



Decolonizing statistical analysis

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Worldview

Positivist-type philosophies:

- Detachment, rational behavior of individuals
- Underpin traditional statistical analysis

Socially-inclusive research:

“unity, cohesion, civic engagement, togetherness, or bridging the gap between ‘us’ and ‘the other’”

— Koikkalainen (2011)

“participatory, emancipatory, partnership and user-led research”

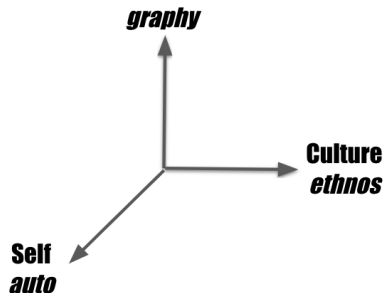
— Nind (2014)

Autoethnography

“researchers. . . systematically introspect and record their experience with the intent of evoking emotional response from readers”

— Ellingson and Ellis (2008)

Writing and research process



- Analytical autoethnography (mainly *graphy*)
- Incorporates **positionality**

Indigenous statistics

“statistics *about* Indigenous peoples but also statistics *for* Indigenous people and statistics *by* Indigenous people”

— Kukutai and Walter (2019)

Example: Cardiovascular health of Māori people in Aotearoa, NZ

Non-Indigenous researcher:

- smoking
- diet
- exercise

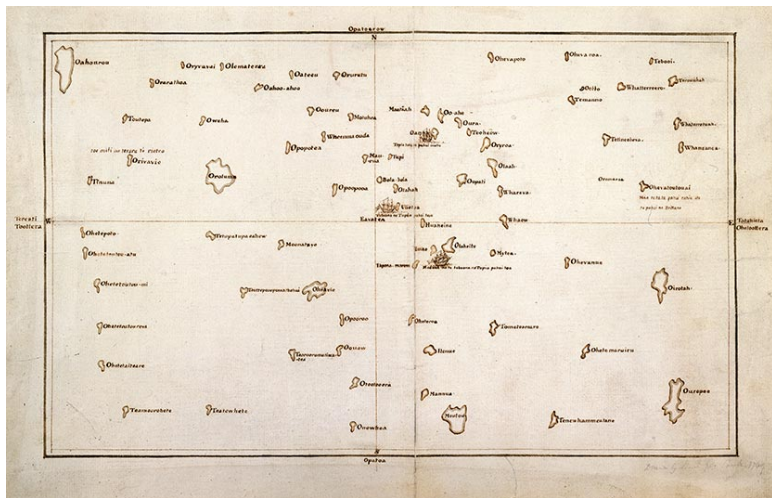
⇒ Poor **individual** choices

Māori researcher:

- dispossession
- colonialism
- ongoing marginalization

⇒ **Social** factors

Tupaia's map



Tupaia's map

“fusion of two completely different knowledge systems”
— Thompson (2019)

Cook's perspective:

“observer high in the sky”

Tupaia's perspective:

“standing on the deck of a boat”

Map perspective:

- Spatial arrangement

Ex: “The kitchen is next to the dining room and across the hall from the coat closet”

Tour perspective:

- How to travel through

Ex: “You come into the hall and turn left into the living room”

Bayesian analysis

Three steps of Bayesian analysis:

STEP 1: assemble a prior distribution	What is known and uncertain about the phenomenon
STEP 2: develop a data-generating distribution	What is known and uncertain about how data are generated
STEP 3: use Bayes's Theorem to evaluate the posterior distribution	What is known and uncertain about the phenomenon in the light of newly-measured data

- Uses **probability** to describe knowledge and uncertainty
- The prior distribution reflects **positionality**

Realigning Bayesian analysis

Traditional Bayesianism:

- Optimal actions of a “rational man” (Lindley, 1958)
- Knowledge is elicited from individual experts

Socially-inclusive Bayesianism:

- **Community elicitation:** individuals are woven into community
- All participants in research are eligible to influence any aspect of the research process

Qualitative elements

Positionality: ... *via* the Bayesian prior distribution

Story:



Potential goals: Transferability and translation of knowledge

Mixed methods research

Qualitative and quantitative compatibility:

- Statistical methodology that is essentially qualitative in character

Skill specialization:

compartmentalization
of roles
(qual vs quant)



holistic implementation
and interpretation
(integration)

- Expose statistics students to socially-inclusive perspectives
- Train qualitatively-minded students in Bayesian techniques

Thank You!!

(Let's connect)

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