an Anishinaabe intermedia artist that works primarily in digital media, including photography, video, audio, VR and installations. Scott has completed national and international residencies at Parramatta Artist Studios in Australia, Context Gallery in Derry, North of Ireland, and University Lethbridge/Royal Institute of Technology iAIR residency, Initiatives for Indigenous Futures, along with international collaborative projects in both the UK and Ireland. Scott is from Winnipeg and is currently based in Montreal, where he is completing a MFA in Studio Arts at Concordia.

Meredith Coleman received her BA (Hons) in English literature from the University of Winchester. She is an aspiring writer and has a deep-rooted interest in anthropology and sociology, but a lesser grasp of AI and technology studies. Coleman hopes that being involved in this project will help her to gain insight into a different area of academia—one that she have observed from a young age, through her family upbringing and overlaps with degree subjects.

Dr. Ashley Cordes (*Coquille*) is an Assistant Professor at the University of Utah in Indigenous Communication. Her research lies at the intersections of communication, digital media, and Indigenous studies and is attuned to issues of social power and decolonization. Recent work focuses on crypto and land-based currency as media, and on cultural appropriation in electronic dance music contexts. Cordes' work can be found in peer-reviewed journals including *Television & New Media* and *New Media & Society*. She has a professional background in multiplatform journalism and is currently a 2018-2019 American Philosophical Society Digital Knowledge Sharing Fellow, and Chair of the Culture and Education Committee of the Coquille Indian Tribe.

Kaipu (Kaipulaumakaniolono) Baker Hailing from the lush and cascading cliffs of the Ko'olau in the verdant ahupua'a of Kahalu'u on the island of O'ahu a Lua in the center of the Hawai'i archipelago, Kaipulaumakaniolono recognizes first and foremost the cloud banks that bud at the lofty peaks of those sacred cliffs. A graduate of the Kamehameha Schools Kapālama in 2016 and the University of Hawai'i

at Mānoa in 2019 with bachelors in both English Literature and Hawaiian Language, he continues his studies in the MFA for Hawaiian Theatre program at UHM. His work and research focuses on excellence in Mo'olelo Ka'ao, traditional storytelling, and Mele, song and chant. Kaipu has worked as a tutor of Hawaiian language and appeared most notably in the productions of Kamapua'a (2006, 2007, 2008), Lā'ieikawai (2015), and as "Maui" in the Hawaiian language dubbing of Moana (2018). Kaipu practices indigenous futurity in the form of reshaping and remembering traditional narratives, i noho haku ai kanaka maoli i ka mo'olelo maoli o ia lāhui.

Dr. Melanie Cheung is an award-winning neurobiologist from Central North island tribe Ngāti Rangitihi. She is passionate about transforming therapeutic approaches to brain diseases, with less emphasis on drugs, more emphasis on structurally and functionally changing the brain through neuroplasticity-based technologies. Melanie's research is underpinned by a belief that there is significant untapped knowledge and potential within Māori intellectual traditional that has the power to benefit humankind. Subsequently her work has involved intensive Māori community engagement (with elders and families with brain diseases) and development of decolonizing methodologies (incorporating Māori protocols into scientific and clinical practices).

Joel Davison is a Gadigal and Dunghutti man from Sydney Australia. Living culture through an active role in language revitalisation for the Gadigal language, he is also an avid technologist and works at the Commonwealth Bank of Australia as a Robotics Analyst.

Kūpono Duncan is a Native Hawaiian artist from Kailua, O'ahu. His artwork primarily attempts to bridge motifs of the past with experiences in the present, using contemporary mediums. Kūpono has numerous years of experience as a muralist, contributing to pieces on display at the Hawai'i Convention Center, Bishop Museum, Sheraton Waikiki, Mokulē'ia, The Hawai'i Institute of Marine Biology on Moku o Lo'e, and various buildings around Honolulu. He strives continuously to perpetuate his culture through multimedia art.

Rebecca Finlay leads CIFAR's strategy to connect outstanding researchers with thought leaders who thrive on research insights relevant to the future of policy, business, health, and international development. She works with a team of knowledge mobilization experts who specialize in knowledge exchange, government relations, public policy, and innovation. In 2017, they launched CIFAR's AI & Society program that supports the examination of questions AI will pose for all aspects of society such as the economy, ethics, policymaking, philosophy, and the law. Her team also builds partnerships with governments across Canada and internationally. Prior to joining CIFAR, Finlay held leadership roles in research and civil society organizations including as Group Director, Public Affairs and Cancer Control for the Canadian Cancer Society and National Cancer Institute of Canada. She began her career in the private sector building strategic partnerships, including as First Vice President, Financial Institution and Partnership Marketing for Bank One International. Rebecca holds an M.Phil. in Social and Political Sciences from the University of Cambridge.

Sergio Garzon was born in Bogota, Colombia and lives and works in Honolulu, Hawai'i. His paintings and prints consist of abstract figurative narratives of his memories in Colombia focusing on people, culture and the politics of history. The visual contrast of his work comes from living in Colombia during a period of turmoil with Colombia's two predominant rebel groups, The Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army (ELN). His work employs sculpture, video, photography, printmaking, painting, performance and installation, often in unexpected combinations that traverse traditional practice boundaries. He is best at solving visual puzzles through the manipulation of natural bi-products of fire, earth and light.

D Fox Harrell, Ph.D., is Professor of Digital Media & Artificial Intelligence in the Comparative Media Studies Program and Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT. He is the director of the MIT Center for Advanced Virtuality. His research explores the relationship between imagination and computation. His research involves developing new forms of VR, computational narrative, videogaming for social impact, and related digital media forms based in computer science, cognitive science, and digital media arts. The National Science Foundation has recognized Harrell with an NSF CAREER Award for his project "Computing for Advanced Identity Representation." Dr. Harrell holds a Ph.D. in Computer Science and Cognitive Science from the University of California, San Diego. His other degrees include a Master's degree in Interactive Telecommunication from New York University, and a B.F.A. in Art (electronic and time-based media), B.S. in Logic and Computation from Carnegie Mellon University (each with highest honors). He has worked as an interactive television producer and as a game designer. His book *Phantasmal Media: An Approach to Imagination, Computation, and Expression* was published by the MIT Press.

Kekuhi Keali'ikanaka'oleohaililani (*Kanaka'ole 'Ohana-Pele Clan*) is an educator, scholar, dancer, musician, vocalist, composer, and powerful leader, as well as wife, mother, and daughter. She grew up on the slopes of the volcano Mauna A Wakea and Mauna Loa, in the daily influence of Kilauea, regarded as a family ancestor. Fluent in Hawaiian as well as English, educated in Hawaiian tradition and earning advanced degrees in Western universities, she defines what it means to be an Indigenous intellectual in a contemporary world. Through her visionary leadership, she engages Indigenous thought and knowledge to address today's issues through music, chant, and sharing of the spirit.

Megan Kelleher is embarking on her PhD as one of RMIT's Vice Chancellor's Indigenous Pre-Doctoral Fellows in the School of Media and Communication. The working title of her thesis is 'Blockchain, Black chains and the battle for systems sovereignty: mutual solutions for governance using Indigenous Knowledge (IK) systems and Indigenous-controlled protocols within the Blockchain'. The research seeks to explore the logical, structural or architectural synergies – or incompatibilities – between IK systems and Blockchain technologies, and the opportunities to embed IK approaches into second-wave automation. Grounded in her Barada/Baradha and Gabalbara/Kapalbara heritage, the research will be approached from an Indigenous standpoint, contributing to the field from an important Australian

research perspective. Previous to RMIT Megan was at Creative Victoria in Indigenous Partnerships, and in the Department of Premier and Cabinet's Strategic Communication and Protocol Branch.

Maroussia Lévesque is an attorney and researcher with a background in interactive media. She consults for governments, private sectors, and NGOs about the legal and policy implications of emerging technologies. She was the Conceptual Lead at Obx Labs for Experimental Media during her B.F.A in Computation Arts at Concordia University, and researched IP issues at the Center for Genomics and Policy during her B.C.L./LL.B. law degrees from McGill. Maroussia was involved in the Quebec inquiry commission on the electronic surveillance of journalists, and drafted a foreign policy pertaining to AI and human rights for the Digital Inclusion Lab at Global Affairs Canada. She is a member of the Institute of Electrical and Electronics Engineers working group on algorithmic bias and speaks about law in digital spaces in contexts ranging from informal privacy workshops to international conferences and peer-reviewed journals.

Olin Lagon (*Kanaka Maoli*) is a serial social entrepreneur, innovator and community organizer, currently focused on clean energy. He founded multiple companies, nonprofits, and a foundation including one of the first crowdfunding companies which channeled \$100 million to causes worldwide. He holds multiple patents and his designs have been adopted by Global 1000 companies and institutions like MIT. His service includes the U.S. Navy, the Peace Corps, and numerous nonprofits. He is a past Petra Fellow (Center for Community Change) and East West Center Fellow. Part Hawaiian and Filipino and raised in public housing, Lagon lives in Kalihi Valley with his wife and two young sons.

Dr. Jason Leigh is the Director of LAVA: the Laboratory for Advanced Visualization & applications, and Professor of Information & Computer Sciences at the University of Hawai'i at Mānoa. He is also Director Emeritus of the Electronic Visualization Lab and the Software Technologies Research Center at the University of Illinois at Chicago, where he was previously Professor of Computer Science and Affiliated Professor of Communications. In addition he was a Fellow of the Institute for Health Research and Policy at the University of Illinois at Chicago, and has held research appointments at Argonne National Laboratory, and the National Center for Supercomputing Applications. His research expertise includes big data visualization, virtual reality, high performance networking, and video game design. He is co-inventor of the CAVE2 Hybrid Reality Environment, and SAGE: Scalable Amplified Group Environment software, which has been licensed to Mechdyne Corporation and Vadiza Corporation, respectively. In 2010 he initiated a new multi-disciplinary area of research called Human Augmentics which refers to the study of technologies for expanding the capabilities and characteristics of humans. His research has also received numerous press from news media including the *AP News*, *The New York Times*, *Popular Science's Future Of*, *Nova ScienceNow*, *NSF Science Now*, *PBS*, and *Forbes*. Leigh also teaches classes in Software Design, Virtual Reality, Data Visualization and Video Game Design. In 2010 his video game design class enabled the University of Illinois at Chicago to be ranked among the top 50 video game programs in US and Canada.

Keoni Mahelona is currently building Te Reo Māori speech recognition tools including text to speech, speech to text, and measuring pronunciation. Mahelona's main roles are project management and web development, primarily for koreromaori.com and koreromaori.io. They also built the indigenous media platform tehiku.nz which serves as a digital Marae for Te Hiku Media and the five Iwi of Muriwhenua. Their key contribution is the Kaitiakitanga License which serves to guard Indigenous data and IP from misuse while aiming to create opportunities for the advancement of Indigenous peoples.

Caleb Moses (*Aotearoa Māori*) is a Data Scientist hailing from the Hokianga region in the far north of New Zealand. He has a Postgraduate Diploma in Pure Mathematics from the University of Auckland. His work focuses on machine learning, natural language processing, and automation. Moses is currently working with Te Reo Irirangi o te Hiku o te Ika on language technologies for Te Reo Māori, the language of the indigenous people of Aotearoa New Zealand.

Issac Nahuewai 'Ika'aka (Isaac) is a choice taro corm that comes from the rains that sound the *metrosideros polymorpha* flowers of Hilo. Educated at the University of Hawaii at Hilo with a B.A. in Hawaiian Studies and Anthropology, he is currently in the M.A. program studying Hawaiian Language and Literature. On top of being a student, he is also a part-time teacher at Ka Haka 'Ula o Ke'elikōlani, College of Hawaiian Language at UH Hilo and Ke Kula 'o Nāwahīokalani'ōpu'u Public Charter School. Outside of his roles in education, 'Ika'aka loves educating people through musical vibrations; he is a musical director for many bands around Hilo that spread conscious messages through reggae and jazz. He firmly believes that music can be an effective mode to revivify the value of ancestral knowledge and cultural identity in indigenous people.

Kari Noe is both a creative media and software developer originally from Kaua'i, now based in Honolulu, O'ahu. She has earned two bachelor's degrees, one in Computer Science and the other in Animation through the Academy of Creative Media at the University of Hawai'i at Mānoa. Currently she is a Graduate Research Assistant at the Laboratory for Advanced Visualization and Applications (LAVA), pursuing a master's degree in Computer Science. Kari has worked on various projects from creating her own animated film, *Kai and Honua*, to collaborating on a virtual reality Hawaiian navigation application named *Kilo Hōkū*. She specializes in virtual reality and augmented reality research for cultural preservation and is currently working on her thesis, with the working title: *Digitizing Detours, Mapping Hawaiian Knowledge in Virtual Reality*.

Danielle Olson is a PhD student in Electrical Engineering & Computer Science at MIT and works as a Research Assistant in the Imagination, Computation, and Expressions (ICE) Lab within the MIT Computer Science and Artificial Intelligence Laboratory. Olson's research seeks to develop theories and technologies to advance an understanding of embodied identity expression in virtual reality (VR) narratives to reflect the nuance of real-world human interaction. Olson earned her B.S. in Computer Science & Engineering from MIT in 2014, and her S.M. in Electrical Engineering and Computer Science from MIT in 2019. While at MIT, Olson founded *Gique Corporation*, an educational nonprofit

501(c)(3) that exists to inspire and educate youth in STEAM. Following her graduation from MIT, Danielle worked as a Program Manager at the Microsoft New England Research & Development Center from 2014-2016. Danielle also previously worked as Summer Program Coordinator for the MIT Online Science, Technology, and Engineering Community (MOSTEC) in the summer of 2016, prior to returning to MIT as a graduate student.

Archer Pechawis (*Plains Cree*) is a performance, theatre and new media artist, filmmaker, writer, curator and educator born in Alert Bay, BC. He has been a practicing artist since 1984 with a particular interest in the intersection of Plains Cree culture and digital technology, merging "traditional" objects such as hand drums with digital video and audio sampling. His work has been exhibited across Canada, internationally in Paris France and Moscow Russia, and featured in publications such as Fuse Magazine and Canadian Theatre Review. Archer has been the recipient of many Canada Council, British Columbia and Ontario Arts Council awards, and won the Best New Media Award at the 2007 imagineNATIVE Film + Media Arts Festival and Best Experimental Short at imagineNATIVE in 2009. Archer has worked extensively with Native youth since the start of his art practice, originally teaching juggling and theatre, and now digital media and performance. He is currently a member of the Indigenous Routes collective, teaching video game development to Native girls: www.indigenousroutes.ca. Of Cree and European ancestry, he is a member of Mistawasis First Nation, Saskatchewan.

Caroline Running Wolf (*Crow Nation*), née Old Coyote, is an enrolled member of the Apsáalooke Nation (Crow) in Montana, with a Swabian (German) mother and also Pikuni, Oglala, and Ho-Chunk heritage. As the daughter of nomadic parents, she grew up between USA, Canada, and Germany. Thanks to her genuine interest in people and their stories, she is a multilingual Cultural Acclimation Artist dedicated to supporting Indigenous language and culture vitality. After working for over 15 years as a professional nerd herder and business consultant in various fields, Running Wolf co-founded a nonprofit, Buffalo Tongue, with her husband, Michael Running Wolf. Together they create virtual and augmented reality experiences to advocate for Native American voices, languages, and cultures. Running Wolf has a Master's degree in Native American Studies from Montana State University in Bozeman, Montana. She is currently pursuing her PhD in Anthropology at the University of British Columbia in Vancouver, Canada.

Michael Running Wolf (*Northern Cheyenne*) was raised in a rural village in Montana with intermittent water and electricity. Naturally, he now has a Master's of Science in Computer Science. Though he is a published poet, he is a computer nerd at heart. His lifelong goal is to pursue endangered indigenous language revitalization using Augmented Reality and Virtual Reality (AR/VR) technology. He was raised with a grandmother who only spoke his tribal language, Cheyenne, which like many other indigenous languages, is near extinction. By leveraging his advanced degree and technical skills, Running Wolf hopes to strengthen the ecology of thought represented by indigenous languages through immersive technology.

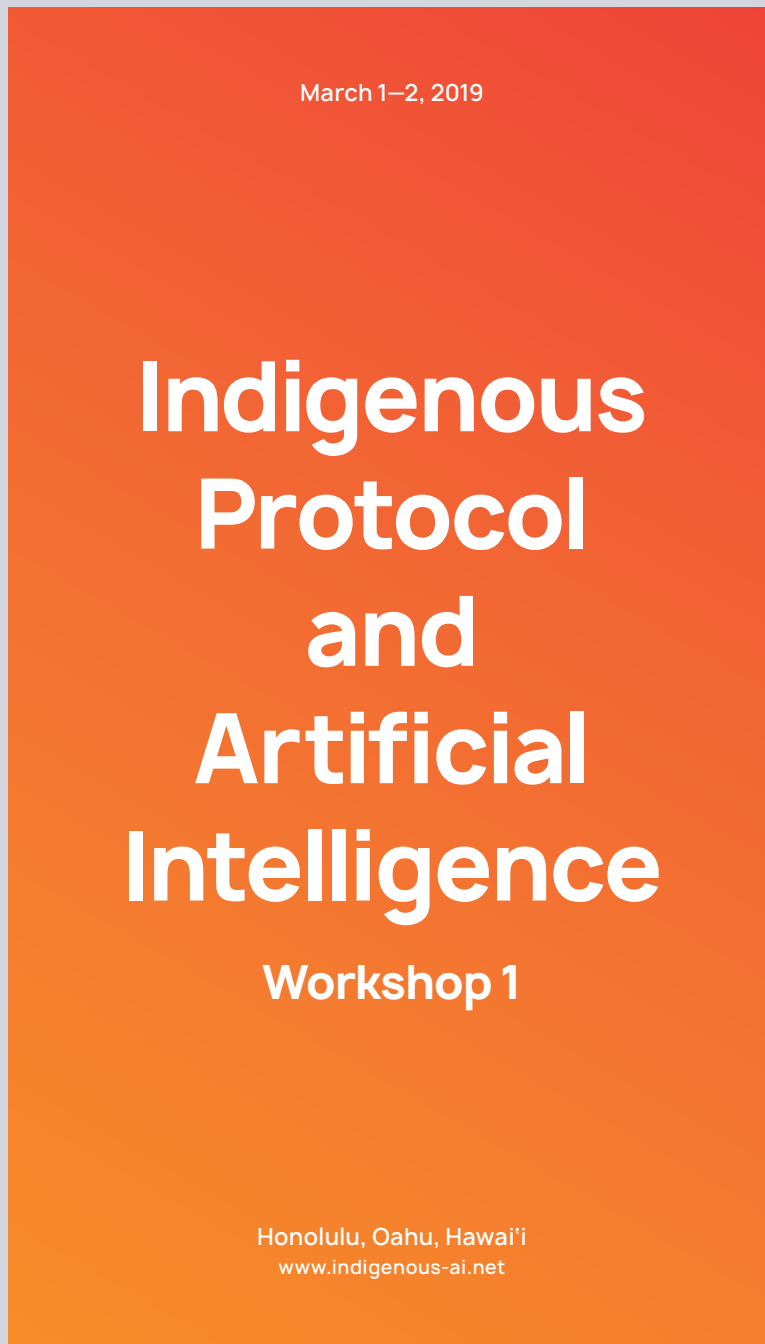
Skawennati makes art that addresses history, the future, and change from her perspective as an urban Kanien'kehá:ka woman and as a cyberpunk avatar. Her work has been widely presented in both group exhibitions and solo shows and is included in public and private collections, such as the National Gallery of Canada and the Musée d'art contemporain de Montréal. Born in Kahnawà:ke Mohawk Territory, Skawennati graduated with a BFA from Concordia University in Montreal, where she is based. She is Co-Director of *Aboriginal Territories in Cyberspace* (AbTeC), a research-creation network of artists and academics who investigate and create Indigenous virtual environments. Their *Skins* workshops in Aboriginal Storytelling and Experimental Digital Media are aimed at empowering youth. In 2015 they launched IIF, the Initiative for Indigenous Futures.

Tyson Seto-Mook received his BS in Electrical Engineering and is currently pursuing a MS in Computer Science from the University of Hawai'i at Mānoa.

Dr. Hēmi Whaanga (*Ngāti Kahungunu, Ngāi Tahu, Ngāti Mamoe, Waitaha*) is an associate professor in Te Pua Wānanga ki te Ao (The Faculty of Māori and Indigenous Studies) at Te Whare Wānanga o Waikato (University of Waikato). Whaanga has worked as a project leader and researcher on a range of projects centred on the revitalisation, protection, distribution, and development of Mātauranga and te reo Māori in a digital world. He incorporates multi-method techniques and methodologies to analyse and develop new Mātauranga in a range of linguistic, cultural, and digital contexts including the design of ethical platforms for digitally managing and distributing Mātauranga, oral traditions, Māori ecological knowledge, ecological taxonomies, and naming protocols, Māori astronomical knowledge and kaitiakitanga. He affiliates to Ngāti Kahungunu through his father, and Ngāi Tahu, Ngāti Mamoe, and Waitaha through his mother.

6.4

Workshop Schedules

A vertical poster with a gradient background from light orange at the top to a darker orange at the bottom. The text is centered and white. At the top, it says 'March 1–2, 2019'. The main title is 'Indigenous Protocol and Artificial Intelligence' in a large, bold, sans-serif font. Below that is 'Workshop 1' in a smaller, bold, sans-serif font. At the bottom, it says 'Honolulu, Oahu, Hawai'i' and 'www.indigenous-ai.net' in a small, sans-serif font.

March 1–2, 2019

**Indigenous
Protocol
and
Artificial
Intelligence**

Workshop 1

Honolulu, Oahu, Hawai'i
www.indigenous-ai.net

The Indigenous Protocol and Artificial Intelligence (A.I.) Workshops will focus on how to advance the theory and practice of next-level A.I. from Indigenous perspectives.

We will consider the following questions:

- **From an Indigenous perspective, what should our relationship with A.I. be?**
- **How can Indigenous epistemologies and ontologies contribute to the global conversation regarding society and A.I.?**
- **How do we broaden discussions regarding the role of technology in society beyond the largely culturally homogenous research labs and Silicon Valley startup culture?**
- **How do we imagine a future with A.I. that contributes to the flourishing of all humans and non-humans?**

Global Organizers

Jason Edward Lewis

Angie Abdilla

‘Ōiwi Parker Jones

RA: Suzanne Kite

Local Organizers

Noelani Arista

RA: Michelle Brown

Flights + Hotels

Brent Barron

Jacqui Sullivan

Venues

LAVA Lab

Keller Hall 102, 2550 Correa Rd
University of Hawai i at Mānoa
Honolulu, HI 96822

Ka Waiwai

#100, 1110 University Ave
Honolulu, HI 96825

Lincoln Hall

1821 East-West Rd
University of Hawai i at Mānoa
Honolulu, HI 96848

Ala Moana Hotel

410 Atkinson Dr
Honolulu, HI 96814

Day 1

Friday
March 1

Location
Ka Waiwai

#100, 1110 University Avenue
Honolulu, HI 96825

8:30am	Light Breakfast
9:00am	Welcome & Introductions
10:30am	Break
11:00am	Protecting Indigenous Cultural Knowledge 1
12:00pm	Lunch
1:30pm	Futuring Exercise
2:30pm	Discuss Blogging Questions
3:30pm	Break
4:00pm	Construct Themes
5:00pm	Protecting Indigenous Cultural Knowledge 2
5:30pm	Closing
6:00pm	Dinner
7:00pm	'Awa & 'Ai Ka Waiwai public event

Day 2
Saturday
March 2

Location
LAVA Lab

Keller Hall 102, 2550 Correa Rd
University of Hawaii 'at Mānoa
Honolulu, HI 96822

8:30am	Light Breakfast
9:00am	Review of Day 1
9:30am	Thematic Breakout Groups Break as needed
12:00pm	Lunch
1:30pm	Share Breakout Results
3:00pm	Break
3:30pm	Next Steps
5:00pm	Protecting Indigenous Cultural Knowledge 3
5:30pm	Closing
7:00pm	Dinner



**Initiative for
Indigenous Futures**

Founding Organizers



OLD WAYS, NEW

CIFAR



CONCORDIA RESEARCH CHAIR
IN COMPUTATIONAL MEDIA & THE
INDIGENOUS FUTURE IMAGINARY

Institutional Supporters

Department of History + College of Arts and Sciences
University of Hawai'i at Mānoa



Hosts



Director: Jason Leigh



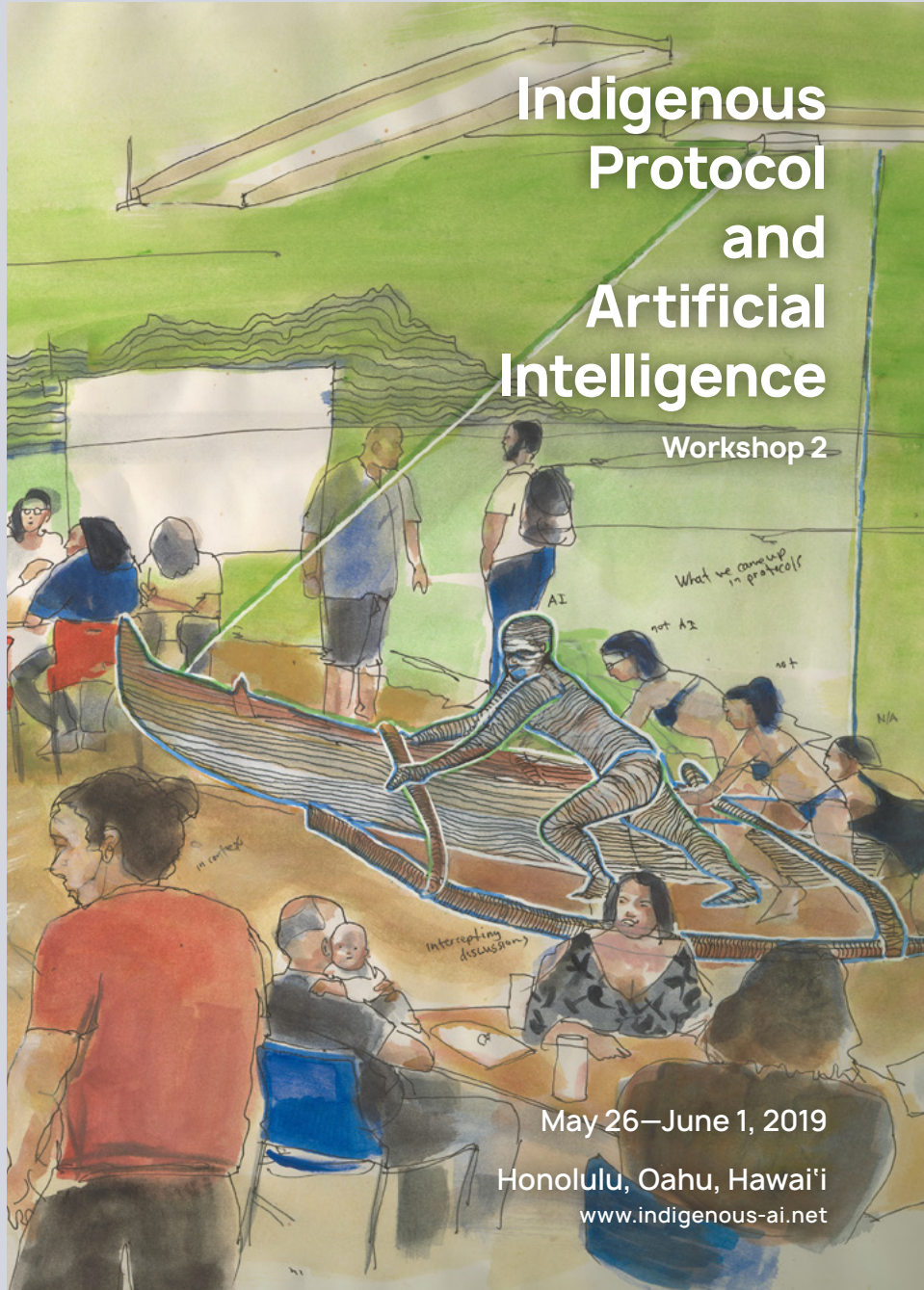
Additional Funding



Social Sciences and
Humanities Research
Council of Canada

Conseil de recherches
en sciences humaines
du Canada

Canada



The Indigenous Protocol and Artificial Intelligence (A.I.) Workshops will develop new conceptual and practical approaches to building the next generation of A.I. systems.

We will consider the following questions:

- **From an Indigenous perspective, what should our relationship with A.I. be?**
- **How can Indigenous epistemologies and ontologies contribute to the global conversation regarding society and A.I.?**
- **How do we broaden discussions regarding the role of technology in society beyond the largely culturally homogenous research labs and Silicon Valley startup culture?**
- **How do we imagine a future with A.I. that contributes to the flourishing of all humans and non-humans?**

Sunday May 26	1:00pm	Welcome
	1:00pm—5:00pm	Review and Organization
	6:00pm	Dinner
Monday / Tuesday May 27 / 28	9:00am—4:00pm	Writing
	4:00pm—5:00pm	Group Review
	6:00pm	Dinner
Wednesday May 29	9:00am—12:00pm	Writing
	12:00pm	Group Outing
Thursday / Friday May 30 / May 31	9:00am—4:00pm	Writing
	4:00pm—5:00pm	Group Review
	6:00pm	Dinner
Saturday June 1	10:00am—1:00pm	Reviewing and Planning
	4:00pm	Open Invite BBQ

Organizers

Jason Edward Lewis

Noelani Arista

Suzanne Kite

Michelle Brown

Series Co-organizers

Jason Edward Lewis

Angie Abdilla

‘Ōiwi Parker Jones

Founding Organizers



Support

Department of History +
College of Arts and Sciences
University of Hawai‘i at Mānoa



SECTION 7

Acknowledgements

7.0

Acknowledgements

The organizers of the Indigenous Protocol and Artificial Intelligence Workshops would like to acknowledge the Canadian Institute for Advanced Research (CIFAR) for providing core funding through its the Pan-Canadian AI Strategy. Our main CIFAR liaison, Brent Barron, was a fruitful collaborator and tireless champion who worked extensively with us to craft workshops that were welcoming of Indigenous bodies and knowledges. We also wish to thank Jacqui Sullivan for the assistance on logistics she provided, and Rebecca Finlay for joining us alongside Brent in the first workshop.

We would also like to acknowledge the following for contributing their time, good minds and/or other resources to make the events a success:

The Initiative for Indigenous Futures and Old Ways, New for providing personnel and resources for the workshop organization and contributing substantial funding.

The Social Sciences and Humanities Research Council of Canada and the Concordia University Research Chair in Computational Media and the Indigenous Future Imaginary for providing additional funding and support.

Ty Kawika Tengan and his assistants, Kaipulaumakaniolono Baker and Isaac ‘Ika‘aka Nāhuewai, for welcoming us to Hawaiian territory on the first day of the first workshop.

Dr. Jason Leigh at the University of Hawai‘i at Mānoa for graciously offering the use of his LAVA lab as well as facilitating the use of the Hawaiian Data Science lab space to host the second day of the first workshop.

Matt Lampert for sharing his substantial reference list on Indigenous knowledge frameworks and technology in African, South American and Asian contexts.

Position Paper Team

Editor: Jason Edward Lewis

Managing Editor: Mikhel Proulx

Editorial Support: Anastasia Erickson

Assistant Editors: Suzanne Kite and Michelle Lee Brown

Editorial Advisors: Dr. Hēmi Whaanga, Dr. Melanie Cheung, and Dr. Noelani Arista

CIFAR

This work was supported by CIFAR through the Pan-Canadian AI Strategy. Learn more about CIFAR at cifar.ca.

About CIFAR

CIFAR is a Canadian-based global charitable organization that convenes extraordinary minds to address the most important questions facing science and humanity.

About the AI & Society program

The AI & Society program is the fourth pillar of the CIFAR Pan-Canadian AI Strategy, a \$125-million investment from the Government of Canada, with the goal of supporting Canada's leadership in machine learning and training. It is also supported by Facebook and the RBC Foundation. The AI & Society workshops are led by CIFAR, in partnership with the Centre national de la recherche scientifique (CNRS) and UK Research and Innovation (UKRI).

Document designed by Aimee Wood.





Gathered at Waiwai. Image by Sergio Garzon, 2019.