What Plants Tell Us About The Mayangna Meronymy System

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Ethan Myers
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1. Goals

- To examine what the plant domain tells us about the algorithm to calculate meronyms in Mayangna.

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2. Background Introduction

a. The logistics of the Project

b. The Initial System in Eggleston (2012)

2. Background Introduction

a. The logistics of the Project

Data for this study stems out of

- an ethnobotany project
- conducted by the Mayangna community in conjunction with the authors
- under a Participatory Action Research approach.
- 370 plants were identified and documented by elders of the community
- together with their physical properties and cultural usage.

2. Background Introduction

b. The Initial System in Eggleston (2012)

Facet	Volume	Extension/ protrusion	Column	Border	Negative Space
dang	bâ	kal	pan	kung	rahrah
muh	mak	nangtak	baril	an	sulinh
pirin	tap	sut			tinapas
sait	tun	ting			
sar		bas			

- Productive system
- Shape-based
- Orientation independent

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3. A preview of the plant-based meronyms

- Which ones of the original meronyms identified in Eggleston (2012) can be found?

Facet	Volume	Extension/ protrusion	Column	Border	Negative Space
√ dang	√ bâ	√ kal	pan	√ kung	√ rahrah
√ muh	√ mak	nangtak	baril		sulinh
pirin	tap	√ sut			tinapas
sait	√ tun	√ ting			
√ sar					

- Are there new ones?

3. A preview of the plant-based meronyms

Facet	Volume	Extension/ protrusion	Column	Border	Negative Space
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pirin	tap	√ sut			tinapas
sait	√ tun	√ ting			
√ sar					

- Are there new ones?

  Yes… :

  dang < > pas / muh
  pan
  tû
  wah
  kuhbil
  isning
  ûntak

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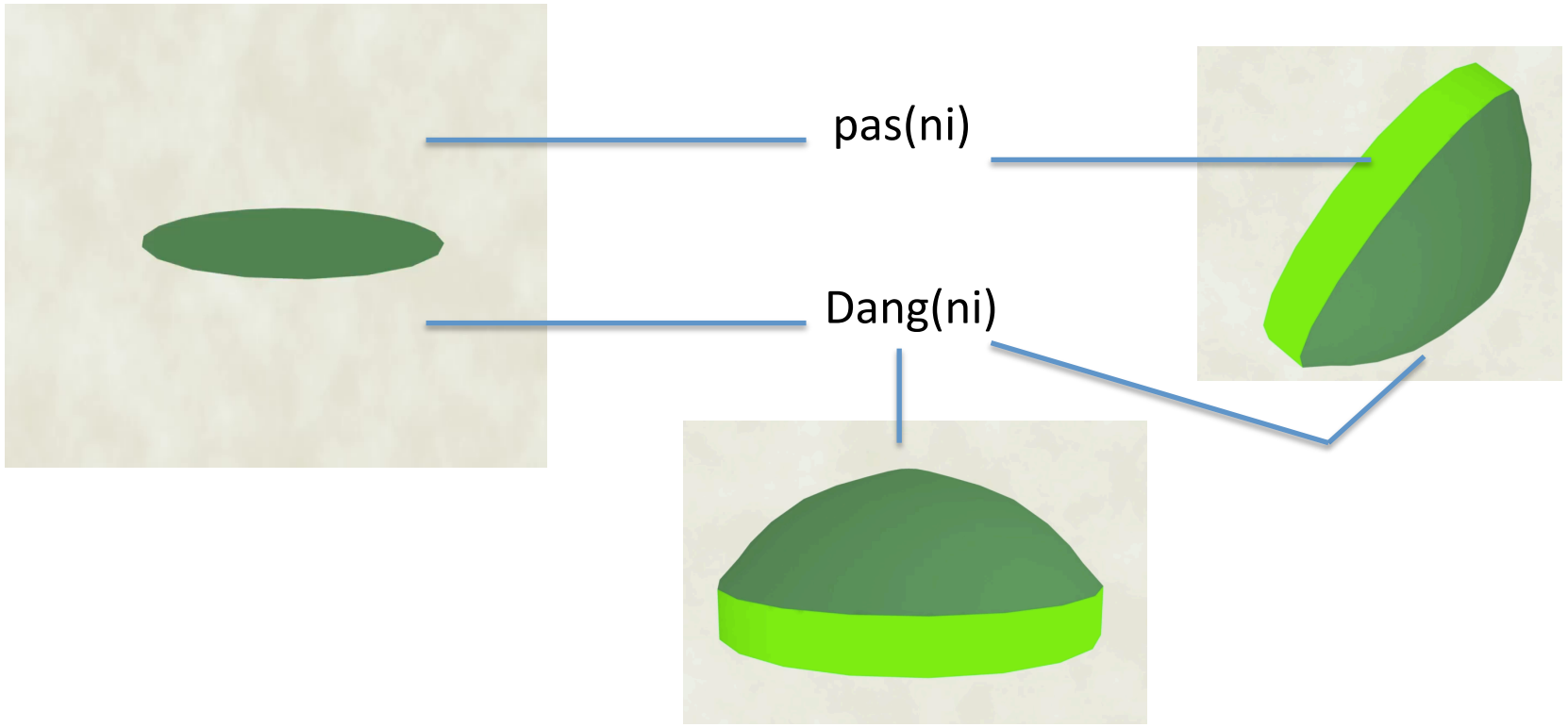
4. The algorithm … or trying to get there

- The contrast dang <> pas

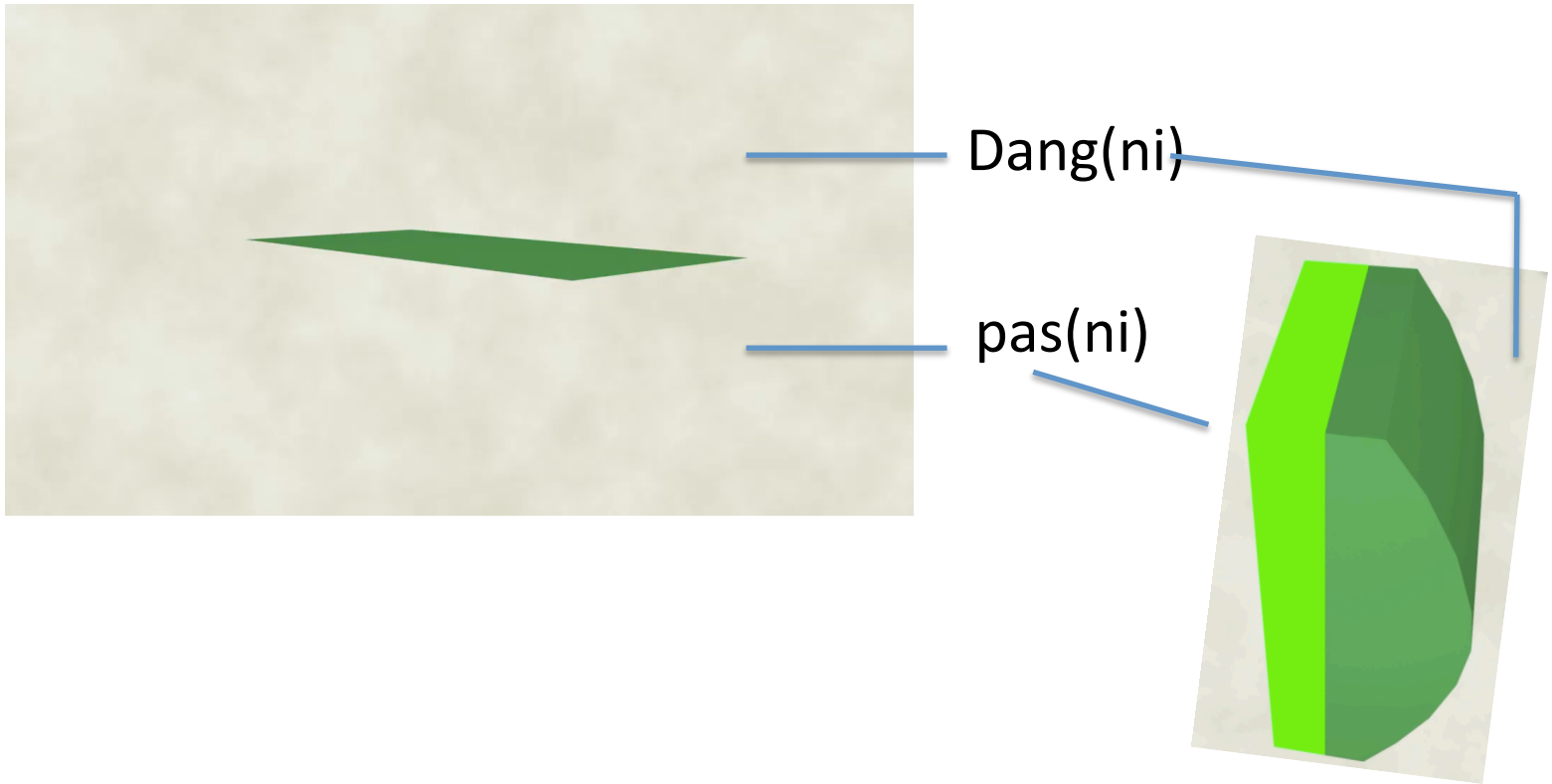
  Differentiating initial facets …

  a. identifying convexity



4. The algorithm … or trying to get there

- The contrast dang <> pas
  a. identifying convexity … along an axis



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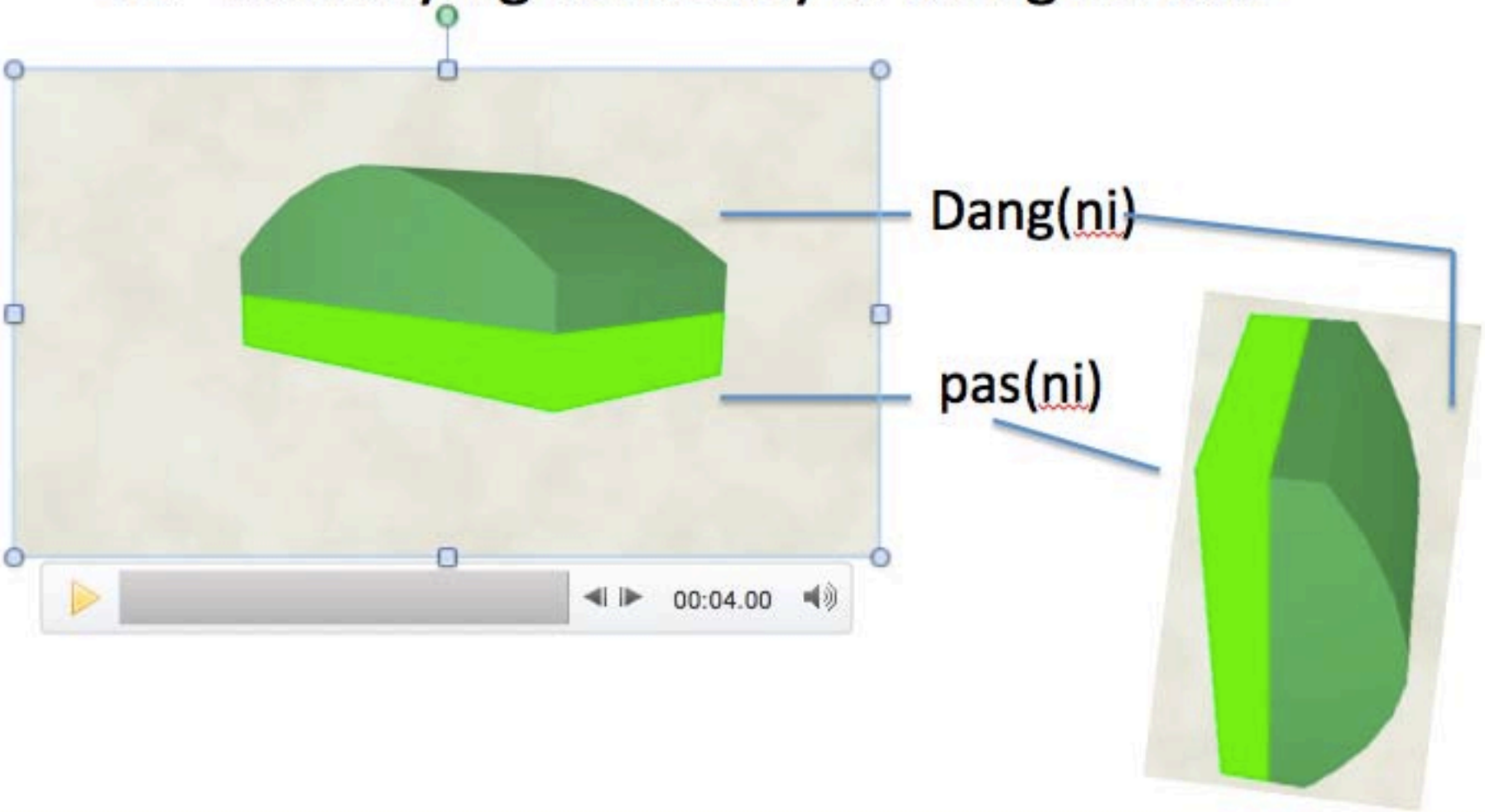
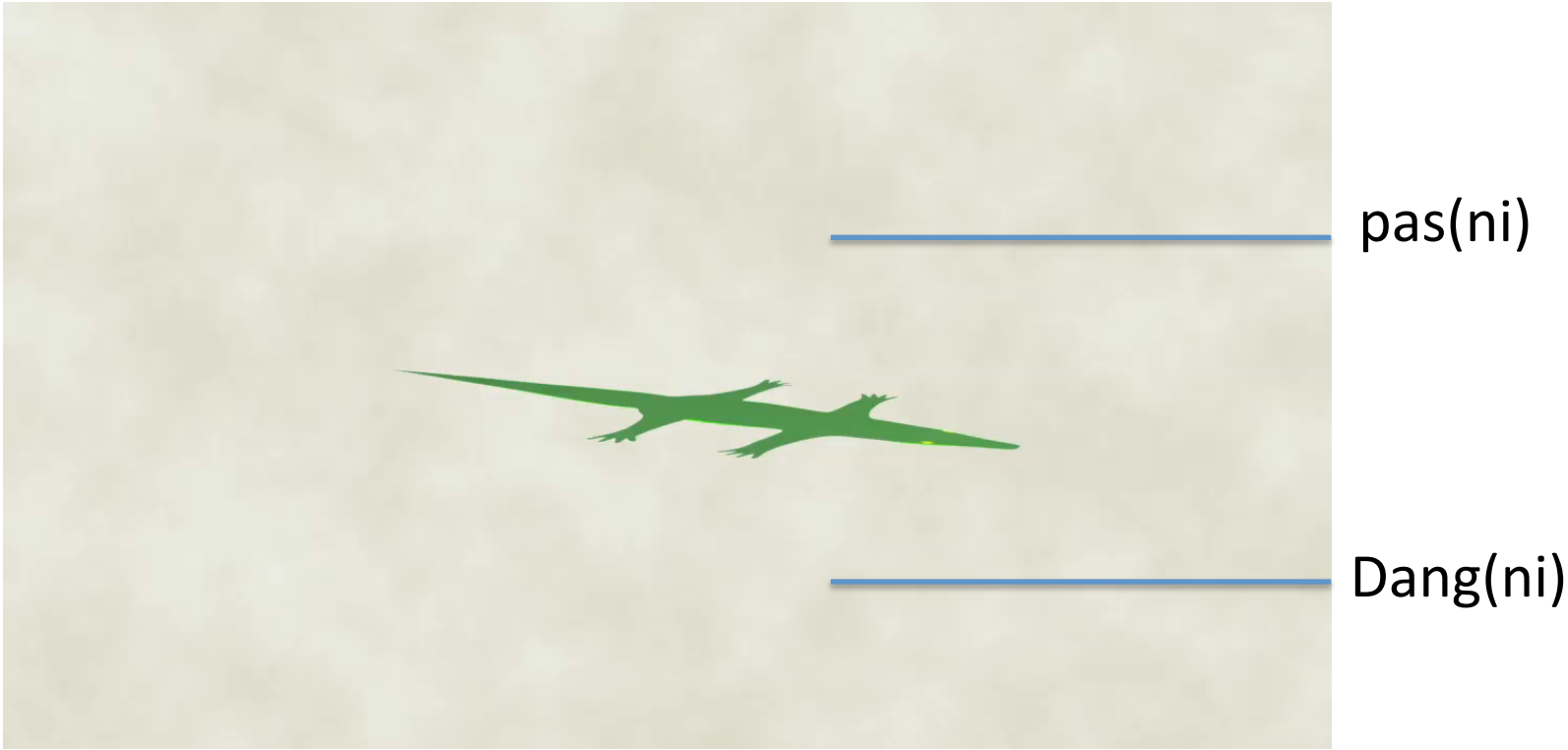


4. The algorithm … or trying to get there

- The contrast dang <> pas
  b. identifying convexity … in animate beings



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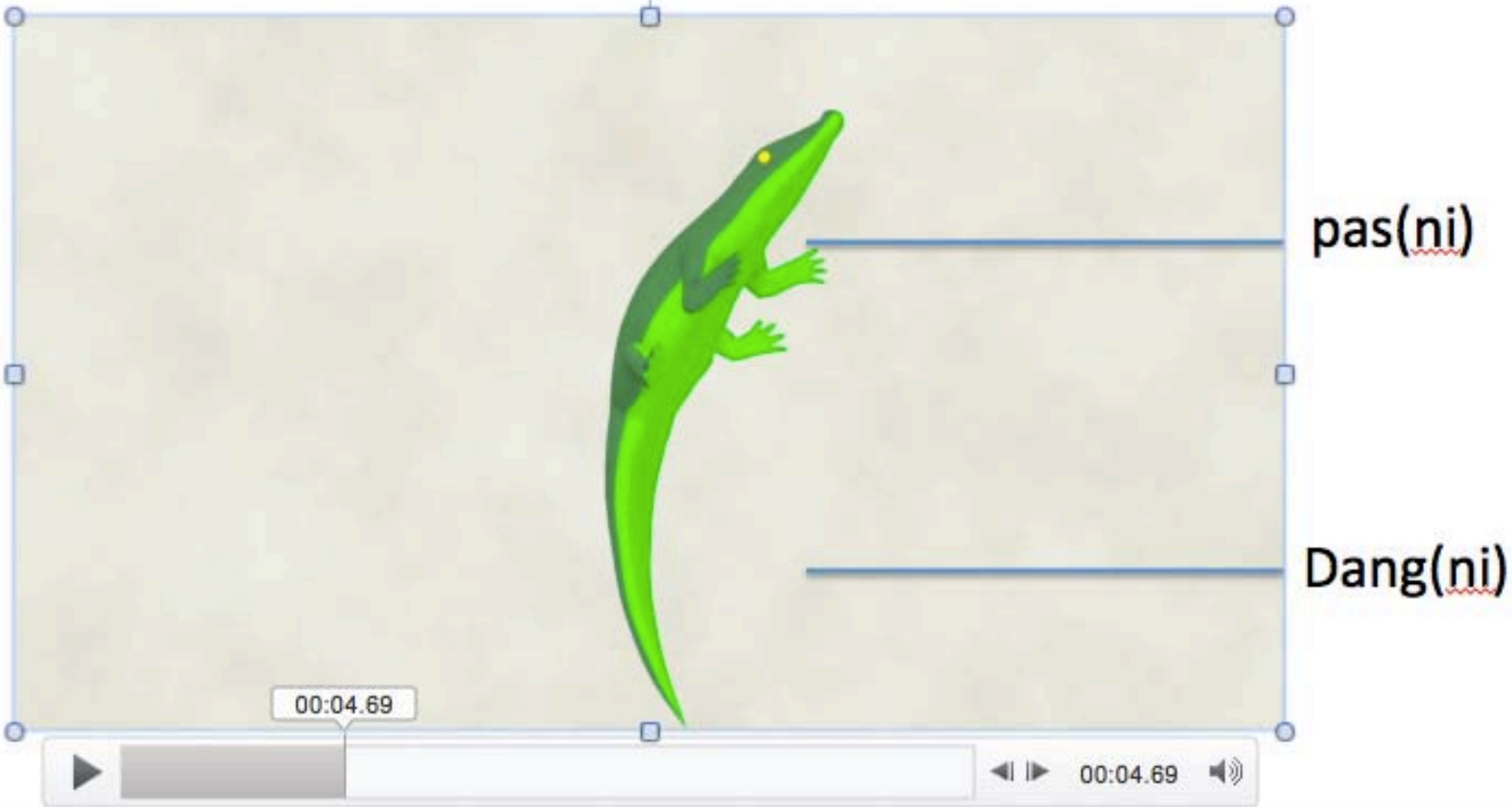

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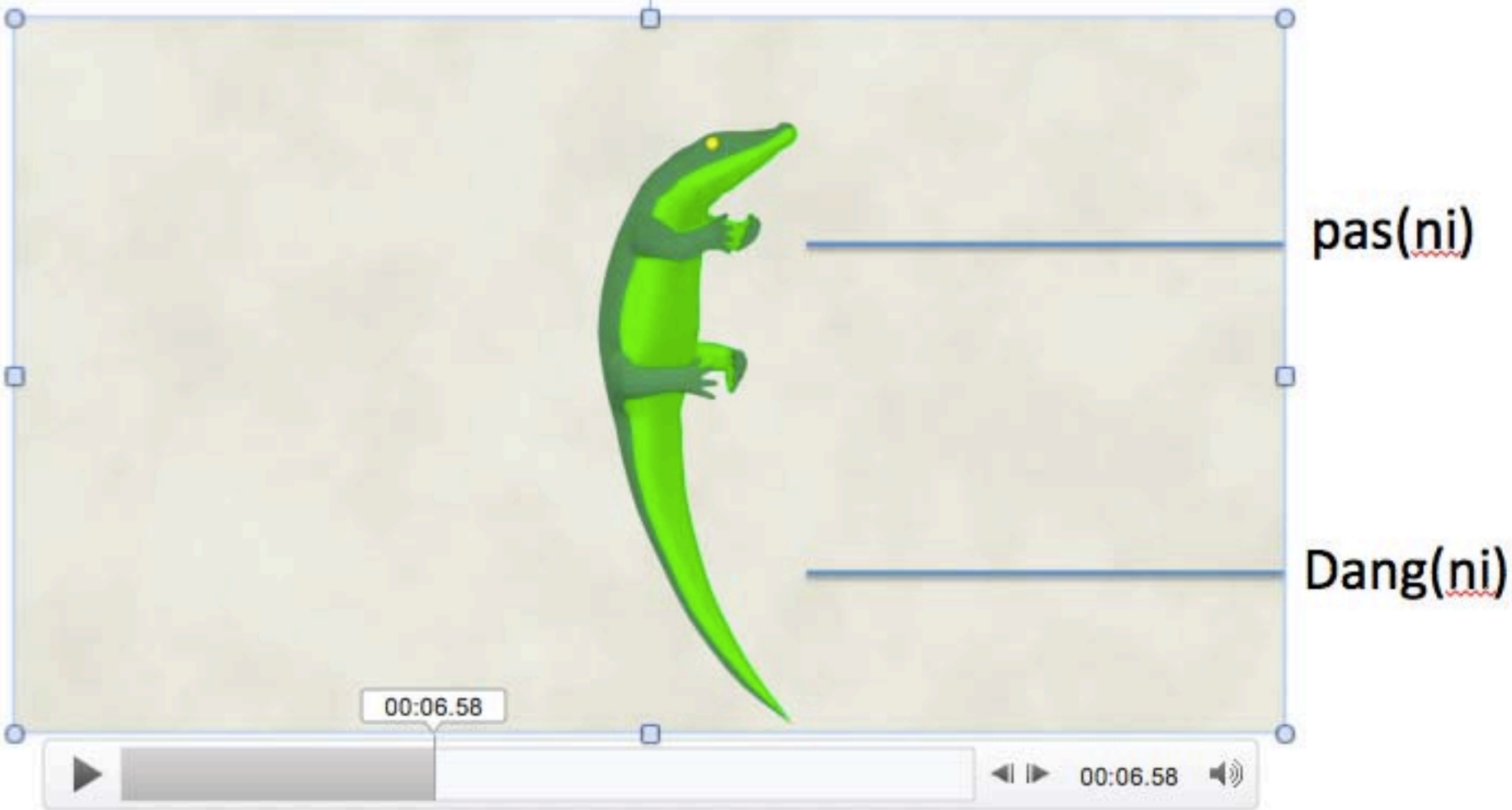

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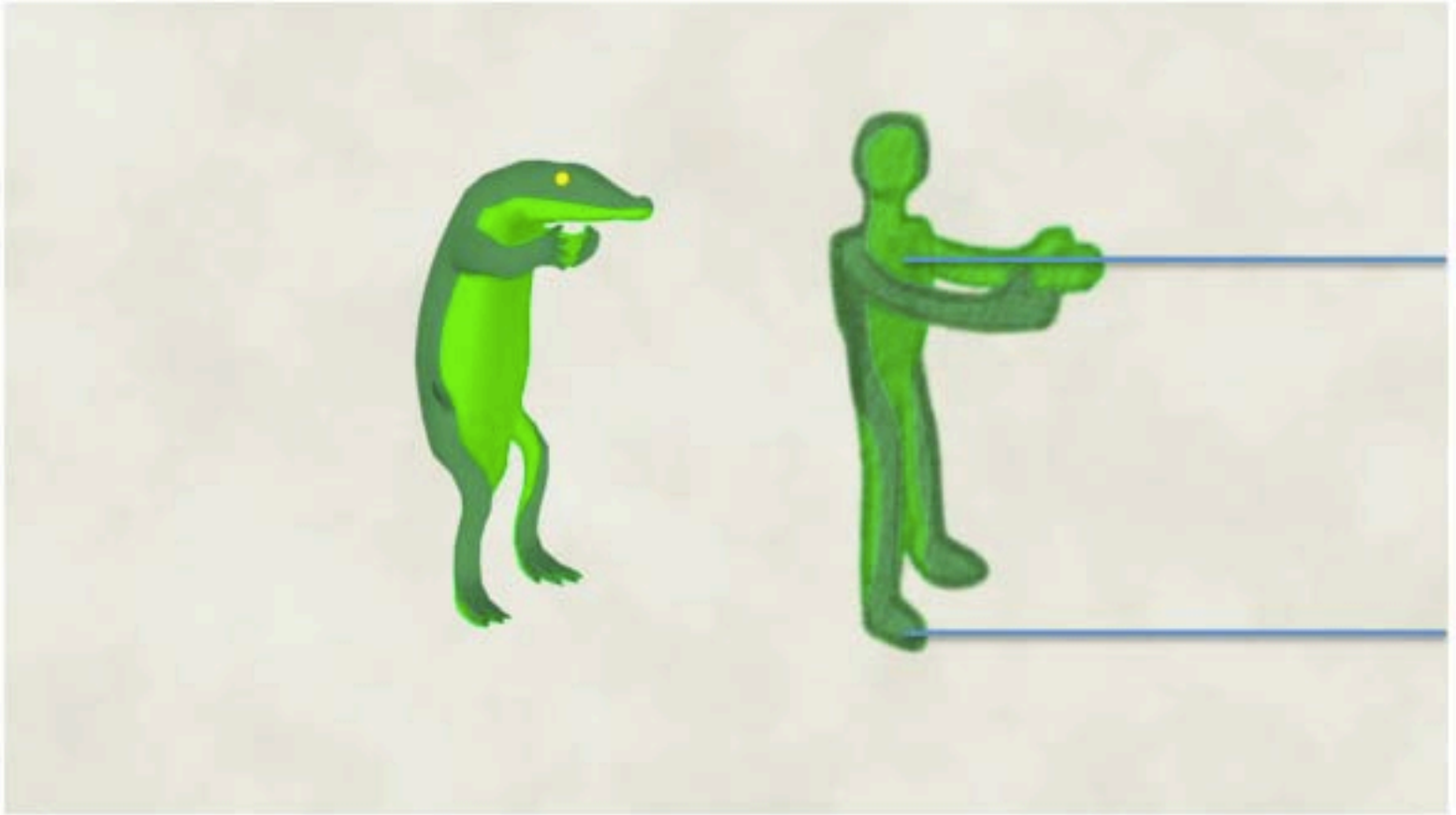

4. The algorithm … or trying to get there

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  c. identifying convexity … in inanimate beings

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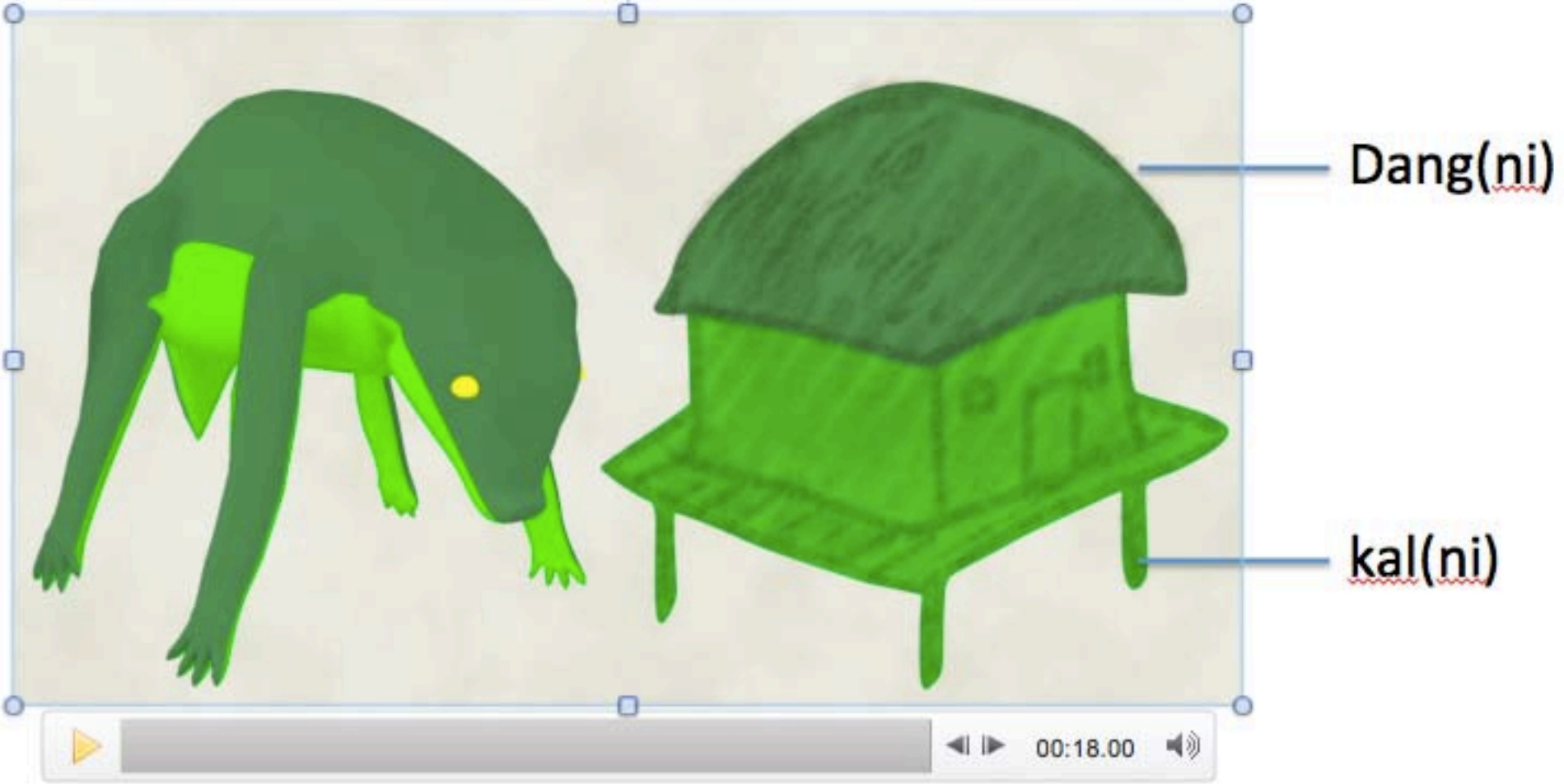

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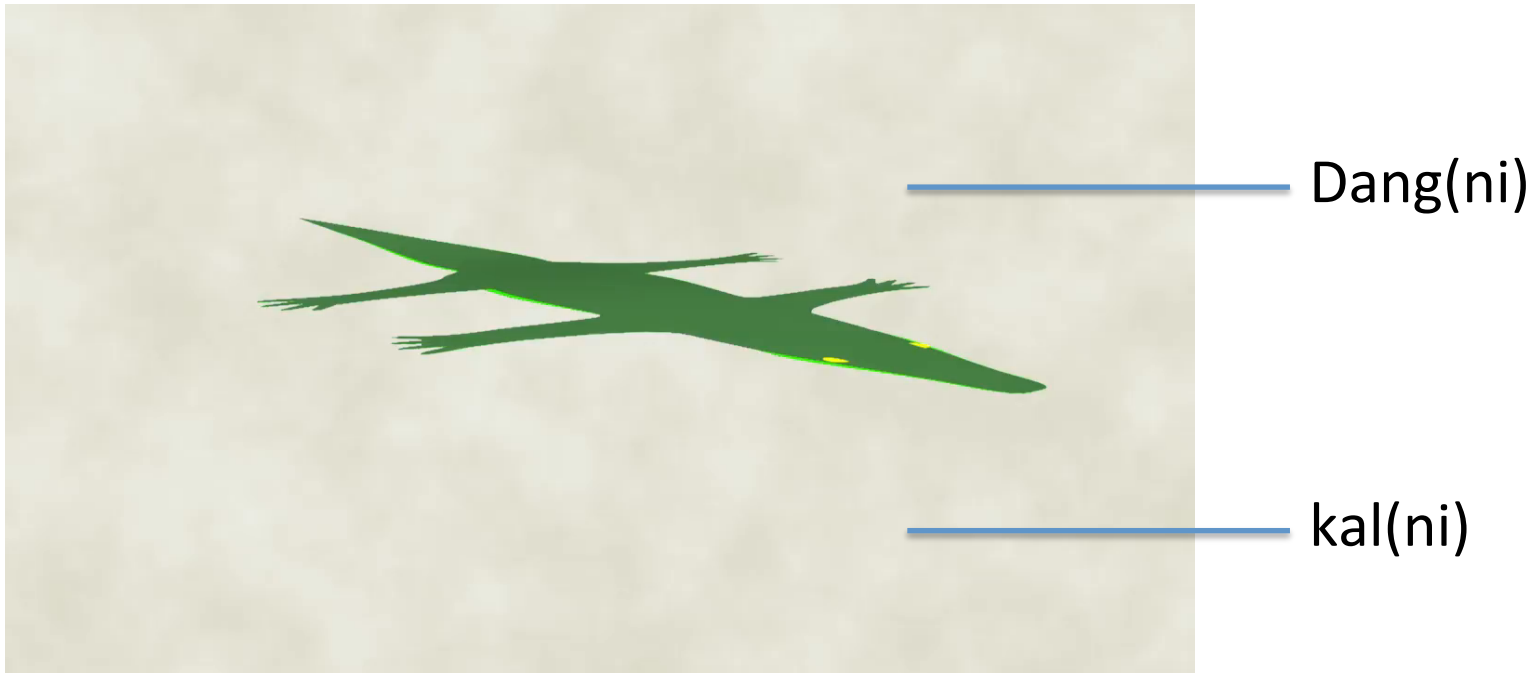

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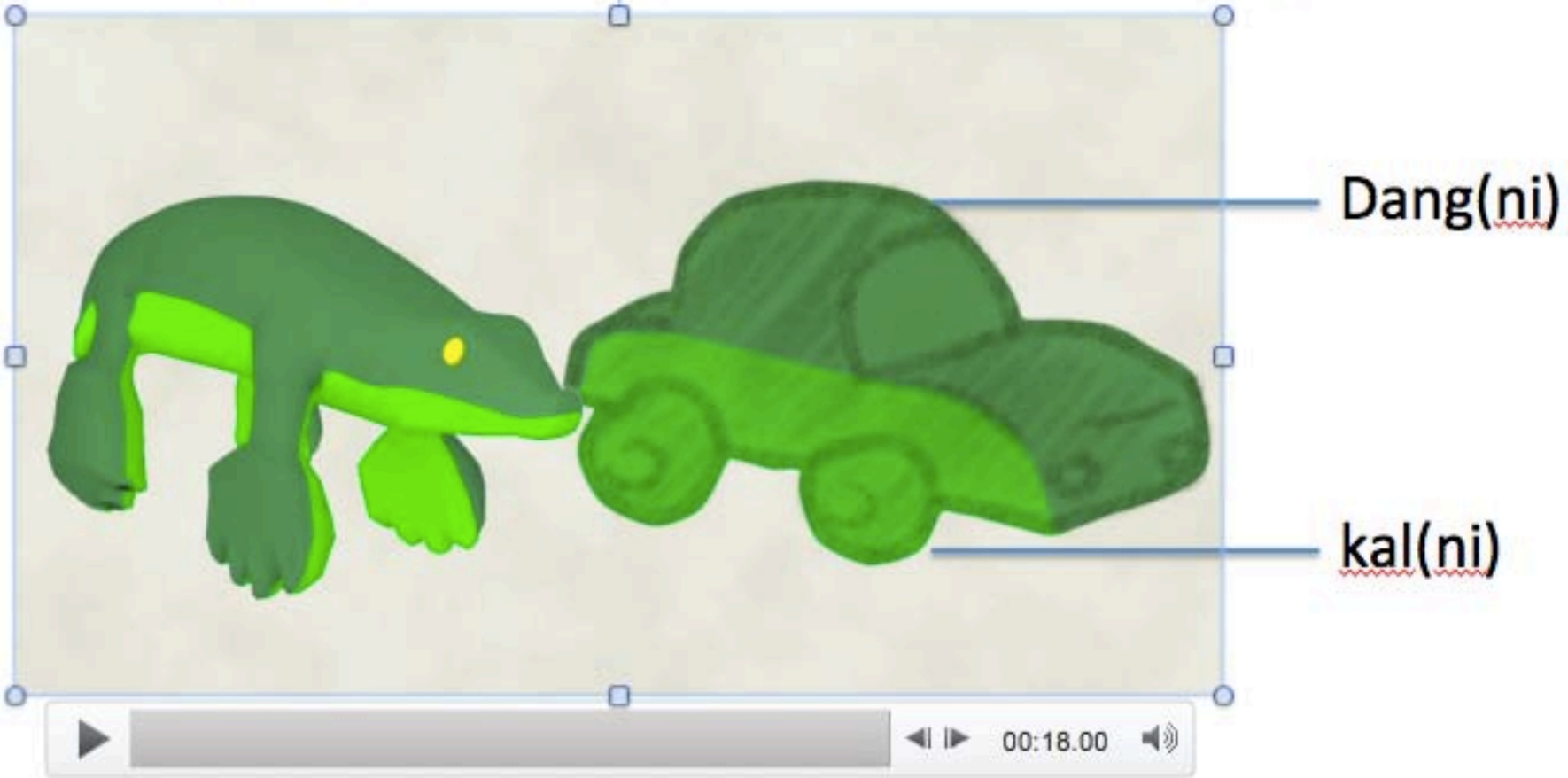

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5. Deriving the plant-meronyms from the algorithm

a. Dang vs pas

Convexity: *bas*

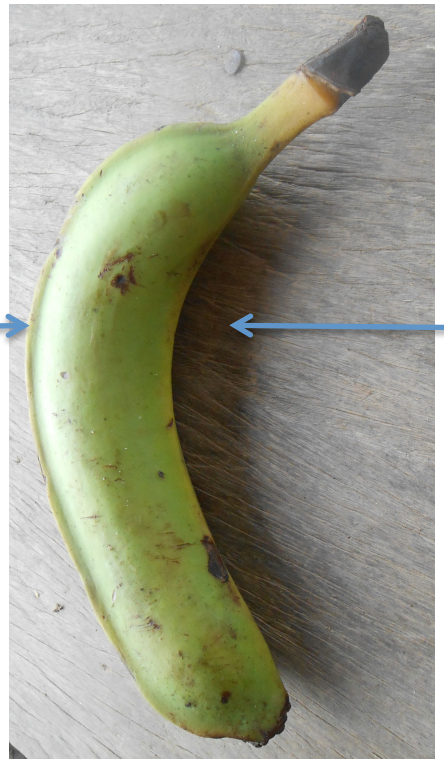
Dang-ni >> pas-ni / muh-ni

5. Deriving the plant-meronyms from the algorithm

a. Dang vs pas: *wakisa*

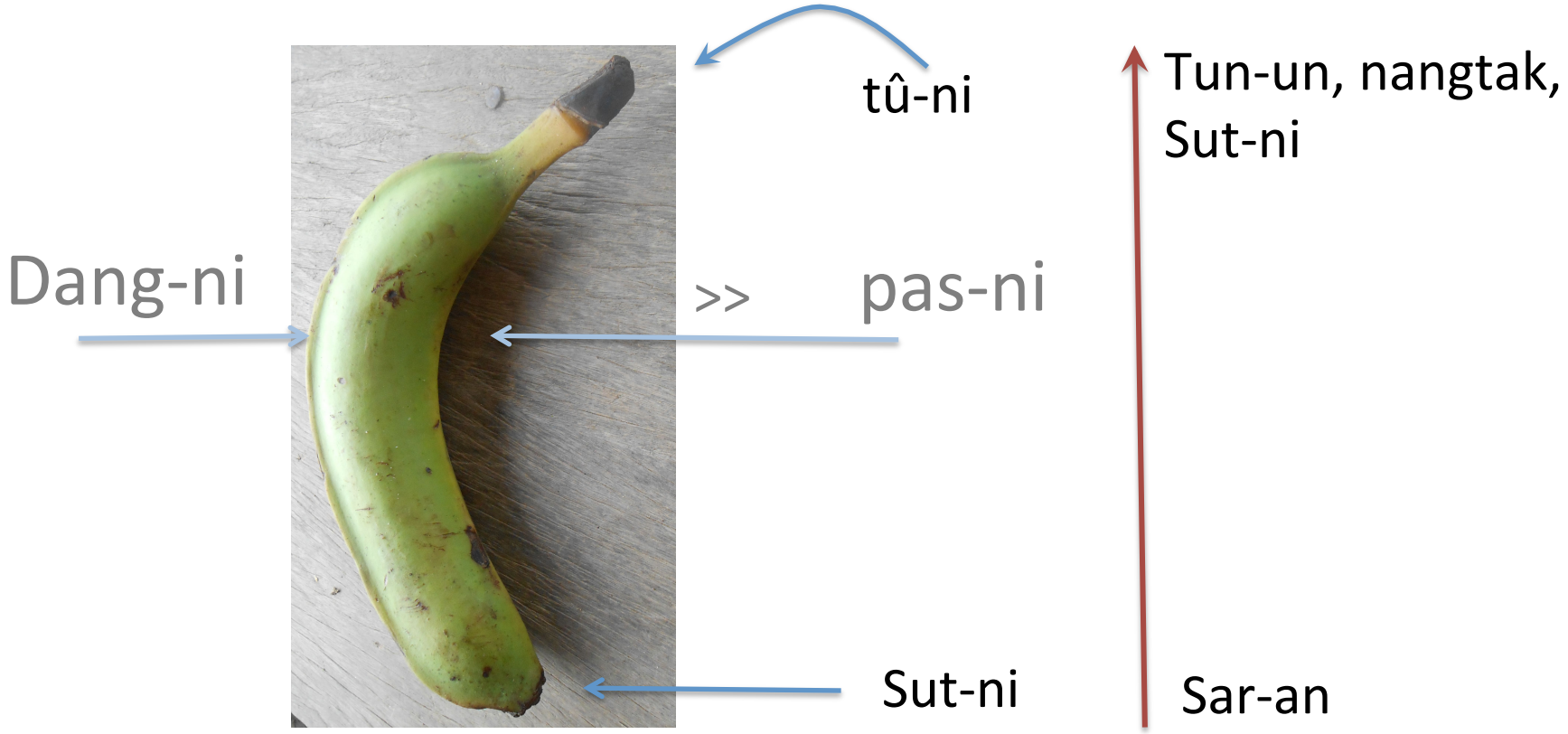
Convexity… no *pan*

Dang-ni >> pas-ni



5. Deriving the plant-meronyms from the algorithm

b. Axis, directionality and ends : *wakisa*



5. Deriving the plant-meronyms from the algorithm

b. Axis, directionality and ends : *wakisa*

The interesting case of 'bananos'

wakisa tunun

Tun-un, nangtak, sutni

kubam

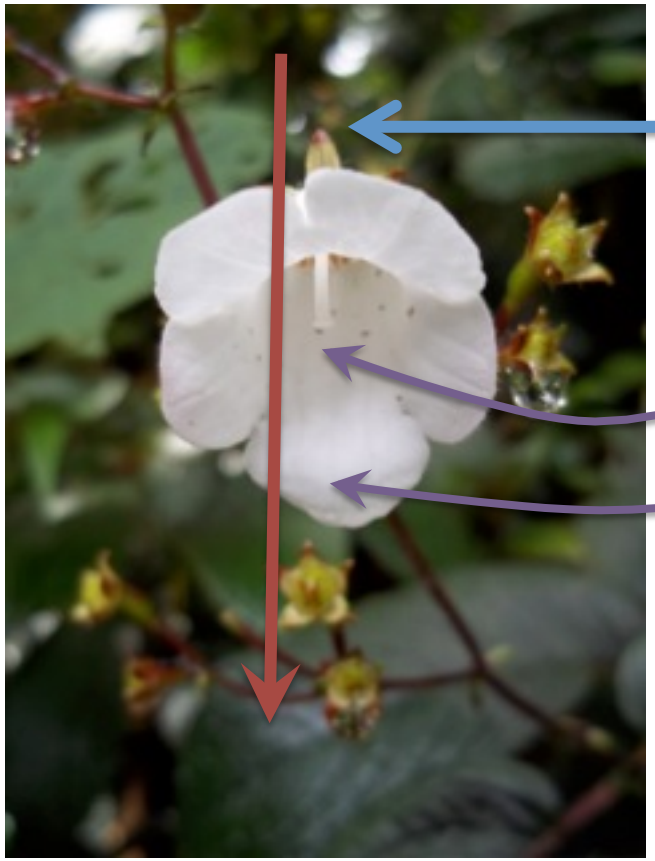
Sut-ni

Sar-an

5. Deriving the plant-meronyms from the algorithm

b. Axis, directionality and ends …

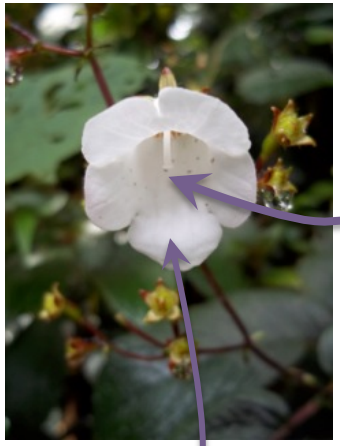
Dîpulu



5. Deriving the plant-meronyms from the algorithm

c. Other …

Wah



Udun **wah**-ni

sinin**wah**

Rarah-ni

5. Deriving the plant-meronyms from the algorithm

d. Volumes: Mak, minik

Minik **kuh**-ni-**bil** !!

5. Deriving the plant-meronyms from the algorithm

d. Volumes: Bâ

(dibasta) bânpah

Pan bânpas

Pan bânpas isning !!

5. Deriving the plant-meronyms from the algorithm

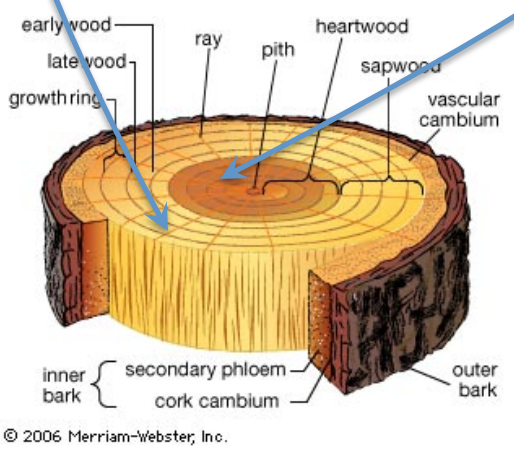
d. Volumes: Bâ

Pan bânpas

Pan bânpas isning

Ting-ni

ûntak



5. Deriving the plant-meronyms from the algorithm

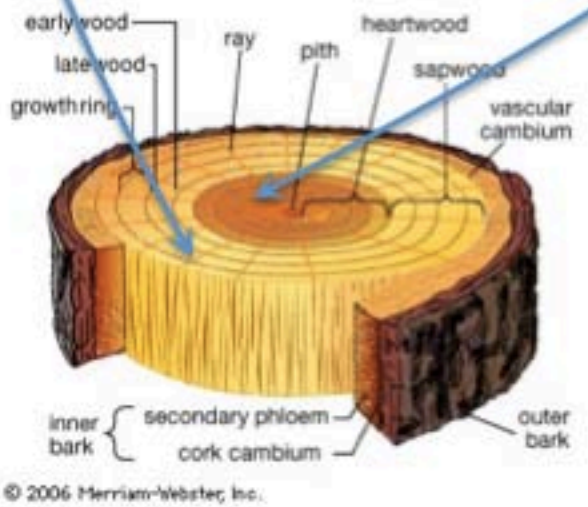
d. Volumes: Bâ

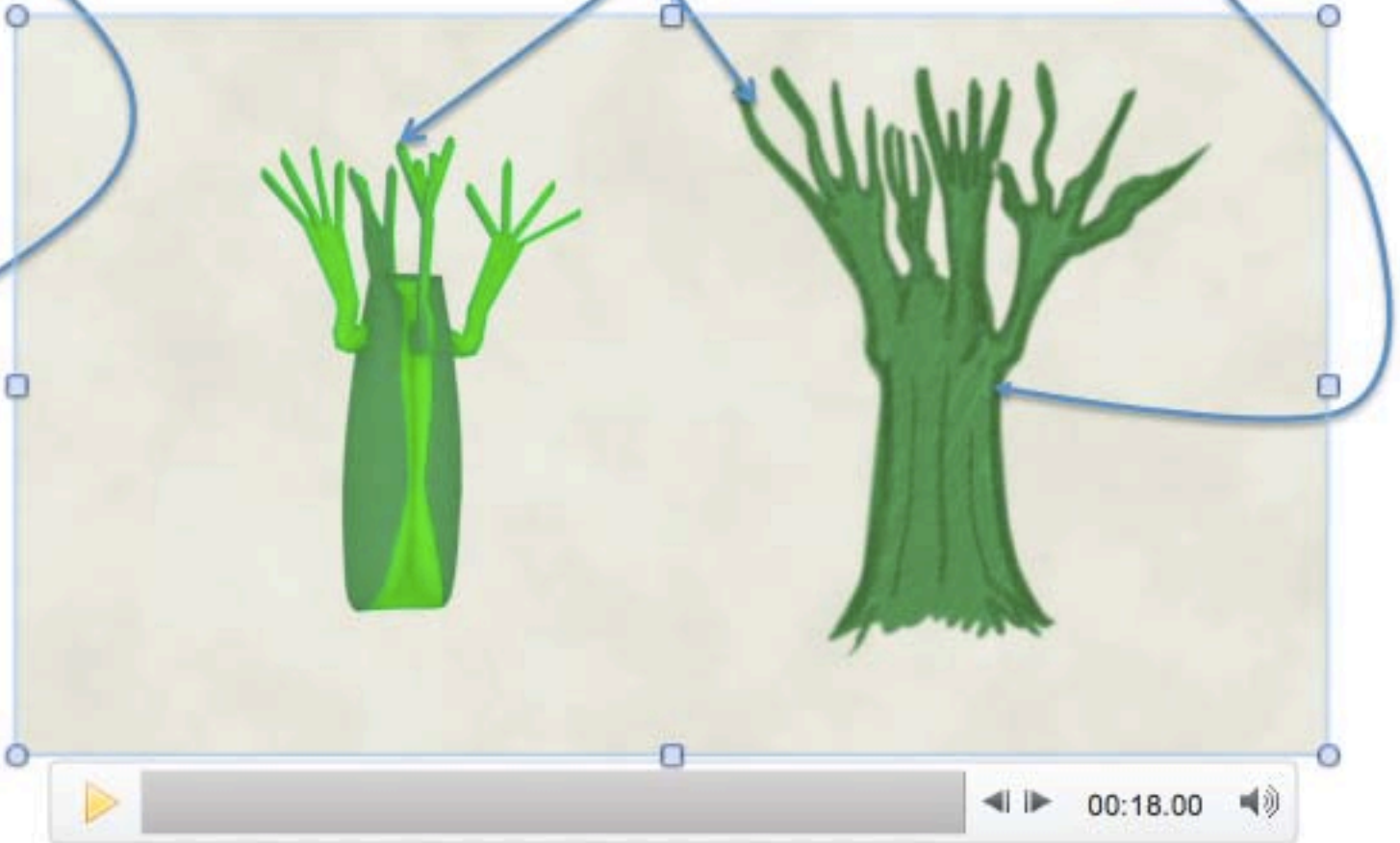
Pan bânpas

Pan bânpas isning

Ting-ni

ûntak





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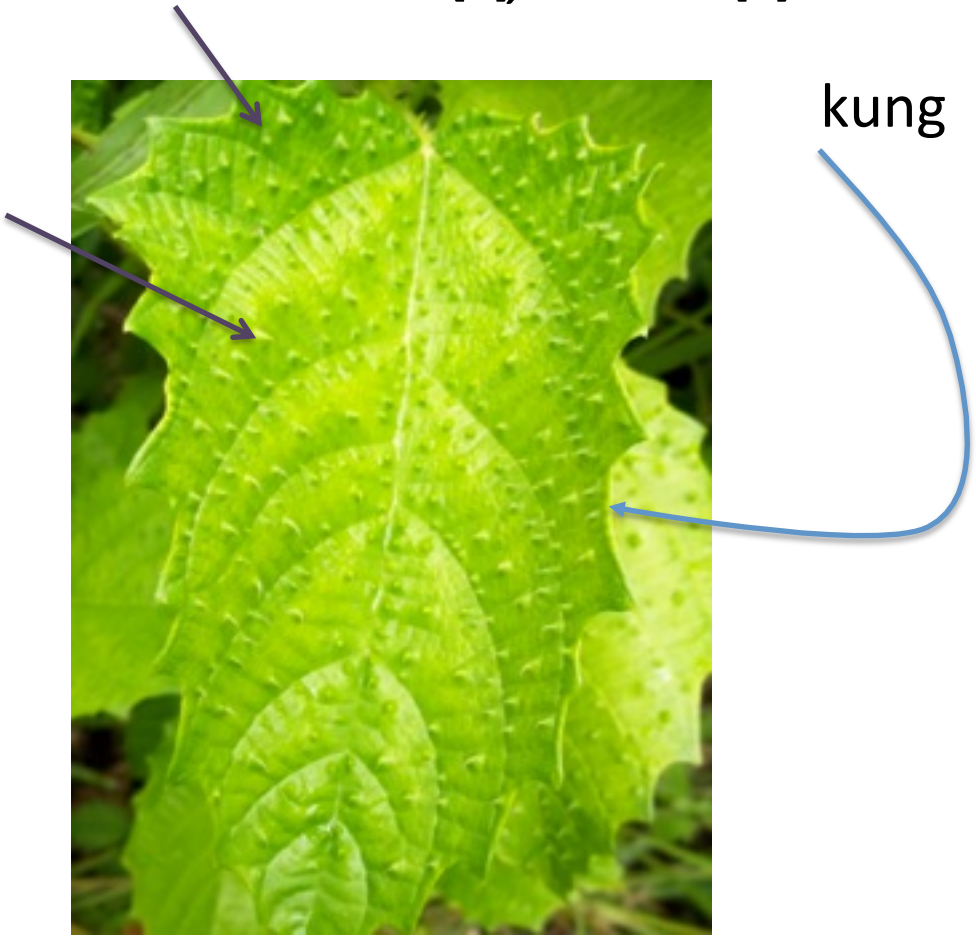
Protuberances: *Wakal* [P], *ukum* [T]



5. Deriving the plant-meronyms from the algorithm

Protuberances: *Kirinmak*

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6. Conclusions.

– We have documented the following meronyms in the plant domain:

Facet	Volume 3D (?)flexible	Extension/protrusion/ ends	Column 3D rigid	Border	Negative Space
√ dang	√ bâ	√ kal	√ pan	√ kung	√ rahrah
√ muh	√ mak	√ ting	baril		sulinh
√ pas	√ tun	√ tû			tinapas
pirin	tap	√ sut			
sait	√ isning	nangtak			
√ sar	√ kuhbil	√ wakal, ukum		?? kirinmak	
	√ wah	√ bas		?? ûntak	
		√ rikni			

6. Conclusions.

– Some issues:

Facet	Volume 3D (?)flexible	Extension/ protrusion/ ends	Column 3D rigid	Border	Negative Space
√ dang	√ bâ	√ kal	√ pan	√ kung	√ rahrah
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pirin	tap	√ sut			
sait	√ isning	nangtak			
√ sar	√ kuhbil	√ wakal, ukum		?? kirinmak	
	√ wah	√ bas		?? ûntak	

- Which ones can be self-standing objects (bas, wah, mak, tun) ;
  which ones must be parts (e.g., bâ, dang, sut …)
- Productivity: new vs. established

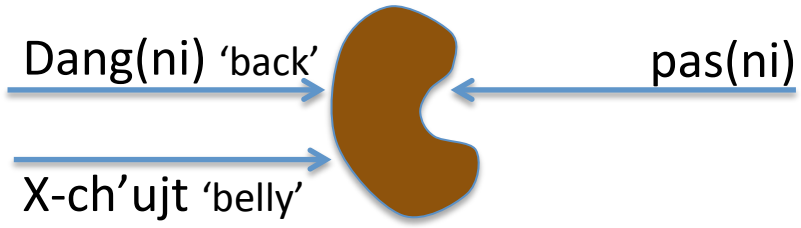
6. Conclusions.

– Some issues:

➢Productivity: new vs established

6. Conclusions.

- At a more general level:
  - Algorithmic systems may differ across cultural coordinates…



Mayangna

Levinson (94), on Tzeltal

  - … but within some set of options determined by processing/computing properties of the human brain.

TINGKI PALNI! PAHA PALN!

¡GRACIAS!

THANKS!!

… and thanks to the Envision Center at Purdue, for the video-clips!

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