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*Ko te mōhiotanga huna o te hunga kore kōrero i te reo Māori*

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## Ko te mōhiotanga huna o te hunga kore kōrero i te reo Māori

Jennifer Hay, Jeanette King, Simon Todd (Ngāi Tahu),  
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### Tuhinga Whakarāpopoto

I tuhia i Oh mā (2020), he nui te mōhiotanga huna o te reo Māori o te hunga kore kōrero i te reo Māori e noho ana i Aotearoa. He nui te puna kupu tuatahi, arā, ko ngā kupu tikanga kore e mōhiotia ai. He nui hoki te mōhiotanga ororeo raupapa, he pūnaha tō rātou me pēhea te noho o ngā oro i te reo Māori. I tēnei pepa ka kitea ētahi putanga anō mō te mōhiotanga whakahirahira o te hunga kore kōrero i te reo Māori. E rua ngā whakamātau i mahia. Ko te kaupapa o te whakamātau tuatahi ko te mōhiotanga wetereo ā-kupu. Ko ngā kitenga: he nui te mōhiotanga wetereo ā-kupu. Ka mōhio pai ngā tāngata kore kōrero ki ngā ngota kupu o te reo Māori. Kei te mōhio hoki rātou kei hea ngā wehenga tino pai mō te whakawehe ngota kupu, arā, ka mōhio rātou i te tikanga mō te wehenga a muri i te mora tuarua. Ko te kaupapa o te whakamātau tuarua ko te mōhiotanga wetereo ā-rerenga. Ko ngā kitenga: kei te mōhio hoki te hunga kore kōrero Māori ki ētahi mea e pā ana ki te wetereo ā-rerenga. I te nuinga o te wā he pai ake ki a rātou tētahi rerenga tika i tētahi rerenga hē. Nō reira, ahakoa kāore e kōrerotia te reo Māori e te nuinga o ngā tāngata e noho ana i Aotearoa, he mīharo kē ō rātou mōhiotanga e pā ana ki ngā kupu, ki ngā ororeo, ki ngā wetereo ā-kupu, me ngā wetereo ā-rerenga hoki o te reo Māori. He tauria pai tēnei o te mōhiotanga huna ka taea i te ao tūroa.

<sup>1</sup> **Ko ngā mihi:** I tuhia te putanga tuatahi o tēnei pepa e Hay hei aromatawai mō te akomanga ‘TREO 403 / He wānanga’ i te Whare Wānanga o Waitaha. Ko Komene Kururangi te kaiako. Ngā mihi nunui ki a Komene mō tana tautoko, mō tana āwhina hoki. Me te aha, kei te ako tonu mātou, ngā kairangahau, i te reo Māori. Ka rere ngā mihi ki ngā kaiako katoa e āwhina ai i a mātou, i tā mātou haerenga reo Māori. Ngā mihi anō ki te Royal Society - Te Apārangi mō ngā pūtea - Marsden 1502 me Marsden 1908. Ka tuku mihi hoki ki ngā tāngata nō Te Kāhui Roro Reo i te Whare Wānanga o Waitaha, ki a Janet Pierrehumbert hoki, mō ā rātou kōrero e pā ana ki tēnei rangahau. Ngā mihi ki a Robert Fromont rāua ko Chun Liang Chan mō te āwhina ā-rorohiko. Ki a Te Puawai Wilson-Leahy rāua ko Tamahou Thoms mō ā rāua mahi mō te whakawehe kupu. Ko ngā mihi nunui ki te hunga i mahi ai i ō mātou whakamātau, ā, ko ngā mihi anō hoki ki ngā kaiarotake o te pepa nei mō ngā kupu tohutohu i tino āwhina i a mātou.

**Ko ngā kaituhi:** I puta tēnei rangahau mai i te pūtea rangahau i tukuna ki a Hay rāua ko King. I whakahaere rāua i ngā whakaritenga mō ngā whakamātau katoa me ngā tirohanga e kōrerohia ana i tēnei pepa. Ko ngā mahi a ngā kaituhi anō: ko te ororeo raupapa: ko Beckner rātou ko Oh, ko Todd; ko te whakamātau wetereo ā-kupu me te tātari i te mahi o ngā tāngata matatau i te reo: ko Todd rāua ko Needle; ko te mahi mō ngā kupu whakawehenga mō ngā tāngata kore kōrero i te reo: ko Panther rātou ko Mattingley, ko Todd, ko Keegan; ko te whakamātau mōhiotanga wetereo ā-rerenga: ko Oh rāua ko Beckner. Ko ngā kauwhata whakamutunga kua whakaritea e Panther rāua ko Mattingley. Nā Hay te tuhinga tuatahi i tuhituhi, nā King rāua ko Keegan i whakatikatika.

## Tino Kupu:

Te reo Māori, mōhiotanga huna, puna kupu tuatahi, wetereo ā-kupu, wetereo ā-rerenga, ororeo raupapa

## English Abstract

This article outlines recent experiments on the implicit knowledge of non-Māori speakers living in New Zealand. It expands on the work of Oh et al. (2020) who show that, despite not knowing the language, non-Māori speakers have impressive phonotactic and lexical knowledge, which has presumably been built through ambient exposure to the language. In this paper, we extend this work by investigating morphological and syntactic knowledge. Experiment 1 asks non-Māori speakers to morphologically segment Māori words. It shows that they have an impressive degree of ability to recognize Māori morphs, and also that their false segmentations are in the locations that are phonotactically most likely to be morpheme boundaries. Experiment 2 asks non-Māori speakers to rate the likelihood that Māori sentences are grammatical. They rate grammatical Māori sentences significantly higher than matched sentences containing the same words in the wrong order. Their error patterns reveal significant sensitivity to legal versus non-legal sentence endings. Taken together, the results reveal that ambient exposure to te reo Māori leads to extensive subconscious knowledge regarding te reo Māori, and provide a strong real-world example of implicit language learning.

## English Keywords

Te reo Māori, implicit knowledge, morphology, syntax, phonotactics, protolexicon

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### 1. He whakataki

#### 1.1 *Ko te mōhiotanga ā-reo i Aotearoa*

Mai i te taenga mai o ngā tauwiwi ki Aotearoa, kua memeha haere te reo Māori. Heoi anō, mai i te tau 1983 kua tīmata te iwi Māori ki te whakaora i te reo Māori. Ko te kōhanga reo tēnei, me te kura kaupapa Māori, me ētahi atu kaupapa pēnei kia whakahokia te reo hei reo kōrerorero i te kāinga, i te hāpori hoki (King, 2018). I te tau 1987 kua whakamanatia te reo hei reo ōkawa mā Aotearoa, ā, mai i taua tau ka kaha haere te tautoko o te kāwanatanga ki te whakaora i te reo. I te kautetanga o te tau 2018, 185,955 ngā tāngata ka āhei ki te kōrero Māori, e 3.9% ōrau noa iho o te iwi whānui (Tatauranga Aotearoa, 2020). Nō reira, ko te nuinga o ngā tāngata i Aotearoa kāore e taea te kōrero Māori (TKK = tāngata kore kōrero). Ahakoa tēnā, ka mōhio tēnei momo ki ētahi kupu Māori. Engari he ruarua ngā kupu e tino mōhio ana. I tētahi whakamātau, ka pānui te tangata i ētahi kupu, e whā hoki ngā tikanga mō ia kupu, ā, me kōwhiri he aha te tino tikanga mō ia kupu. Ko te putanga o taua tatauranga rā, he iti iho i te 100 kupu i mōhio ai e te nuinga o ngā kaiwhakauru (Macalister, 2004).

Ahakoa kāore te hunga TKK i te tino mōhio he aha te tikanga o ērā kupu, ka rongō ai rātou i te reo Māori i hea, i hea. Ka rangona te reo i ngā waiata, i ngā haka, i te reo irirangi, i te pouaka whakaata hoki. Ka rangona hoki te reo i te tīmatanga o ētahi hui, ki te mihimihi, ki te karakia, ki ērā atu tūmomo āhuatanga.

Mā ēnei momo wheako ka taka pea te mōhio mō te reo ki roto i te hinengaro o te tangata? Ahakoa kāore e taea e rātou te kōrero Māori, he mōhiotanga huna kē nō rātou e pā ana

ki te reo Māori? Koia rā te pātai nui o tēnei rangahau. Ki te noho tētahi tangata i Aotearoa, ā, kāore hoki taua tangata e kōrero ana i te reo Māori - he aha kē te momo mōhiotanga o tēnei tangata e pā ana ki te reo Māori?

## 1.2 *Ko te ako huna*

Ko 'te ako huna' te ingoa mō tētahi momo ako. I taua momo ako, ahakoa kāore te tangata e tarai ana ki te ako, ka riro kē ētahi mōhiotanga, ā, kāore hoki te tangata i te mōhio kua tau mai taua mōhiotanga (Reber, 1967; Seger, 1994; Danner mā, 2017). He mea nui te ako huna i te rironga reo o te tamaiti (Gomez & Gerken, 1999).

He nui ngā whakamātau e pā ana ki te ako huna kua whakamahia i te taiwhanga pūtaiao. Anei te raupapa o te mahi: ka haere tētahi kaiwhakauru ki te taiwhanga pūtaiao. Ka rongo te kaiwhakauru i tētahi reo i te wā e mahi ana ia i tētahi atu mahi. Ko tēnei reo he reo i waihangatia e ngā kairangahau, arā, he reo horihori. Kāore te kaiwhakauru i te mōhio me ako ia i taua reo. I muri iho, ka tū tētahi whakamātau kia mārāma ai he aha te mōhiotanga huna o te tangata e pā ana ki taua reo. I ētahi wā, he pakeke te kaiwhakauru, i ētahi wā he tamaiti, he pēpi rānei.

I taua momo rangahau he nui te momo mōhiotanga i akona mō te reo i rangona. Nō te rongo, ka mōhio te tangata ki ētahi mea e pā ana ki ngā ororeo (Vlahou mā, 2009), ki ngā ororeo raupapa (Saffran mā, 1996; Mattys mā, 2001), ki ngā kupu (Frank mā, 2013), ki ngā wetereo ā-kupu (Leung & Williams, 2011; Grey mā, 2014) ki ngā wetereo ā-rerenga anō hoki (Reber, 1967; Rebuschat & Williams, 2012). Kāore te tangata i te mōhio e pā ana ki tōna mōhiotanga, engari ka kitea i ngā whakamātau, he nui ōna mōhiotanga huna.

Ahakoa he nui ngā kitenga i ngā whakamātau i ngā taiwhanga pūtaiao, kāore i te tino mōhiotia he aha te roa o te mau o tēnei momo mōhiotanga. Ka wareware pea ngā kaiwhakauru i taua mōhiotanga i te wā ka wehe atu rātou i te whakamātau? Ko te āhua nei, kāhore rawa! Ki tā Frank mā (2013) ki te rongo te kaiwhakauru ki te reo horihori mō te 10 hāora, ka hipa te tekau tau, ka hoki rātou ki te taiwhanga pūtaiao, ā, ka mōhio tonu rātou ki ētahi o ngā kupu o taua reo! Ka tautoko tēnei putanga ki te whakaaro he nui te mōhiotanga huna, ā, he roa te noho hei kākano i te hinengaro.

Nō reira, ka taea e te kaiwhakauru ngā reo horihori te ako huna i te taiwhanga pūtaiao. Engari ka taea kētia tēnei momo mōhiotanga huna i te ao tūturu, mō ngā reo tūturu? Ka āhei te pātai nei ki te whakautu, nā te mea ka rangona te reo Māori i Aotearoa e ngā tāngata kore kōrero Māori. He mōhiotanga huna nō rātou? He maha ngā āhuatanga o tēnei momo mōhiotanga, ā, e whai ake nei ka kōrerotia ngā rangahau e pā ana ki ētahi o aua āhuatanga.

## 1.3 *Ko te puna kupu tuatahi*

Ki te mōhio tētahi tangata matatau ki tētahi reo he maha hoki ngā kupu o taua reo e mōhiotia e ia. Kei te mōhio hoki ia ki te tikanga o ēnei kupu. Engari, he momo mōhiotanga kē atu i mua i tēnei mōhiotanga. Ka rongo tētahi pēpi i tētahi kupu, ka mōhio pea ia ki te āhua o taua kupu, engari kāore anō kia mōhio ki te tikanga o taua kupu. Ko te ingoa o tēnei momo mōhiotanga ko te Puna Kupu Tuatahi (i te reo Pākehā, te proto-lexicon) (Martin mā, 2013; Ngon mā, 2013; Johnson, 2016). Ko te pātai i Oh mā (2020) ko tēnei: he aha te nui o te 'puna kupu tuatahi' o ngā tāngata o Aotearoa kore mōhio i te reo Māori? He puna kupu tuatahi tō rātou, he mea riro nā te ako huna?

E rua ngā whakamātau i Oh mā. I te whakamātau tuatahi i pānui ngā kaiwhakauru kore kōrero Māori i ētahi kupu. Ko ētahi kupu he kupu tūturu i te reo Māori, ko ētahi atu he kupu horihori. He pai te ororeo raupapa o ngā kupu horihori nei, engari ehara aua kupu i te kupu

tūturu i te reo Māori. Me tohu mai ngā kaiwhakauru mehemea he kupu tūturu, kāore rānei. He āhua pai rātou ki tēnei mahi. Ahakoa kāore rātou i te tino mōhio ki ngā kupu, nā tēnei whakamātau ka kitea ko te āhua o ēnei kupu kei roto rā anō i ō rātou puna kupu tuatahi.

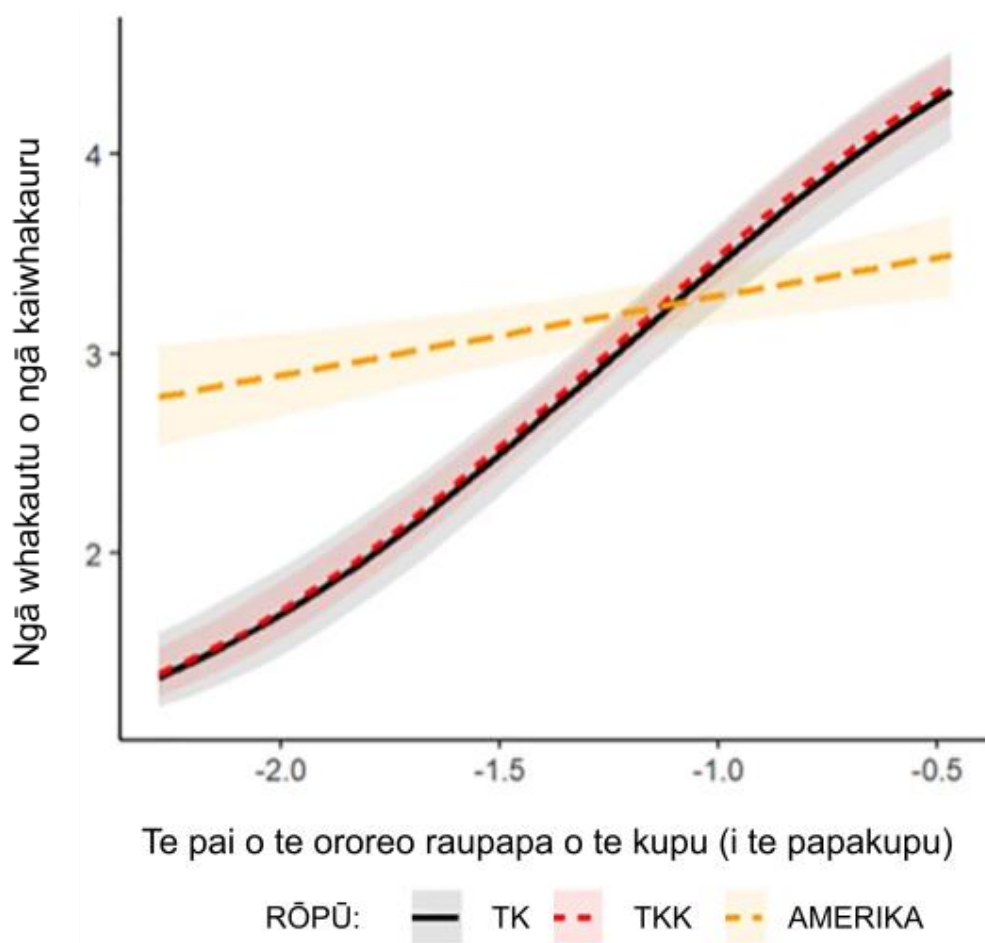
Ko te kaupapa o te whakamātau tuarua, ko te ororeo raupapa. Mēnā ka mōhio koe ki ngā kupu o tētahi reo, ka tūpono he nui ngā tauira o aua kupu i tō hinengaro. Nā tēnei, ka mōhio koe ki ngā āhuatanga kaha kitea i taua reo, me ngā āhuatanga uaua te kite. Ka noho ēnei tatauranga o te reo i ngā hinengaro hoki o ngā kaikōrero matatau o te reo. Hei tauira - i te tīmatanga o ngā kupu Māori, he nui ake ngā kūoro e tīmata ai ki te ‘p’ i ērā kūoro e tīmata ana ki te ‘r’. Engari, i ngā wāhanga o te kupu e whai ake, he nui ake ngā kūoro e tīmata ai ki te ‘r’ i ērā e tīmata ana ki te ‘p’. Nō reira, mehemea ka hangaia he kupu hou, he pai ake te kupu ‘paro’ i te kupu ‘rapo’. Ko te ingoa o ēnei ture, e pā ana ki te raupapa o ngā oro i ngā kupu o te reo, ko te mōhiotanga ororeo raupapa.

Ka kitea i Oh mā (2020), ka taea e te hunga TKK (tāngata kore kōrero) te whakawehe i ngā kupu tūturu i ngā kupu horihori. Nō reira, ka matapaetia he nui hoki tō rātou mōhiotanga e pā ana ki te ororeo raupapa. Ki te whakamātau i tēnei, ka hangaia e Oh mā (2020) ētahi kupu horihori - he pai te ororeo raupapa o ētahi (he tauira: *hūnao*, *ngawhāniti*), he āhua pai ētahi (*eha*, *wīpōkē*), he āhua kino ētahi atu (*aoku*, *upio*). Me arotake te kaiwhakauru i ngā kupu - he pai te kupu hei kupu mō te reo Māori, kāore rānei. Tokotoru ngā momo kaiwhakauru - (1) ko te hunga TKK, (2) ko ngā tāngata matatau ki te reo Māori (TK), me (3) ngā tāngata kei te noho kē ki Amerika. Mehemea he tino pai te mōhiotanga ā-ororeo raupapa o te kaiwhakauru ka tata ki ngā tūponotanga o ngā oro i te reo kua whakatauria mai i ngā kupu i te papakupu o *Te Aka* (Moorfield, 2011). Heoi anō, ka kitea e Oh mā (2020) he rite tonu te mōhiotanga ororeo raupapa o te hunga TKK ki te mōhiotanga o ngā tāngata matatau ki te reo Māori! Ka kitea tēnei i te Kauwhata 1 (mai i Oh mā, 2020).

I te tuaka pae ko te ororeo raupapa o ngā kupu horihori. Ko ngā kupu ororeo raupapa pai rawa kei te taha matau o tēnei tuaka. Kei te taha mauī ko ngā kupu āhua kino te ororeo raupapa. Kei te tuaka pou ko te painga o te kupu ki ngā rōpū. Ko te rārangi karaka te rārangi o ngā kaiwhakauru e noho ana i Amerika, ā, kāore rātou i noho ki Aotearoa. Kāhore kau he tino rerekētanga o te kupu pai i te kupu āhua kino ki tēnei rōpū. I te pango, ko ngā tāngata matatau ki te reo Māori. Ki a rātou, he tino rerekē ngā kupu pai i ngā kupu āhua kino. Anō nei, e hāngai ana ō rātou mōhio ki ngā tatauranga i whakaritea e mātou mai i papakupu o *Te Aka*.

Ko te mea ohore rawa, he rite tonu te mōhiotanga o te hunga TKK (i te whero) ki tērā o ngā tāngata matatau. Nō reira, i Oh mā, kua kitea he tino nui te mōhiotanga o te hunga TKK e pā ana ki ngā kupu, e pā ana hoki ki te ororeo raupapa. Kua whakamahia anō ēnei whakamātau e Panther mā (kia puta mai), ā, kua kitea he hononga i waenganui i te mōhiotanga huna ā-kupu me te mōhiotanga ā-ororeo o ngā kaiwhakauru. Nō reira, he nui ake te puna kupu tuatahi o tētahi tangata, he pai ake tōna mōhiotanga ki te ororeo raupapa.

Engari, he aha te āhua o tēnei puna kupu tuatahi? Ko te whakapae a Oh mā, ko te ngota kē (ehara ko te kupu) te mea e mōhiotia e te hunga TKK. Hei tauira ake, e rua ngā ngota i te kupu ‘kaimoana’: kai | moana. E rua hoki ngā ngota i ngā kupu: whaka|pai, tuhi|a, kati|kati. Nō reira, hei tā Oh mā, kei te mōhio te hunga TKK ki ngā ngota. Engari kāore tēnei whakapae i te tino whakatūturutia.



Kauwhata 1: Ko te pai o te ororeo raupapa o te kupu (i te papakupu) ki ngā whakautu o ngā rōpū e toru. (I Oh mā, 2020 - Creative Commons 4.0

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#### 1.4 Ko ngā pātai o te rangahau nei

E rua ngā tino pātai o te pepa nei. Ko te pātai tuatahi - kei te tika a Oh mā i tō rātou whakapae, kei te mōhio te hunga TKK ki ngā ngota kupu o te reo Māori?

**(1) He aha te mōhiotanga wetereo ā-kupu o te hunga TKK? Arā, ka mōhio rātou ki ngā ngota kupu?**

Waihoki, he aha te mōhiotanga o te hunga TKK ki te whakatakotoranga o ngā kupu i ngā rerenga? Ko tērā te pātai tuarua o te pepa nei.

**(2) He aha te mōhiotanga wetereo ā-rerenga o te hunga TKK? Arā, ka mōhio rātou mēnā he tika te takoto o te rerenga?**

Nō reira, e rua ngā whakamātau i te pepa nei. He whakamātau wetereo ā-kupu, he whakamātau wetereo ā-rerenga. Engari, i mua i te pātai ‘he aha te mōhiotanga wetereo ā-kupu’, me aro ki te wetereo ā-kupu i te reo Māori. He maha, he iti rānei ngā kupu ngota-tahi? Ka tirohia tēnei ināianei.

## 2 Ko te wetereo ā-kupu i te reo Māori

Ahakoia kua rangahaua te wetereo ā-kupu i te reo Māori (Bauer, 1993; Keegan, 1996), kāore hoki he pūnaha kohikohinga o ngā ngota kupu i te reo Māori. Mō ētahi kupu, ka tino kitea ka taea te whakawehe, hei tauira iho, ki te tūmata te kupu ki te ‘whaka-’, ki te ‘kai-’ rānei. Anō hoki, ka tere kitea kāore e taea ētahi kupu te whakawehe, nō te mea he kupu poto, pēnei i te kupu ‘kete’. He kupu “ngāwari” te hanganga o ēnei momo kupu. Engari mō te nuinga o ngā kupu, kāore e tohua i te papakupu mēnā he kupu matatini, he kupu ngota-tahi rānei, he “uaua” aua momo kupu.

Nō rēira, kua hoatu e mātou ngā kupu uaua katoa ki tētahi tangata matatau ki te reo Māori. Ko tana mahi, ko te whakawehewehe i aua kupu. Ko ētahi ka taea te whakawehe, ko ētahi anō kāore i taea. Mehemea ka taea te whakawehe, ka tohu te tangata kei hea te wehenga. E mahia e ia ngā kupu 12,441!

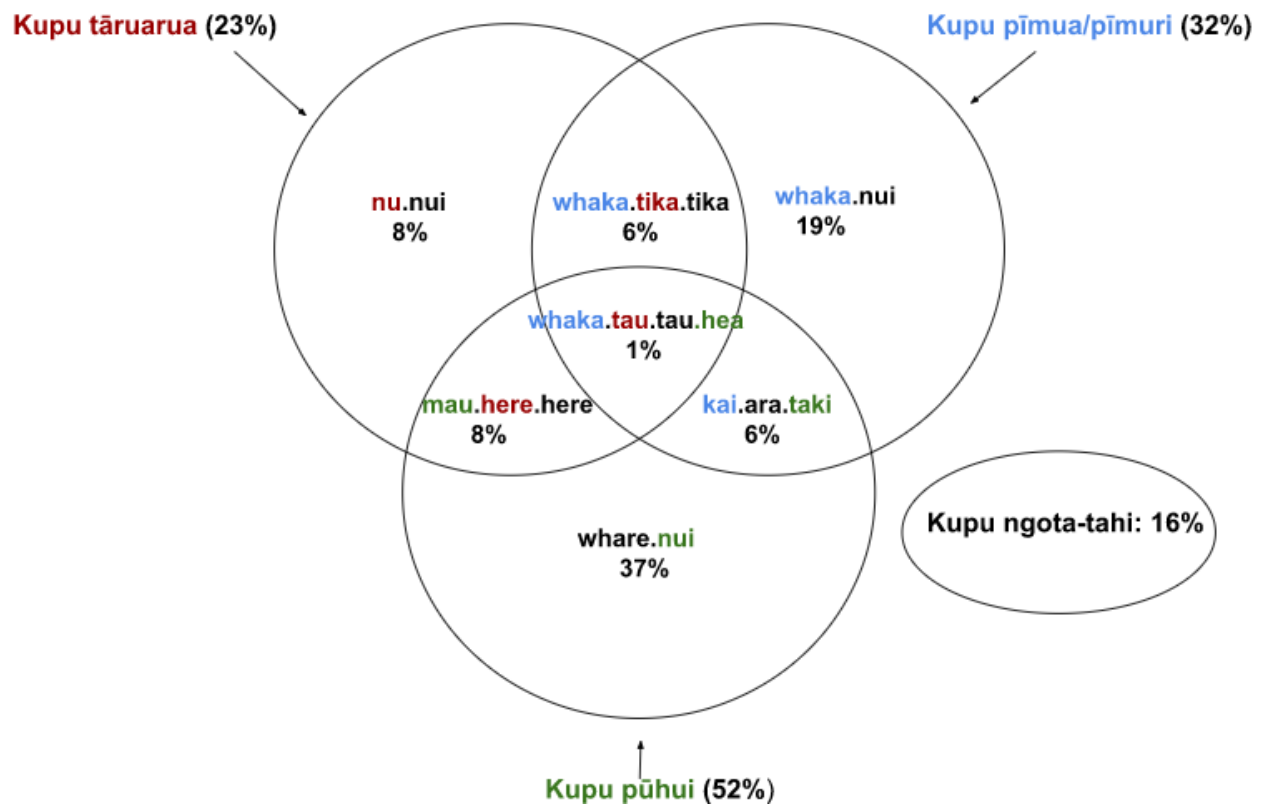
I whakatōpūhia anō ēnei kupu ki ngā kupu ngāwari (mai i te papakupu *Te Aka*) - 19,595 katoa ngā kupu. Ko te pātai e hia ngā kupu matatini, e hia ngā kupu ngota-tahi i *Te Aka*? Ka kitea i te Kauwhata 2, he huhua ngā kupu matatini, ā, o aua kupu matatini nui ake i te hāwhe he kupu pūhui.

Ahakoia he 16% noa iho o ngā kupu i *Te Aka* he kupu ngota-tahi, me whakamārama atu, he rerekē ēnei tatauranga ki ngā tatauranga o ngā kupu e kōrerotia ai i ia rā, i ia rā. I ngā putunga kōrero, e tirohia ai e mātou, ka kitea he kupu ngota-tahi ko te 60% o ngā kupu. He 18% noa iho ngā kupu pūhui. Ko te take, ahakoia he nui ngā kupu pūhui i te papakupu, ā, ehara i te mea ka kōrerotia aua kupu i ia rā, i ia rā. (Anei ētahi tauira o ngā kupu kāore i tino kitea: haukura, pūtiwha). Ahakoia he iti ngā kupu ngota-tahi i te papakupu reo Māori, he kaha kitea aua kupu i te reo kōrerorero o ia rā, o ia rā.

Hei muri iho, ka tono hoki mātou ki tētahi atu tangata kia whakawehe i ngā kupu uaua. Nō reira, tokorua ngā tāngata matatau i whakawehewehe i aua kupu. Anō hoki, kei te mōhio mātou kei hea ngā wehenga e whakaaetia ai, e kore rānei. He nui ngā rerekētanga ki tā rāua mō ngā whakawehenga. Ehara aua rerekētanga i te ohorere ki a mātou. I te reo Pākehā hoki, he nui ngā rerekētanga i ngā whakaaro o ngā kaikōrero e pā ana ki ngā ngota kupu o te reo (Hay mā, 1999; Needle & Pierrehumbert, 2018). Ka tātaritia ngā rerekētanga o te tokorua matatau ki tētahi atu pepa.

Ināianei, ka mōhio mātou ki te āhuatanga o ngā ngota i ngā kupu o te reo Māori - ngā wehenga ngāwari i te papakupu me ngā wehenga uaua i whakaaetia ai e te tokorua matatau i āwhina i a mātou. Ko te pātai nui, ka mōhiotia aua ngota e te hunga TKK i Aotearoa?





**Kauwhata 2:** Te wetereo ā-kupu o ngā kupu katoa i te papakupu *Te Aka* (hei tā tētahi tangata matatau ki te reo Māori).

### 3 Ko te mōhiotanga wetereo ā-kupu

#### 3.1 Ko ngā āhuatanga o te whakamātau tuatahi

He 95 ngā kaiwhakauru (te hunga TKK) i te whakamātau ā-ipurangi tuatahi. He tāngata kore kōrero i te reo Māori rātou katoa, ā, ka noho hoki rātou i Aotearoa. E 4481 ngā kupu i whakamātauria. Mai i aua kupu, kua whakamātauria ngā wehenga o ngā kupu 1176 i whiriwhiria mai i te papakupu *Te Aka* (ngā kupu ngāwari ka tino kitea ka taea te whakawehe). I tirohia hoki ngā wehenga o ngā kupu 1435 anō i whiriwhiria mai i ngā wehenga o te tokorua kōrero Māori (ngā kupu uaua i *Te Aka*).

Tekau ngā momo kupu e kitea ai i te Papataui 1. Ka kitea te tatau o ia momo kupu i te whakamātau katoa i te pou ‘Tatau i te whakamātau katoa’. I te pou ki te matau, ka kitea te tatau o ia momo kupu i kitea ai e ia kaiwhakauru. I kitea e ia kaiwhakauru ngā kupu 240.

Ka kitea i te Whakaahua 1 te mahi o ngā kaiwhakauru. Ka taea e te kaiwhakauru te pāwhiri i waenganui i ngā pū kia whakaaturia kei hea ngā wehenga i te kupu ki ō rātou ake whakaaro. Mēnā ki tōna whakaaro kāore he wehenga i te kupu, me pāwhiri ki roto i ngā taiapa tūtika. Mēnā ki tōna whakaaro he nui ngā wehenga i te kupu, ka taea te tohu e pērā ana (tirohia Needle, Pierrehumbert & Hay, 2022).



**Whakaahua 1: He tauira o tētahi kupu i te whakamātau.**

I te tuatahi, i whiua atu ngā kupu i wāhia ai i muri i ngā orokati i te huinga raraunga. He ruarua ēnei wāhi i roherohea e ngā kaiwhakauru i te whakamātau - e 2.4% noa iho. Mehemea kei te mōhio koe ki ētahi āhuatanga e pā ana ki te ororeo o te reo Māori, ka mōhio koe kāore e taea te wāhi te tū i muri i te orokati. Nō reira, he tohu anō tēnei o te mōhioanga ā-ororeo o te hunga kore kōrero i te reo Māori.

Kātahi, i muri i ia oro puare i ia kupu i te huinga raraunga, i whakapae mātou - he wehenga tēnei i waenganui i ngā ngota kupu? E toru ngā whakautu:

*Āe: He wehenga tēnei i whakaritea e mātou ki roto i ngā kupu ngāwari, i whakaae rānei te tokorua matatau e pā ana ki tēnei wehenga.*

*Kāo. Kāore he wehenga i whakaritea e mātou ki roto i ngā kupu ngāwari, i whakaae rānei te tokorua matatau e pā ana ki taua wehenga-kore.*

*Taupatupatu: Kāore te tokorua matatau i whakaae e pā ana ki tētahi wehenga. E ai ki tētahi - āe, he wehenga, e ai ki tētahi atu, kāo.*

### 3.2 Ko ngā kitenga

I konei ka whakamārama mātou mō te mora i te reo Māori. Ki ngā tohunga wetewete reo ka whai tikanga te ‘mora’ i te reo Māori (Bauer 1981, 1993; de Lacy 2004). Kotahi noa iho te oro puare poto i ia mora. Nō reira, kotahi te mora i ēnei tauira: ‘ka, te, o’; e rua i ēnei: ‘tū, pao, ua, tata’. Ko te tikanga, mēnā he kupu kiko te kupu i te reo Māori (ko ngā kupu ingoa, ko ngā kupu mahi, me ērā atu momo kupu), me nui ake i te kotahi mora. Kei te pai mēnā kotahi te mora i te kupu wetereo, engari kāore i te pai mēnā kotahi te mora anake i te kupu kiko. E ai ki a Krupa (1968), e rua ngā mora i te nuinga o ngā ngota kupu i te reo Māori.

I ō mātou kitenga i te whakamātau tuatahi, kei te tū te nuinga o ngā wehenga ‘āe’ o ngā kaiwhakauru i muri i ngā mora e rua i te tīmatanga o te kupu (80.1%). Nō reira, ka pātaitia ngā pātai e rua:

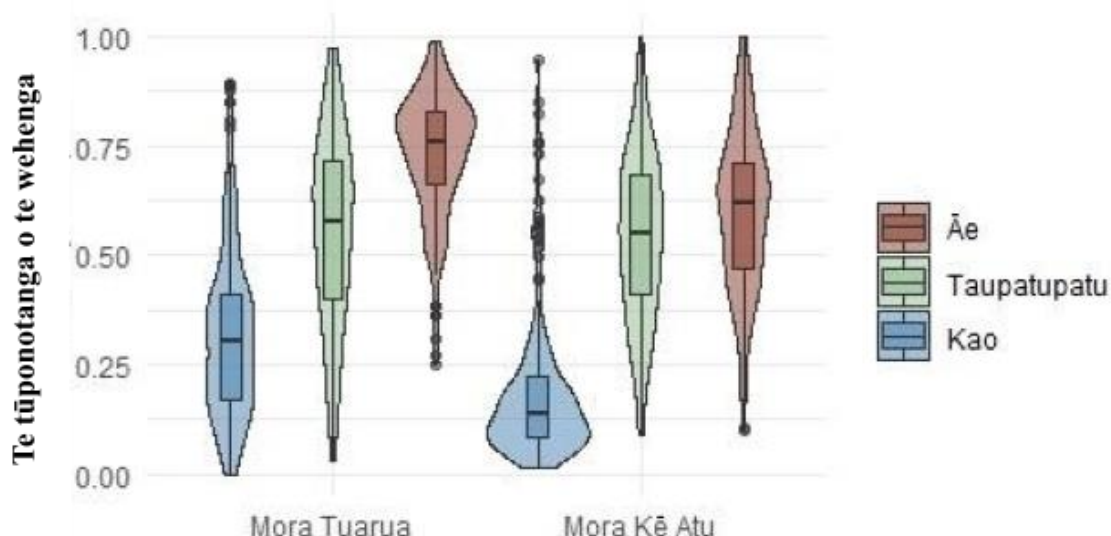
- (1) Kei te mōhio te hunga TKK, ko te roherohe a muri i te mora tuarua o te kupu he wehenga pai mō te roherohe i te ngota kupu?
- (2) Kei te mōhio te hunga TKK ki ngā ngota kupu o te reo?

**Papatau 1: Ngā momo kupu i te whakamātau ā-kupu**

<b>Ingoa Māori</b>	<b>Ingoa Pākeha</b>	<b>Tauira</b>	<b>Tatau i te whakamātau katoa</b>	<b>Tatau ki ia kaiwhakauru</b>
kupu mora-toru	trimoraic	whiore, takoto	473	19
waewae kūoro rua	bimoraic disyllable	oma, niho	625	38
kupu tāruarua mauī (poto)	left partial reduplication (short)	manamanahau, nunui	193	8
kupu tāruarua mauī (roa)	left partial reduplication (long)	tātari, kākano	40	2
kupu tāruarua matau	right partial reduplication	pōrearea, hāereere	302	12
kupu tāruarua katoa	full reduplication	wīwī, whiriwhiri	440	18
kupu whaka-	whaka-	whakawehi, whakawā	297	12
kupu mora-maha	polymoraic	māhū, maioha, matakite	1337	100
kupu ingoa	nominal	tīmatatanga, moenga	248	10
hāngū	passive	tapahia, katia	526	21

Ka kitea ngā whakautu i te Kauwhata 3. Ko ngā wāhi mō te mora tuarua kei te taha mauī, ko ngā wāhi mō te mora kē atu kei te taha matau. I te tuaka pou, ka kitea te tūponotanga o te wehenga i ia wāhi. Nō reira, mēnā ka mōhio te hunga TKK ko te roherohe a muri i te mora tuarua o te kupu he wehenga pai mō te roherohe, he nui ake ngā tatauranga i te taha mauī i ērā o te taha matau. Ka kitea, āe, koia te otinga, ka mōhio rātou. Nō reira, ko te whakautu mō te pātai tuatahi, ko ‘āe’, kei te mōhio te hunga TKK he wāhi pai mō te whakawehe kupu ka tū a muri i te mora tuarua o te kupu.

Anō hoki, mēnā ka mōhio te hunga TKK kei hea ngā wehenga tika - arā, kei hea ngā ngota kupu o te reo - he nui ake ngā wehenga i ngā wāhi ‘āe’ i ngā wāhi ‘kāo’, ā, ka noho ngā wāhi taupatupatu ki waenganui. Ka kitea hoki, ka tino tautoko te hunga TKK ki ngā wāhanga e toru kua whakaritea e mātou, arā, he pai rawa ki a rātou ngā wehenga kua tohungia hei ‘āe’. Nō reira, he mārama te whakautu ki te pātai tuarua, e pā ana ki te mōhiotanga o ngā ngota kupu. Kei te mōhio te hunga TKK kei hea ngā ngota i te nuinga o ngā kupu.



### Kauwhata 3: Ko ngā wehenga i roherohea e ngā kaiwhakauru.

(Ko ngā wehenga i whakaritea a muri i te mora tuarua kei te taha mauī, ko ngā wehenga i whakaritea i waho atu kei te taha matau. Ko te pātohu:

**Āe/whero:** Āe: He wehenga tēnei i whakaritea e mātou ki roto i ngā kupu ngāwari, i whakaae rānei te tokorua matatau e pā ana ki taua wehenga;

**Kāo/kahurangi:** Kāo. Kāore he wehenga i whakaritea e mātou ki roto i ngā kupu ngāwari, i whakaae rānei te tokorua matatau e pā ana ki taua wehenga-kore;

**Taupatupatu/kākāriki:** Taupatupatu: Kāore te tokorua matatau i whakaae e pā ana ki tētahi wehenga. E ai ki tētahi - āe, he wehenga, e ai ki tētahi atu, kāo.)

I tēnei whakamātau ka kitea ngā mea e toru. (1) Kei te tino mōhio te hunga TKK kāore e taea te whakawehe kupu i muri i te orokati; (2) Kei te mōhio te hunga TKK, i te nuinga o te wā ko te wāhi roherohe ngota kupu kei muri i te mora tuarua. (3) Kei te mōhio hoki rātou ki ngā ngota kupu tūturu i te reo Māori, inā hoki ka whakaae rātou i ngā wehenga i whakaritea e mātou. Ko te āhua nei, he nui te mōhioanga wetereo ā-kupu nō te hunga TKK. Ināianei ka huri tātou ki te mōhioanga wetereo ā-rerenga.

## 4 Ko te mōhioanga wetereo ā-rerenga

### 4.1 Ko ngā āhuatanga o te whakamātau tuarua

E 85 ngā tāngata i te whakamātau nei. I mahia te whakamātau i te ipurangi. I noho ngā tāngata katoa i Aotearoa, ā, kāore i taea e rātou te reo Māori te kōrero. E rua ngā whakamātau i mahia ai e ia tangata, engari ko te tuhinga i tēnei pepa mō te whakamātau tuarua anake. Ko te whakamātau tuatahi i mahia e rātou ko te whakamātau tuatahi i Oh mā (2020). Mēnā kei te hiahia koe ki te mōhio mō ngā āhuatanga e pā ana ki aua tāngata, he whakamāramatanga i taua pepa.

**Papatau 2: Ko ngā rerenga i te whakamātau tuarua**

RERENGA TIKA	RERENGA HĒ
nō tō irāmutu ērā taiepa	irāmutu nō tō taiepa ērā
i tapaina ēnei poutama	tapaina i poutama ēnei
mō ēnei pouako ēnā mōkete	pouako mō ēnei mōkete ēnā
kua maroke ēnā otaota	maroke kua otaota ēnā
e werohia ana ērā pepeha	werohia e ana pepeha ērā
i waipuke i ngā tāhuna	waipuke i tāhuna i ngā
hei te tuanui ana paihere	tuanui hei te paihere ana
nā te tokoiti tēnā maitai	tokoiti nā te maitai tēnā
me manako ki te paipera	manako me paipera ki te
i te maranga tēnei kaupoi	maranga i te kaupoi tēnei
ka rūkahu tana amorangi	rūkahu ka amorangi tana
kia horaina ō raukura	horaina kia raukura ō
mā ngā pouaru ana kawenga	pouaru mā ngā kawenga ana
i te kāpata ngā taiaha	kāpata i te taiaha ngā
kei te kohete tērā koroheke	kohete kei te koroheke tērā
he māhaki aua wātene	māhaki he wātene aua
kei tumeke āku māhanga	tumeke kei māhanga āku
ka panaia ki te kāuta	panaia ka kāuta ki te
ko taku irāmutu he taikaha	irāmutu ko taku taikaha he
kei te whārua aua kereru	whārua kei te kererū aua

I hangaia e mātou ngā rerenga e 20. Ko ngā kupu kiko i ngā rerenga ehara i te mea he kupu i kitea i ia rā i ia rā, nō reira, kāore i mōhiotia ēnei kupu e ngā kaiwhakauru. I whakahurihia te takoto o ngā kupu kiko me ngā kupu wetereo. Ka kitea ngā rerenga katoa i te Papatau 2. I pānui ia tangata i ngā rerenga katoa. E 20 ngā rerenga tika, e 20 atu ngā rerenga

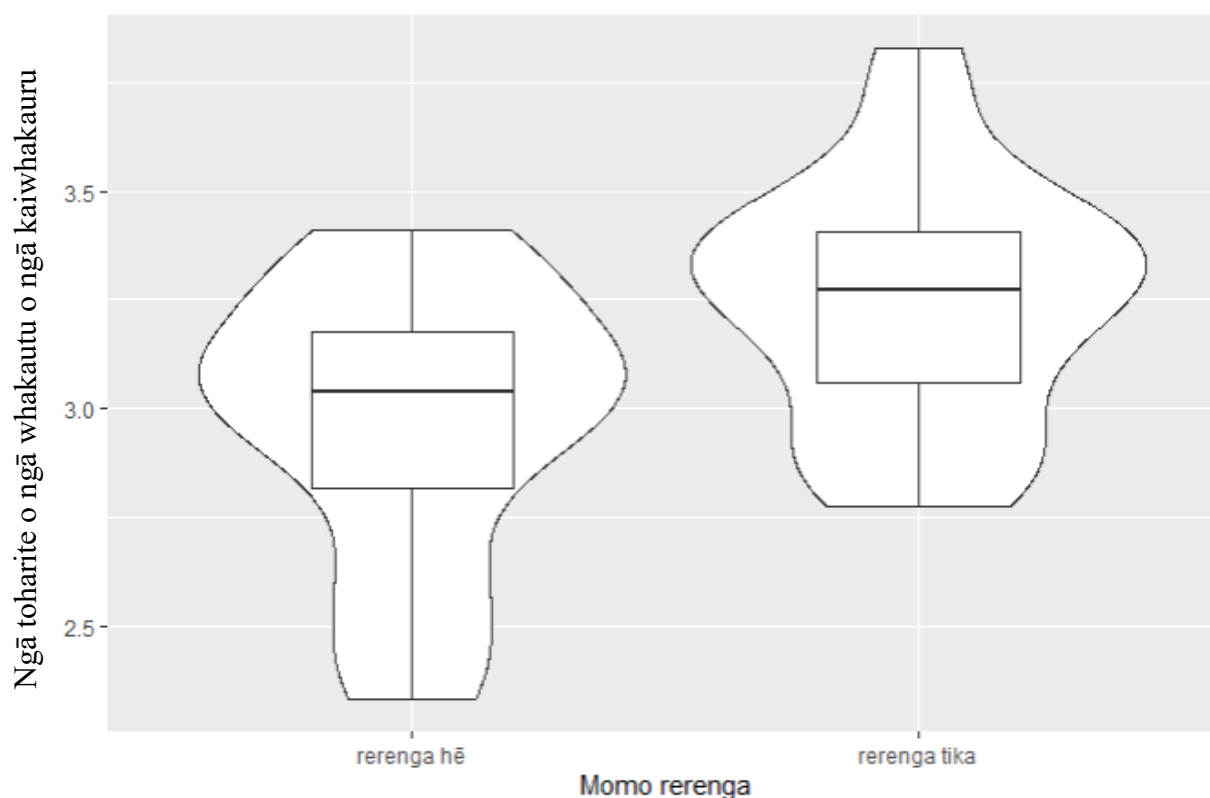
hē. He rerekē te whakaputanga o ngā rerenga ki ia kaiwhakauru, ki ia kaiwhakauru. Mō ia rerenga, ka whakautua te pātai, he rerenga tika i te reo Māori, kāo rānei? I whakautu rātou mā tētahi āwhata. E 5 ngā tauwhata i taua āwhata, mai i te 1 (kāore) ki te 5 (āe).

Mēnā ka mōhio te hunga TKK ki ētahi mea e pā ana ki te wetereo ā-rerenga i te reo Māori, ka mōhio rātou ko ēhea ngā rerenga tika, ko ēhea ngā rerenga hē.

#### 4.2 Ko ngā kitenga

Kāore te hunga TKK i tino māia ki tēnei whakamātau. Ko te 39% o ngā whakautu i te waenga o te āwhata - ko te '3'. Ko te 8% noa iho ngā '1' (kāore). Ko te 9% te '5' (āe). Kāore ngā kaiwhakauru i te tino mōhio ko ēhea ngā rerenga tika, ko ēhea ngā rerenga hē.

I taturia te toharite mō ia tangata mō ngā rerenga tika me ngā rerenga hē hoki. Ka kitea i te Kauwhata 4. Ahakoa ka tata ki te '3' ngā toharite katoa, he nui ake ngā toharite mō ngā rerenga tika i ngā rerenga hē (Wilcoxon rank sum test,  $p < .02$ ). Ko tēnei te āhua mō te nuinga o ngā kaiwhakauru, he nui ake te toharite o tō rātou whakautu ki ngā rerenga tika. Ahakoa kāore te hunga TKK i tino whakawehe i ngā rerenga tika i ngā rerenga hē, engari kei te mōhio ki ētahi āhuatanga e pā ana ki te wetereo ā-rerenga o te reo Māori.

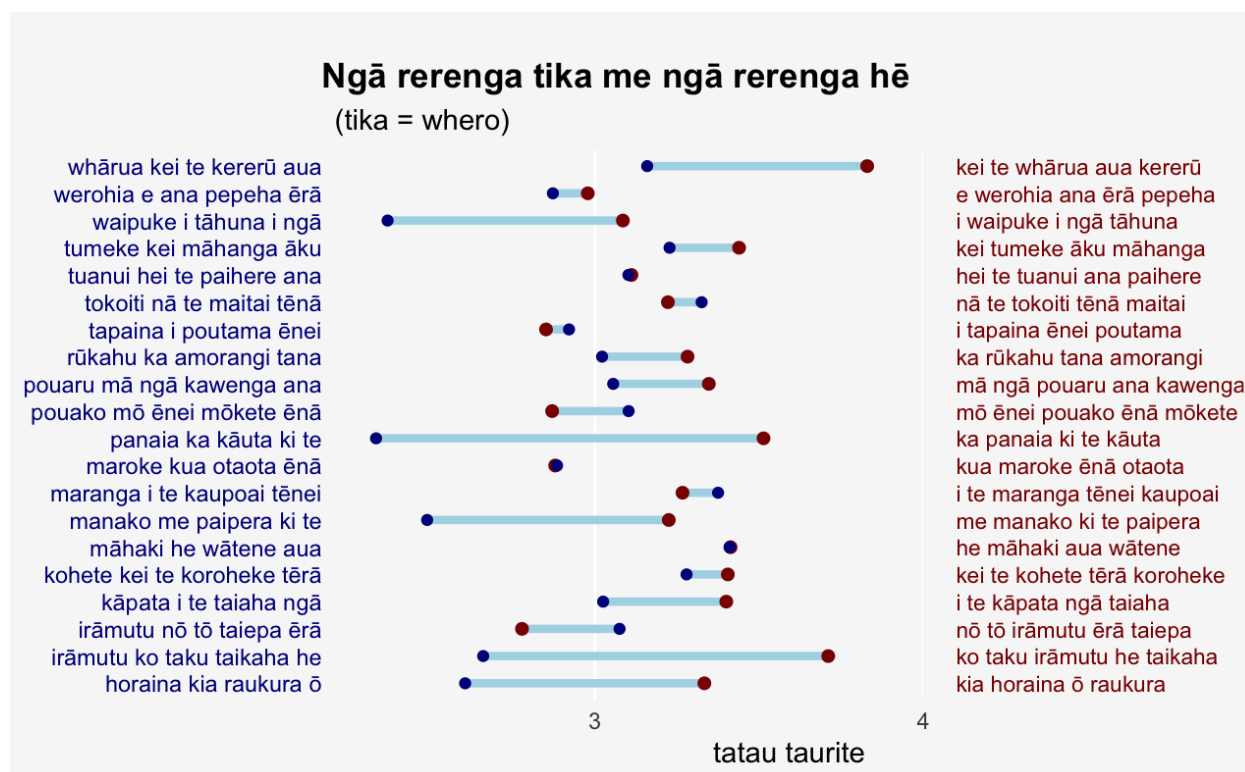


**Kauwhata 4: Ko ngā toharite o ngā whakautu o ngā kaiwhakauru, mō ngā rerenga tika me ngā rerenga hē.**

Kei te pai ake ngā rerenga tika kātoā i ngā rerenga hē? Ka kitea te toharite mō ia rerenga i te Kauwhata 5. Ka kitea he nui ake te rerekē o ētahi rerenga tika (i te whero) i tērā o te hoa hē (kahurangi). Mēnā he nui ake te toharite mō te rerenga tika, kei te tū te tohu whero ki te matau. Mō ētahi rerenga, he nui te rerekētanga o ngā rerenga e rua, mō ētahi atu, he iti.

Ko te rerekētanga tino nui ko te rerekē i waenganui i te rerenga ‘ka panaia ki te kāuta’ (toharite: 3.5) ki te ‘panaia ka kāuta ki te’ (2.3). Ko te kupu whakamutunga i te rerenga hē, ko te kupu ‘te’. Kāore e taea te kupu ‘te’ te tū i te whakamutunga o tētahi rerenga i te reo Māori. Mēnā ka kite tātou i ngā rerekētanga nui katoa, ko ēnei ngā kupu whakamutunga o ngā rerenga hē: “te, he, o, aua, ngā”. Nā, kāore e taea te ‘te/he/o/aua/ngā’ i te mutunga o te rerenga i te reo Māori. Nō reira he tino kino aua rerenga. Ko te āhua nei, kei te mōhio te hunga TKK kāore e taea ēnei kupu te noho i ēnei wāhi o te rerenga. Kei te mōhio pea rātou he kino te kupu mora tahi (te/he) i te mutunga o te rerenga. Engari anō, he roa ake hoki i te mora tahi ētahi o ngā kupu whakamutunga (o/aua/ngā) kāore e pai ki a rātou.

Me te aha ka kitea, mō ngā rerenga e rima he pai atu ki a rātou ko ngā rerenga hē. Anei ngā kupu whakamutunga o aua rerenga hē: tēnā, ērā, ēnā, tēnei, ēnei. Ka taea ēnei kupu te noho i te mutunga o te rerenga i te reo Māori. Nō reira, ahakoa kei te pōhēhē ngā tāngata he pai aua rerenga, he mōhiotanga anō ka kitea. Kei te mōhio rātou he aha ētahi kupu ka taea te noho i te mutunga o te rerenga.



**Kauwhata 5: Te rerekētanga o ngā rerenga tika (whero) i ngā rerenga hē (kaurangi)**

Ka mōhiotia ka arotia te mutunga o ngā rerenga. Hei tauira: he pai ake te akona o ngā kupu i tētahi reo, mēnā kei te tū te kupu i te mutunga o te rerenga. Koia te whakataunga o ētahi whakamātau i ngā tamariki, i ngā pakeke hoki (Golinkoff & Alioto, 1995; Shady & Gerken, 1999; Jusczyk & Aslin 1995; Longobardi mā, 2015). Nō reira, ka kitea hoki i tēnei whakamātau, mēnā he tino hē te kupu whakamutunga o te rerenga, ka tino arotia.

Kua kitea, ka mōhio te hunga TKK i ētahi mea e pā ana ki te wetereo ā-rerenga o te reo Māori. Otirā, 40 rerenga noa iho i te whakamātau nei. Nō reira, me whakawhānui tēnei whakamātau. Ko tēnei pātai, he aha anō te momo mōhiotanga ā-rerenga, he kaupapa pai hei rangahautanga ā tōna wā.

## 5 Hei whakatepe

I tuhia i Oh mā (2020), he nui te mōhiotanga o te reo Māori o te hunga kore kōrero i te reo Māori e noho ana i Aotearoa. He nui te puna kupu tuatahi, arā, ko ngā kupu tikanga kore e mōhiotia ai. He nui hoki te mōhiotanga ororeo raupapa, he pūnaha tō rātou me pēhea te noho o ngā oro i te reo Māori.

I tēnei pepa i kitea ētahi putanga anō mō te mōhiotanga whakahirahira o te hunga TKK. He nui tō rātou mōhiotanga wetereo ā-kupu. Ka mōhio pai rātou ki ngā ngota kupu o te reo Māori. Kei te mōhio hoki rātou kei hea ngā wehenga tino pai mō te whakawehe ngota kupu, arā, ka mōhio rātou i te tikanga mō te wehenga a muri i te mora tuarua.

Waihoki, kei te mōhio te hunga TKK ki ētahi mea e pā ana ki te wetereo ā-rerenga. I te nuinga o te wā he pai ake ki a rātou ngā rerenga tika i ngā rerenga hē. Ko te āhua nei, kei te mōhio rātou mēnā ka taea tētahi kupu te noho i te whakamutunga o te rerenga, kāore rānei. Hei whakatepe noa ake, ahakoa kāore e kōrerotia te reo Māori e te nuinga o ngā tāngata e noho ana i Aotearoa, he mīharo kē ō rātou mōhiotanga e pā ana ki ngā kupu, ki ngā ororeo, ki ngā wetereo ā-kupu, me ngā wetereo ā-rerenga hoki o te reo Māori! Ko te whakataukī:

*Taku ahi tū tata, taku mata kikoha  
Taku ahi tū tawhiti, taku mata kiporo*

Kua kitea i tēnei rangahau, he tika tēnei whakataukī. Mehemea ka tū noa iho koe ki te tata o te ahi, ka rangona te mahana. Ka pēnei ngā tāngata kore kōrero i te reo Māori i Aotearoa. Ka tū anō hoki rātou ki te taha o te reo, ā, ka rangona te mahana, ā, ka pihi ake he mōhiotanga iti, arā, ko te puna reo tuatahi. Ko te manawa ora tēnei kia kā tonu ngā muramura o te reo Māori.

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**Ko ngā kupu ā-kaupapa**

āwhata	scale (measurement)
huna	implicit (as in implicit knowledge or implicit learning)
kaiwhakauru	participant
kūoro	syllable
kupu horihori	fake word, non-word
kupu kiko	content word
kupu matatini	complex word
kupu ngota-tahi	simplex word
kupu pīmua/pīmuri	word with a prefix or suffix
kupu pūhui	compound word
kupu tāruarua	reduplicated word
kupu wetereo	function word
mōhiotanga	knowledge
mora	mora
ngota kupu	morph
ororeo raupapa	phonotactics
oro puare	vowel
oro puare poto	short vowel
oro puare tārua	long vowel
oro puare kē	diphthong
orokati	consonant
pātohu	legend (of a graph)
puna kupu tuatahi	proto-lexicon

putunga kōrero	corpus
roherohe	boundary
tauwhata	point on a scale
TKK (tāngata kore kōrero i te reo Māori)	non-Māori-speakers
toharite	mean (average)
wetereo ā-kupu	morphology
wetereo ā-rerenga	syntax
whakamātau	experiment
whakatakatoranga	structure