

A photograph of three people sitting on the ground in a grassy field. The person on the left is wearing a red cap and a white shirt, and is smoking. The person in the middle is wearing a blue cap and a white shirt, and is holding a long wooden staff. The person on the right is wearing a white shirt and a hat. The background shows a line of trees under a clear blue sky.

# **Of Moving, Modelling and Mapping: Some experiences with San**

**(Taa in Omaheke South,  
Khwe in Bwabwata National Park)**

**PLEASE DO NOT QUOTE WITHOUT PERMISSION**

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# Abstract

Ideas presented here are

- a side-product of „cultural mapping“ excercises which were aimed at the documentation of former patterns of settlement and land use,
  - based on what the San, with whom I worked, explained to me "on" or "by the way",
  - substantiated by little focussed inquiry and, therefore, to be understood as clues or spools potentially worthwhile of tracking further.
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- The way they were talking about the situation of places seemed to me as if they were recapulating or imaging movements between or to places.
  - The way they were talking about the land and moving in it seemed to reflect cognitive models of regular occurances of perceptually salient and/or culturally important landform units.
  - Beyond conventional visualisation on or by maps?

# „Cultural Mapping“

The term „cultural mapping“ suggests that it is different from other mapping exercises in representing a culturally discrete (in our case: hunter-gatherer) way of knowing where things are on (a part of) the globe.

But: all maps are cultural

- first, because all map contents represent what a particular culture (IP, academic discipline, military, etc.) is interested in (Harvey 1992),
- secondly, and more important, because representing (things in) the world (topography, natural resources, political history, etc.) within the global cartographic grid and as „two-dimensional visualisation from above“ (CRC 806/E3 Research framework) is a particular cultural practice of mediating where things are (ibid).

So-called „cultural mapping“ exercises apply a non-hunter-gatherer cultural practice to a hunter-gatherer engagement with their local environment.

# „Cultural Mapping“

## Purpose

- Acknowledge and render visible the local knowledge and perspectives of hunter-gatherers (cultural mapping).
- Developed in a participatory way with the respective community (community mapping).
- Meant to be emancipatory and opposing representations against dominant or official maps/maps of power; current interest in territorial/use rights substantiated by (often past) cultural practices (settlement, subsistence, rituals, etc.): (counter mapping; „a thing to do for IP“ acc. to Fox 2002).

## Often disregarded/unmentioned

- Maps are hybrid cultural products since they result from communication between people with different cultural backgrounds (community members, researchers, government staff, NGO staff, professional map makers, etc.)
- Conflictive representations within communities are contrary to a) mapping conventions b) imaginations of „community“ as consensual group, c) common political interests of communities as vis-à-vis outsiders.
- Instead of being emancipatory the application of mapping technologies and conventions has also been called a „subjugation to the doctrine of the cartographic grid“ (Armbrecht Forbes 1999).

# Mapping

Mapping is a cultural practice of representing where things are in the world. Some characteristics also pertain to other cultural practices of representation.

All representations:

- Abstract/reduced/delimited in contents/less detailed
- Reflect some sort of interpretation
- Made for a purpose (e.g., transmission of knowledge, orientation, economic exploitation, substantiation of political legitimacy, etc.)

Several representations:

- Visual and two-dimensional (cultural material/technology: paper, satellite image, etc.)
- Symbols (culturally specific symbols, mapping conventions: in particular points, lines, areas, plus special symbols)
- Portable (from one cultural context to another)

Particular to mapping/cartography

- Geo-referenced (longitudes/latitudes)
- Applicable and applied worldwide by global cartographic grid

Alternatives to which aspects / move beyond which aspects?

# Mapping

## Alternatives?

### All representations:

- Abstract/reduced/delimited/less detailed > what is important/negligible for whom and why/in which context?  
Are community protocols an alternative?
- Reflect some sort of interpretation > whose/which interpretation?
- Made for a purpose > whose/which purpose?

### Several representations:

- Visual > mediated for other senses?
- Two-dimensional > 3D-models, virtual worlds?
- Symbolic > which symbols?

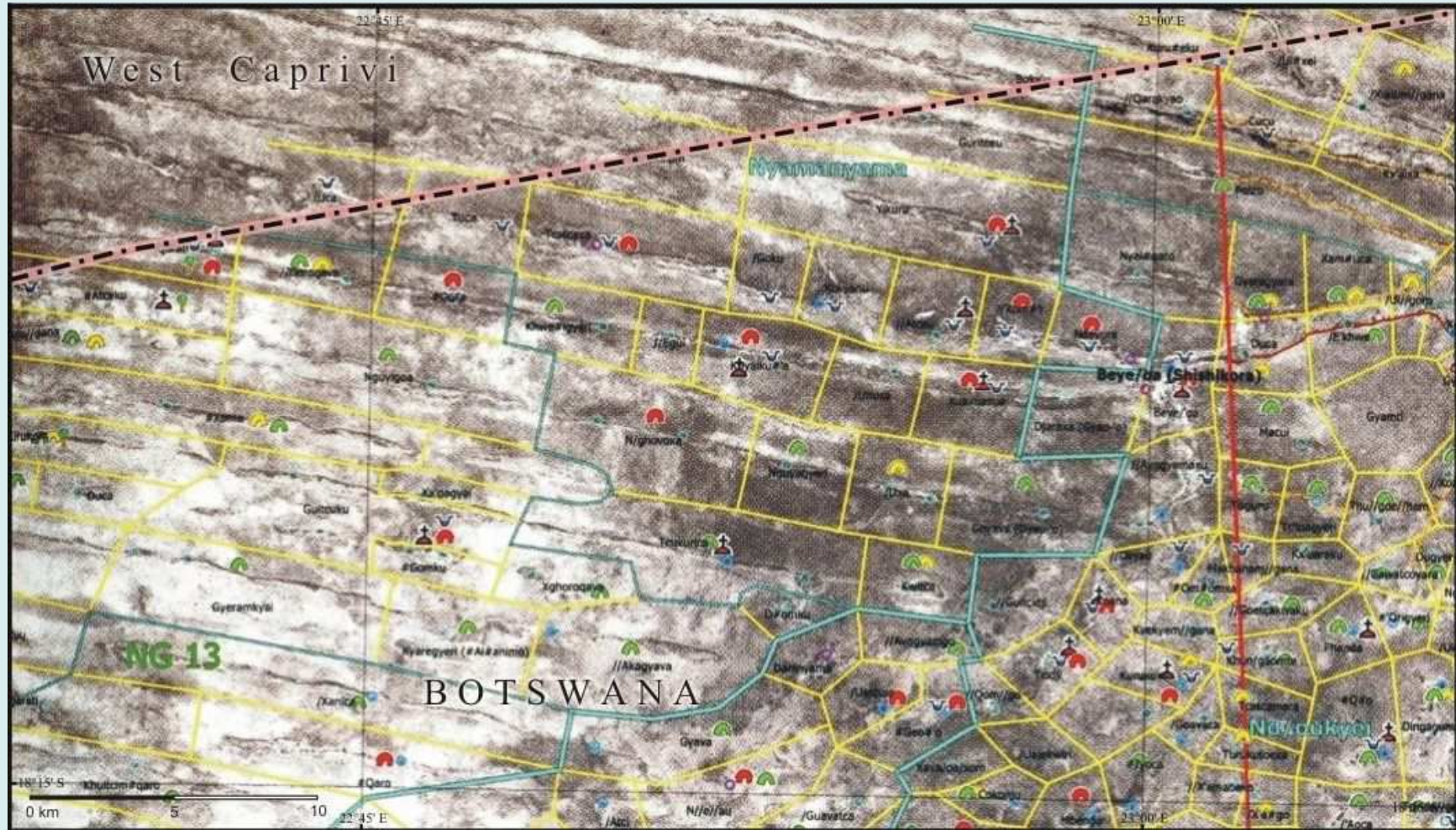
# Mapping conventions versus San culture

Places/Place names and Territories/Boundaries:

	<b>Mapping conventions</b>	<b>(San) culture</b>
P	Isolated	Node in web of routes and relations
P	Spot	Focus with surroundings
P	Expression of occupation	Expression of character, utility
T	Area-wide, filled, delimited by lines	Resource-wide, patchy
T	Discrete and fix	Overlapping and fluid
T	Occupied, owned No 'no-man's land'	Usage, ritual responsibility, invested labour, ancestors
T	Externally recognizable	Experienced
	Geo-referenced	Practice/engagement-referenced
	Oriented to the north	Oriented along path of sun
	Presence/whereabouts of things	Logic of/relations between things
	Contour line model of topography, Aerial Image, Satellite image	Cultural model of topography



# „Cultural“ map of Khwe „territories“ I



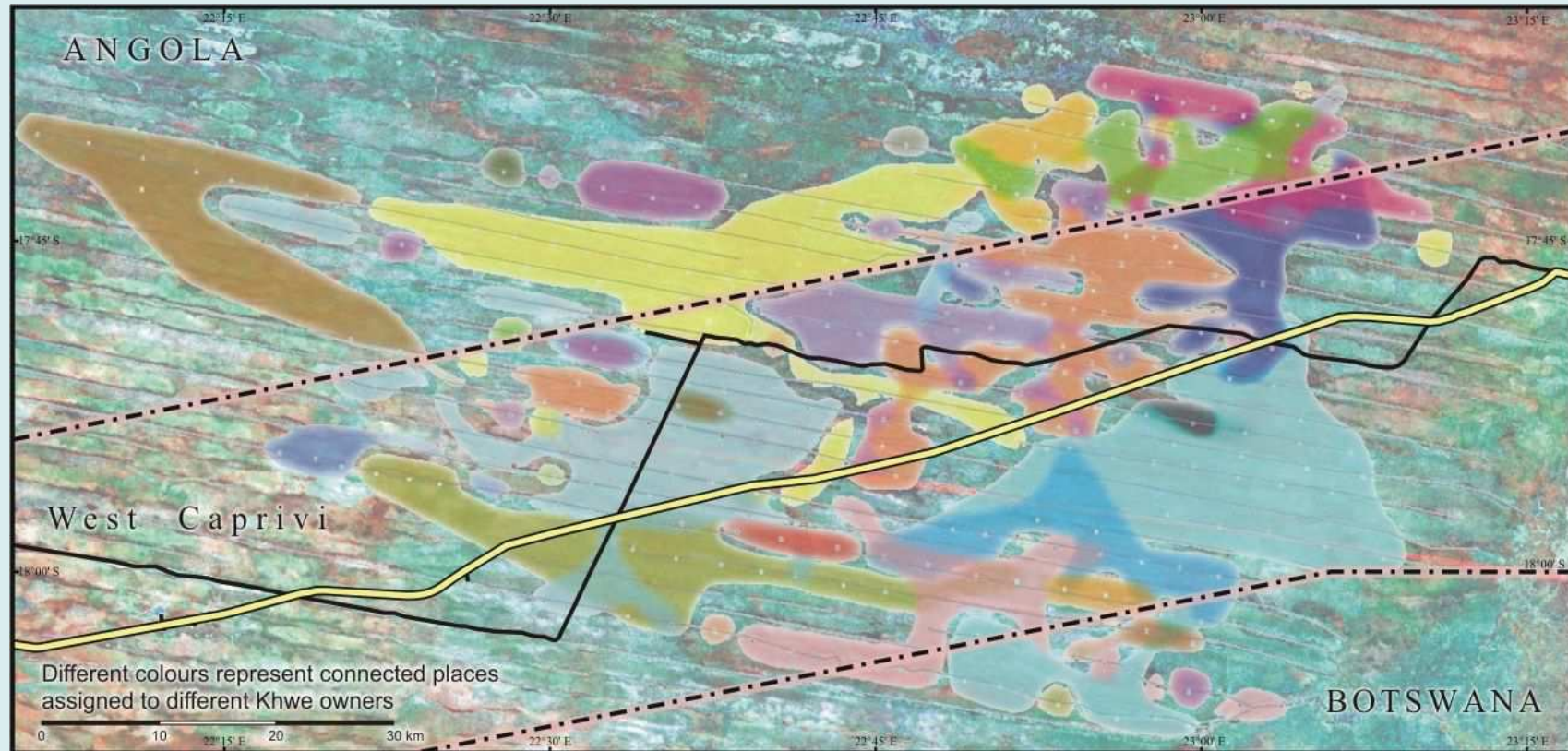
A representation of Khwe land ownership and settlement in northeastern Botswana.

(reproduced from: Le Roux & White 2004: 14-15)

Topography as apparent from satellite image taken for granted and „used“ for borders!



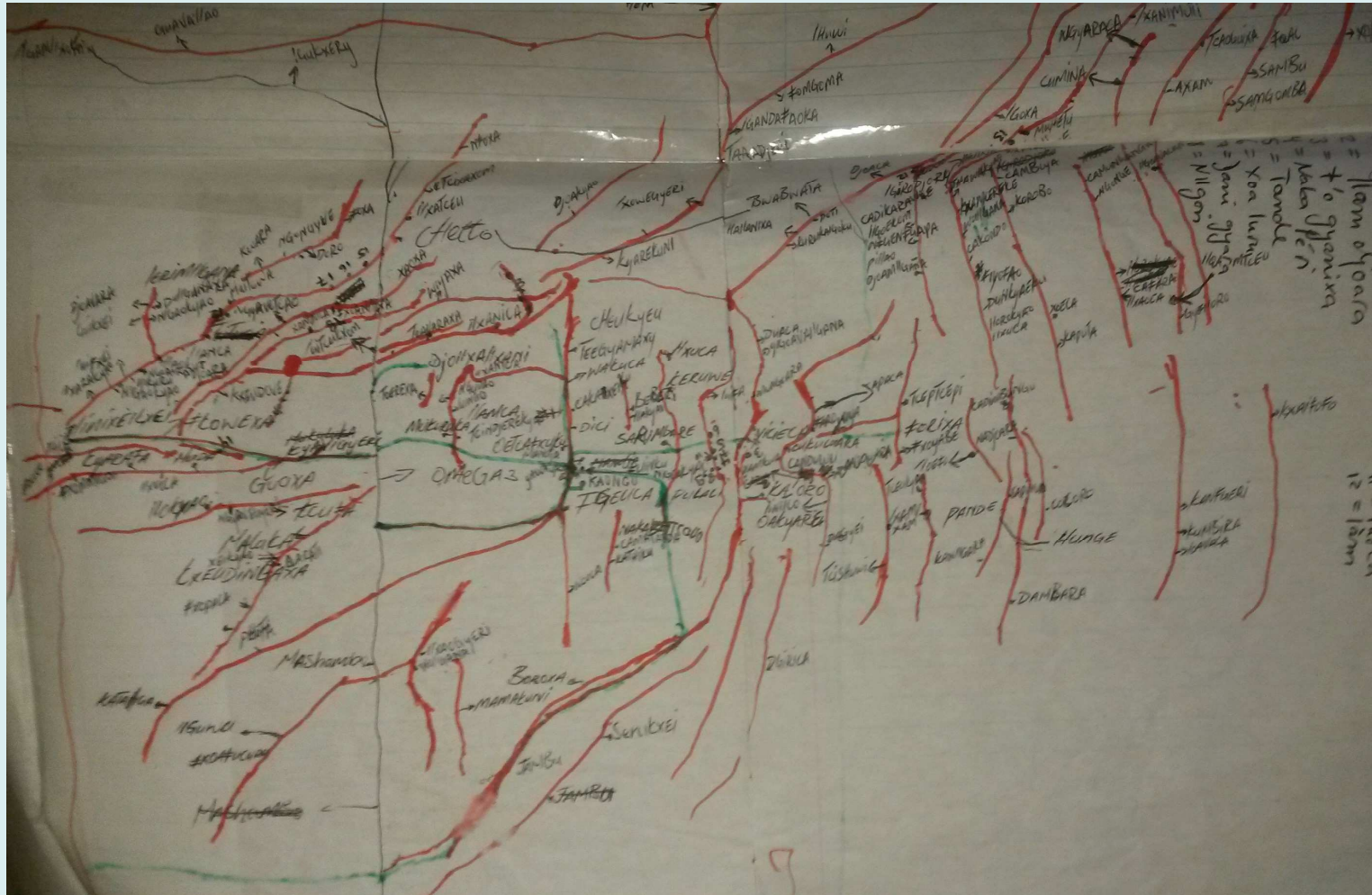
# „Cultural map“ of Khwe „territories“ II



A representation of Khwe land ownership in the eastern part of West Caprivi (Bwabwata National Park) and adjacent areas in northeastern Angola and Botswana.  
Draft: G. Boden; Graph: H. Sterly

Topography as apparent from satellite image taken for granted!

# Khwe map



Map drawn by Khwe young adult according to information of Khwe elders  
Oriented to the path of the sun, top of paper/writing = west  
Topography more complex than apparent from satellite image. Scale matters!

# Taa cognitive landscape model

Interest triggered by statements like

„When you see the dune top from far you know the pan is close.“

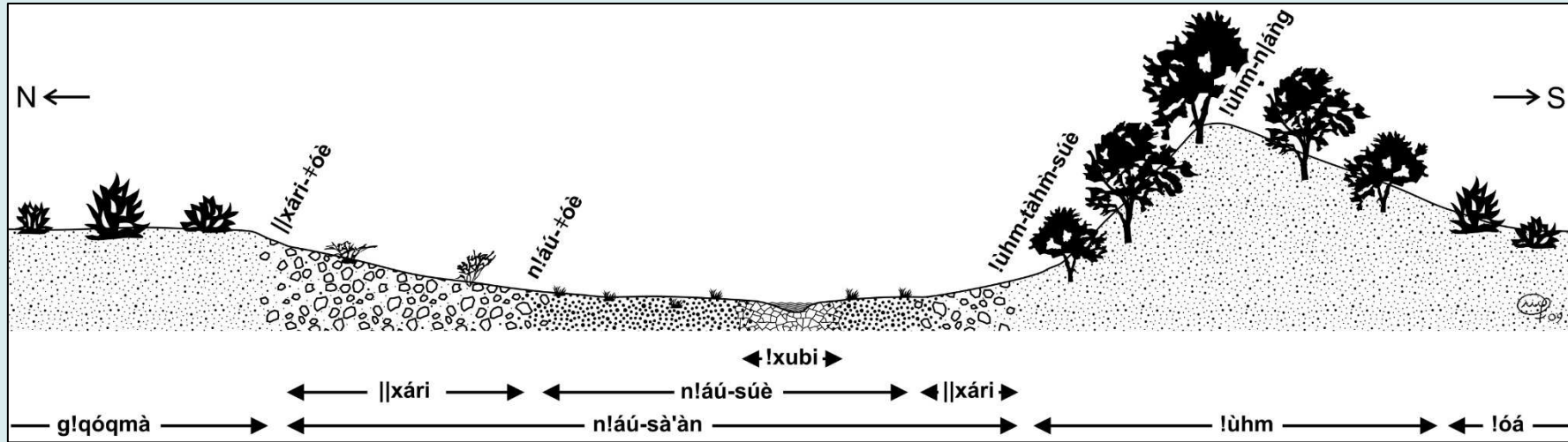
„When you reach this white hard ground you follow it until you come to the pan.“

Taa landscape model

- Recurring co-occurrence of (named) landform units
- Giving clues for orientation and usability: where to look for water, animals, people's homes (on dune tops to have better overview and not frighten animals away from pan when they come to drink water and can be trapped).
- Matching researcher's way of conceptualizing landscape as emerging from interacting forces of lithosphere (substrate), pedosphere (soil), hydrosphere (water) and biosphere (plants, animals, people) to regularly shape the earth's surface or relief.



# Generalized Taa landscape model



## Units:

*g!qóqmà* sandy plain  
*n!áú-sà'àn* pan

*!ùhm* dune

## Not always:

*!'ári* pan in nascent stage *n!áú-'nlùqm*

## Parts and Crossovers:

*||xári* stony area, *klipperige plek*  
*||xári-#óé* rim (lit. ,mouth') of stony area  
*n!áú-#óé* rim (lit. ,mouth') of pan  
*n!áú-súè* pan interior, bottom of pan  
*!xubi* place where water collects in pan

*!ùhm-tàhm-súè* base (lit. ,foot') of dune  
*!úhm-nláng* top (lit. ,head') of dune  
*!'óà* backward slope of dune

*n!áú-'nlùqm* inlet/outlet (lit. ,throat' of pan

# Taa landscape terms (selected)

Taa	English	Form	Soil	Vegetation
n!au-sa'an	pan	depression	inside-out: from clayey to stony	inside-out: from grass to bushes
!xubi	waterhole in pan	depression	clay	none (seasonally water)
n!au-sue	pan interior	plain	coarse hard sand	grass and herbs
xari	stony area	sloping	stony	small bushes
!uhm	dune	elevation	sand	tall bushes and trees
!'oa	slope	sloping	sand	tall bushes and trees
!qoqma	sandy plain	plain	sand	tall bushes and trees
!"ari	<i>vaalplek</i>	depression	coarse hard sand	grass and herbs

- Taa landscape terms combine several aspects and (as such) are only applicable in local (and perhaps similar) landscapes.
- English landscape terms such as ,valley‘ (form only) or ,forest‘ (vegetation only) are unidimensional.
- Unidimensional categories are easier transferable to other cultural contexts (condition for or result of expansion?)

# Taa landform categories



*N!au-sa'an* /Aqri-sitoqma-si||ai (S 23°38.604', EO 19°45.747, 7.2.2005)



# Taa landform categories



*!Xubi-!qhaa* (waterhole filled with water in pan) at |Aa-!uni (S 23° 28.329', 19° 56.670'; 9.2.2005)

# Taa landform categories



*!Xubi-g//oha* (dry waterhole in pan) at Qae-|oqm (S 23° 50.425, EO 19° 43.562', 22.2.2005)

# Taa landform categories



*N!au-sue* of ||Qhung-ǀqx'ung (S 23° 37.092; EO 19° 48.347, 19.2.2005)



# Taa landform categories



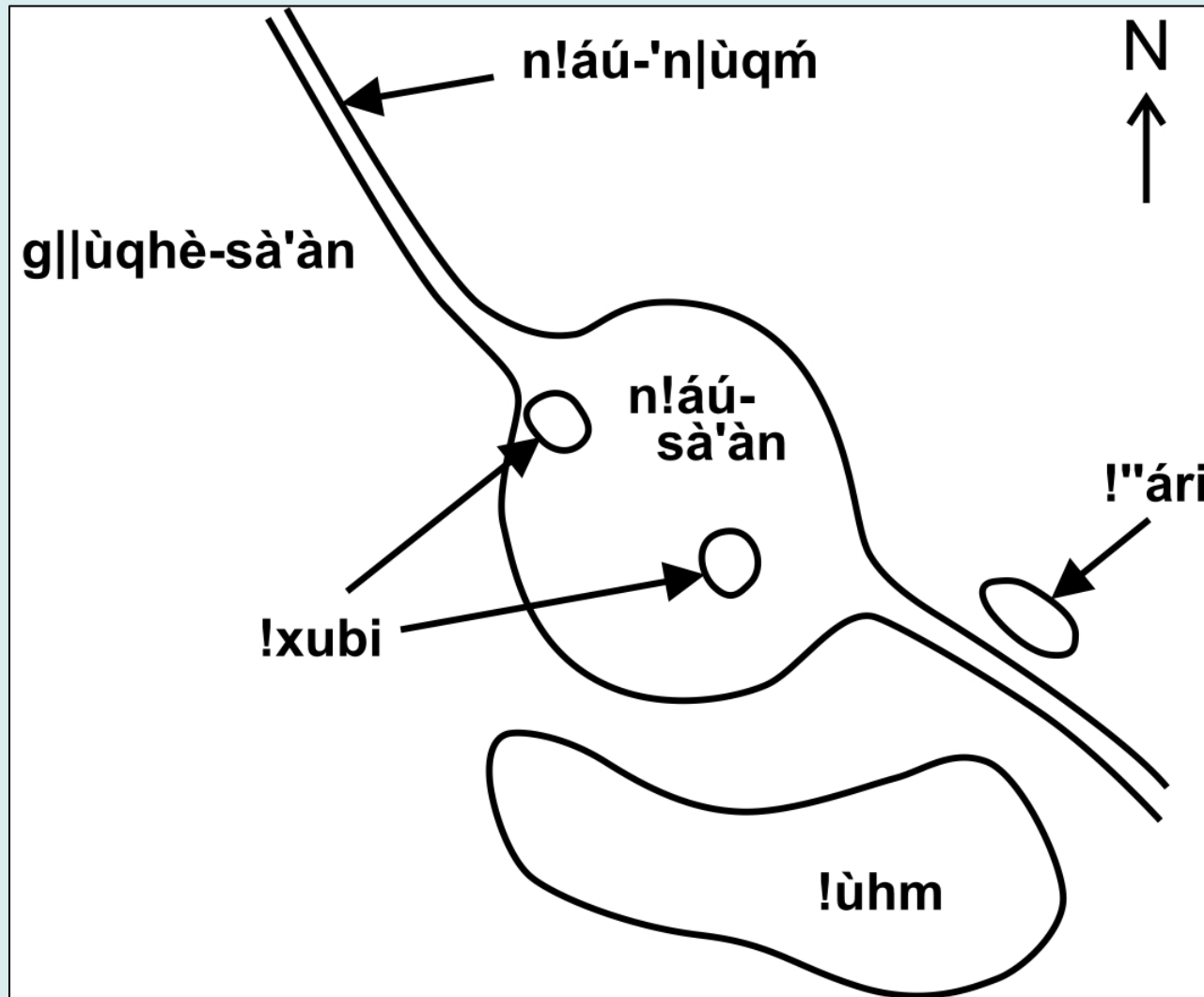
IlXari (stony area/*klipperige plek*) at †E-ku-g†'aan (S 23°47.370, EO 19°43.336, 22.2.2005)

# Taa landform categories



View from the dune (*!uhm*) at Kuni-|i-!uhm over the backward slope (*!'oa*) and adjacent sandveld (*!qoqma*) in the south (S 23°43.656', EO 19°21.422'; 30.6.2004)

# Particular Taa landscape model



Geomorphological situation at !Ai-aqa, top view, redrawn from sketch in sand; note that indication of parts of pan were left out



## Conceptual change: Definitions of ,pan‘

“A pan is a thing which contains water. The people stay there and run to the water and drink it until it is finished. Then they go to another [pan with] water. When the rain has rained, the water falls in the dark space which holds the water and the Bushmen go there and stay. It is a pan because the *n!au-g//abi* (unidentified) and the medicine which grows in the pan and *makuburoann*-bushes (unidentified) are to be found there.”  
(woman, ca. 65 years old)

“The water is there [in the pan] but it dwindles quickly. The springboks come to the pan in order to drink water and the people stay there as well.” (man, ca. 55 years old).

“A pan is wide and white. The trees are far away.” (man, 38 years old)

“A pan is a big white place which is dry. When the rain falls, the water will be there.” (woman, 28 years old)

# Lexical and conceptual change: Pan components

Age	hunt/ trap	collect medicine	settle	drink water	collect clay for houses	contains water	open/wide no trees	white stony Ground
1945*		+	+	+				
1946	+			+			+	+
1950*	+		+	+		+		
1950*		+	+	+				+
1952	+	+				+		+
1955						+		+
1958						+	+	+
1959								+
1960						+	+	+
1967						+	+	
1968							+	+
1970							+	+
1978		+			+			
1980							+	+
1980							+	
1980						+	+	+
1982							+	+

\*Age estimated

# Taa landform categories: Prototypical pan



Salt pan !Uri-g~~+~~aa  
(S 23° 41.644', EO 19° 48.280'  
22.2.2005)

- Photo of pan chosen as prototypical pan in photo sortings = salt pan
  - Distinction concerning usability is blurred: sweet water pools in salt pans, changing water quality, brackish water still used for cooking, game comes to lick salt
- Different methods generate different results



# Ethnophysiography (Turk et al 2011)

Ethnophysiography is the study of different human conceptualisations of the landscape indicated by differences in the way ,languages‘ carve up surroundings into categories and use terms and proper names (toponyms).

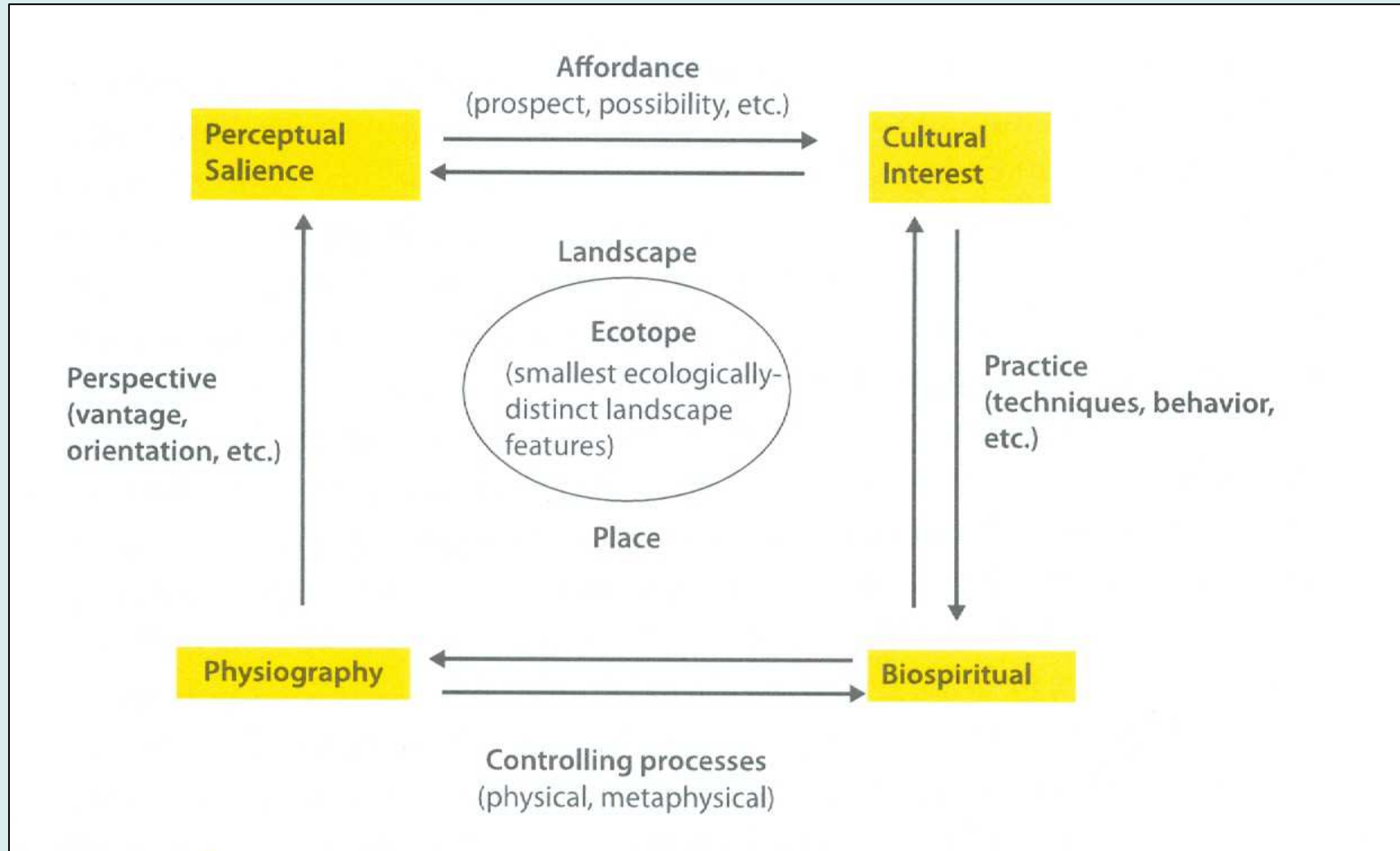
## Factors causing differences

- Physical features: topography, climate, vegetation
- Social/cultural features: lifestyle, economy, settlement patterns, religious beliefs, history
- Linguistic features: grammar, language contact, use of different languages for particular purpose

## Possible differences

- Relevance of shape, size, material, accessibility, affordances, soil, hydrographic features, vegetation cover, ecogenic and anthropogenic change, use/management, etc. in categorizing
  - Number, Analysability of terms, Metaphors, Scope of meaning
  - Relationship between proper names and landscape terms
- Model of categorization processes ≠ Model of relations between things in the world

# Landscape and cognition conceptual model



(Thornton 2011: 277)

## Political relevance of models/categories

- Result of prior debates about the character of nature; e.g. how much forest there is depends on what is defined as forest
  - Fixing categories (forest, wasteland, etc.) is a force in the transformation of the environment as they direct the future of landscape management and land-cover change.
- 
- Compare local categories and categories of environmental professionals
  - Explore how technologies (e.g., satellite images) affect landscape conceptions; what is visible for new technologies (greening) may overlook benign developments (foreign tree species).
  - Study institutionalization of landscape categories in „schools“ (success in schools is based on use and deployment of learned knowledge, organizes public memory, imposes certainty and uncertainty).
  - Balance state interest versus complexities of local use-rights and access/diverse local populations.

(cf. Robbins 2001; Wartmann & Purves 2017)



# Moving

## Khwe

- Landscape: parallel dry river beds and dunes (NNW/SSO), named waterholes/pans in dry river beds
- Description of locations are imagined or recapitulated movements from one waterhole to another on the way (along the dry river bed, crossing dunes between omurambas, with or across the path of the sun)

## Taa

- Landscape: pans with lunette dunes on leeward southern or southeastern rims.
- Description of locations are imagined or recapitulated movements from one pan to another on the way

## Both

- Distances are indicated by indicating position of the sun at time of departure/arrival.
- Directions indicated by turning body (also in the group) > bodily memory

# Moving (Khwe)



Photos and Copyright: Matthias Brenzinger

# Moving-Modelling-Mapping

Moving (and other practical engagements with local environment)

- Experience with all senses
- Mediated by discourse and common bodily ,performance‘
- Processed/abstracted to models by recognizing and making sense of regularities

Modelling

- Representation of interpreted experiences and relations
- As such a universal human practice, but culturally specific ways of modelling

Mapping

- Visual, two-dimensional representation of theoretical model of parts of the globe pinned down according to the cartographic grid
- Particular cultural practice

Mapping rebound on model, map and model rebound on experience



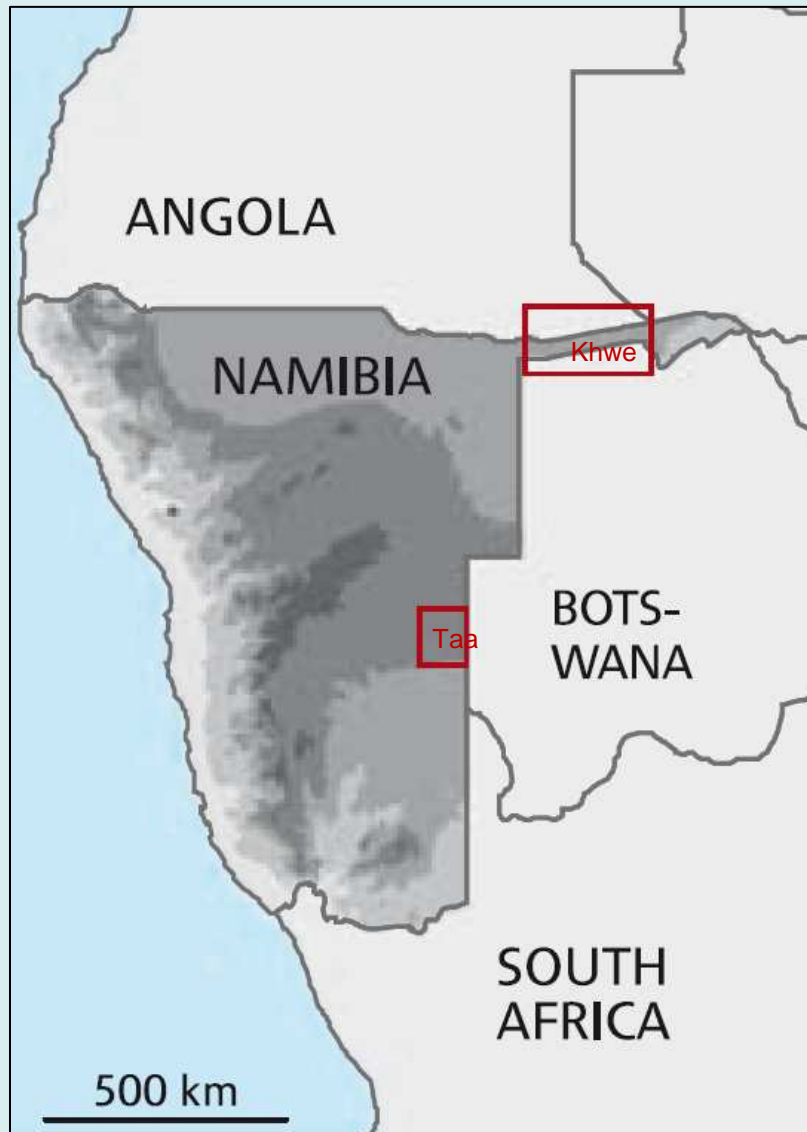
## Questions for discussion

- How can we understand/access „cultural perceptions of the environment“ and „ways hunter-gatherer orient themselves“ (CRC/E3 research framework)?
- Insights from any method are limited by the very method they were gained with.
- Is it adequate/satisfactory/inevitable to ‚only‘ add as many aspects or perspectives as possible? Is there a way/method to fully understand? By own involvement/through participation?
- Are we interested in what they perceive/know or in how they perceive/know?
- Does to „move beyond conventional visualisation“(CRC/E3 research framework) ‚only‘ mean to „move beyond conventional ways of visualisation“ or to move beyond visualisation? Is visualisation an adequate way of representation at all if hunter-gatherers did/do not use it as a way of representation?
- How can we realise variation and change and deal with it?
- Is cognition ‚only‘ distributed among hunter-gatherers or also between hunter-gatherers and researchers and how can we account for it?



Board at entrance of block D of Mutc'iku resettlement scheme (Khwe). 1998

# Location of Case Studies





# References

- Boden, Gertrud (2007). Mapping culture, representing boundaries and politicising difference-reflections on two San cases in Namibia. In: Bubenzer, Olaf, Bolten, Andreas, Darius, Frank. *Atlas of Cultural and Environmental Change in Arid Africa*. Köln. Heinrich-Barth-Institut, pp. 112-115.
- Boden, Gertrud (2009). From utility to perceptual salience: Cultural, lexical, and conceptual change in the Southern Kalahari Landscape. *Anthropological Linguistics* 51 (3-4), pp. 303-327.
- Boden, Gertrud (2011). The Documentation of Place Names in an Endangered Language Environment: A case study of the !Xoon in Southern Omakehe, Namibia. *Anthropological Linguistics* 53 (1), pp. 34-76.
- LeRoux, Willemien & White, Alison eds. (2004). *Voices of the San living in southern Africa today*. Cape Town: Kwela Books.
- Robbins, Paul (2001). Fixed categories in a portable landscape: the causes and consequences of land-cover categorization. *Environment and Planning A*, 33, pp. 161-179.
- Thornton, Thomas F. (2011). Language and landscape among the Tlingit. In: Mark, David M. *Landscape in Language: Transdisciplinary Perspectives*. Amsterdam. John Benjamins, pp. 276-289.
- Turk, Andrew G., Mark, David M., Stea, David (2011). Ethnophysiography. In: Mark, David M. *Landscape in Language: Transdisciplinary Perspectives*. Amsterdam. John Benjamins, pp. 26-45.
- Wartmann, Flurina M., Purves, Ross S. (2017). „This is not the jungle, this is my *barbecho*‘: semantics of ethnoecological landscape categories in the Bolivian Amazon. *Landscape Research*. <http://dx.doi.org/10.1080/01426397.2016.1269882>