Photos: MalakMalak country; by Dorothea Hoffmann

OzSpace: The sociotopography of language, landscape and culture in Australia

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1. Projective space in Australian languages

- Australian languages often cited as exemplars of human capacity to wield completely abstract spatial conceptual systems
- Widespread assumptions about Australian languages:
  - prefer Absolute (i.e. geocentric) frame of reference
  - don't use Relative frame of reference
  - norm for geocentric system is abstract NSEW cardinals

As is well known, Australian languages typically make use of absolute, rather than relative [frame of reference]. (McGregor 2006:148)

[T]here is typically a closed class of spatial nominals, which includes four cardinal direction terms… (Levinson 2003:75)

[M]ost of the Australian languages make essential use of such [cardinal direction term] systems… (Levinson 2003:336)

- Relative frame of reference not as rare or marginal as claimed
- Geocentric not always dominant (at least one language, Murrinhpatha, has no geocentric/absolute terms (Blythe et al 2016))
- Abstract cardinals not the norm
  - Australian geocentric systems invoke diverse environmental features
  - Most languages have multiple lexified axes

- Traditional claims about Australian languages based on small number of case studies
- Diversity significantly under-investigated
- Many un(der)-reported elements (Palmer et al 2021; Hoffman et al forthcoming)

- **No broad study of spatial systems in Australian languages**

2. OzSpace project

- ARC DP200101079: *Landscape, language and culture in Indigenous Australia*

- Topographic Correspondence study
- Features of Australian spatial referential systems, correlated with environmental features

- Sociotopographic study
- Role of sociocultural factors in mediating between individuals/ communities and their environment in constructing spatial systems

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3. Topographic Correspondence study

- 220+ languages across continent

- Correlation of features of linguistic systems and topography
- Testing Topographic Correspondence Hypothesis (Palmer 2015)

- Topography: terrain (=raw landforms) + built environment (Turk 2016)
- River drainage; high country vs lowlands; coasts; dune forms; etc
- Incl. prevailing/seasonal winds; path of the sun; climatic factors

- Key tool – structured database of:
  - spatial referential features
  - topographic features
- User input of data
- User interrogation

4. Sociotopographic study

- Cross-linguistically, considerable variation exists in linguistic spatial behaviour within as well as between languages:
  - Variation between speakers (Bohnemeyer et al 2014; 2015; Dasen & Mishra 2010; Lum 2018; Palmer et al 2017, 2018; Schlossberg 2019)
  - Variation within individual speakers
- Variation within Australian language communities hardly examined
- Only variable looked at = age:
  - Guugu Yimithirr (de Leon 1995)
  - Gurindji (Meakins 2011; Meakins & Algy 2016)
  - Iwaidja (Edmonds-Wathen 2012)

Sociotopography

- Major landscape features are salient to humans and play a role in constructing conceptual representations of space
- Those conceptual representations then interact with linguistic spatial expression

- Cultural and social factors mediate in the relationship between humans and landscape
- Language use mediates between sociocultural factors and linguistic systems

> *spatial behaviour reflects a complex interplay of responses to salient features of the natural and built environment; its affordances; sociocultural interaction with the environment including uses, associations and meanings attached to it; and the linguistic repertoire available to speakers* (Palmer et al 2017)

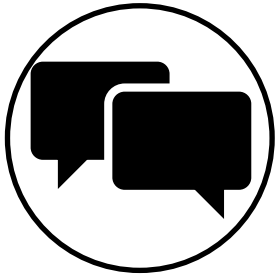
Sociotopographic model

Environment

- Topography, broadly construed, including:
  - Natural environment (terrain, climate, wind, sun etc)
  - Built environment (e.g. layout of buildings, streets)

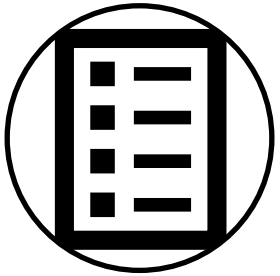
Culture

- Present/historical interactions with environment
- Spatially anchored cultural practices (e.g., dance, oriented burial)
- Conventionalized spatialized representations (e.g. maps, orthography)
- Conceptualization of environment in terms of the above



Language use

- Frequency of spatial lexemes and spatial grammar in discourse
- Use of spatial language in different contexts
- Interactions with other languages (i.e. language contact and multilingualism)



Linguistic repertoire

- Lexicalization of spatial concepts
- Grammaticization of spatial concepts

(Palmer et al. 2017; Lum et al forthcoming)

OzSpace sociotopographic study

- Inter-speaker variation – variables like:
  - occupation (=nature of engagement with environment)
  - gender (?proxy for occupation)
  - bilingualism (?=influence of English/Kriol)
  - education (?=influence of English; ?=influence of literacy (script direction))
  - age (?=occupation; proxy for education; language change/shift)
- Intra-speaker variation – variables like:
  - task-based variation
  - interlocutor (accommodation)
- Landscape: the set of physical, utilitarian, cultural, spiritual relationships that an individual or community has with topography (Turk 2016)

- 6 language communities:
  - in diverse environments
  - with enough demographic diversity to support a sociotopographic study

	Environment	Region	Family	Speakers	Claimed absolute System
Central-Eastern Arrernte	desert	Central Australia	PN Arandic	2000	cardinal/(river)
Kukatja	desert dunefield	Central Australia	PN Wati	>600	solar cardinal
Kune dialect (Bininj Kunwok)	riverine	Arnhem Land	Gunwinyguan	2000	cardinal/river/ elevation
Burarra dialect (Gu-jingaliya)	coastal	Arnhem Land	Maningrida	2000	coast/wind/ elevation/sun
Murrinhpatha	coastal	Daly	Southern Daly	3000	none
Not finalised	island	Torres Strait or Gulf of Carpentaria			coast/wind

5. OzSpace questions

- Environmental effect:
  - which environmental features influence spatial representations if available?
  - how consistently do communities invoke individual environmental features in spatial representations?
  - to what extent do multiple environmentally motivated strategies comprise alternative systems or work as components of single system?
  - where apparent cardinal terms occur, are they anchored in environmental features?
  - to what extent do individuals run a mental compass and to what extent do they monitor environmental cues?

- Sociocultural effect:
  - how do community-level cultural practices affect interpretation of environmental features in building spatial representations?
  - which individual demographic factors affect interpretation of environmental features in building spatial representations?
  - to what extent are those individual factors epiphenomenal for nature of engagement with environment?
- Linguistic effect:
  - to what extent do features of linguistic structure and lexicalization influence non-linguistic spatial representations
- Mismatches:
  - how do individuals simultaneously operate multiple FoRs in different modalities?

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