

Demonstratives in ʔayʔaʃuθəm: Managing joint attention through gesture and salience

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Demonstratives and two types of entities

Demonstratives are used to refer to entities — but not all entities are the same.

Exophoric entities can be located in the external world, and hence pointed at, while **non-exophoric** entities defy such a localization (cf. Lücking 2018; Grosz 2019).



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Demonstratives and two types of entities

In languages like English or German, the same demonstratives are used for exophoric and non-exophoric entities.

(1) **Exophoric:** I want this piece.



(2) **Non-exophoric:** He arrived this morning.



Gesture and (non)-exophoric entities

ʔayʔajuθəm (a.k.a. Comox-Sliammon; ISO 639-3: coo) uses different demonstratives for these cases:

(3) [Exophoric] Context: *Gesturing to someone beside me.*

hɛʈ	tɛʔɛ	ʔət ^θ gaqaθ.
hiʈ	tiʔi	ʔət ^θ =gaqaθ
COP	PROX.DEM	1SG.POSS=husband

'This is my husband.'

(4) [Non-exophoric] Context: *Talking about the weather forecast.*

saymot k ^w a səm	puʔəm	tiḥ	k ^w ʊtayitən.
say-mut=k ^w a=səm	puʔ-əm	tiḥ	k ^w ətayitən
strong-INT=RPT=FUT	wind-MDL	PROX.DEM	afternoon

'There's going to be strong wind this afternoon.'

Demonstratives in ʔayʔaʃuθəm

Consequently, we argue that ʔayʔaʃuθəm has two different paradigms of demonstratives:

- **Gesture Demonstratives (GDEMs):**

require co-speech gestures to identify the referent, and are consequently compatible with **exophoric** referents only.

- **Salience Demonstratives (SDEMs):**

rely on contextual salience to identify a unique referent, and can consequently be used with both **exophoric** and **non-exophoric** referents.

Demonstratives and gesture

- The existence of these two distinct sets of demonstratives reinforces the claim that gesture ...
 - ... has semantic import (e.g. Lascarides & Stone 2009; Ebert et al. 2020) which contributes in a special way to the meaning of demonstratives
 - ... and may be required to accompany certain morphemes, e.g. $\text{ʔayʔaʃu\theta\text{ə}m}$ GDEMs.
- The interplay of the two types of demonstratives in discourse also illustrates how demonstratives can be used to establish and track joint attention.

Goals for this presentation

- Argue for a distinction between the two types of demonstratives in terms of whether gesture is required for establishing reference.
- Provide an analysis for aspects of meaning shared by the two types of demonstratives: evidentiality and deixis.
- Explore the use of $\text{ʔayʔa}\text{ju}\theta\text{əm}$ gesture demonstratives with co-speech gesture illustrating manner, quality, and degrees (e.g. König & Umbach 2018).

Roadmap

- Language background and methodology
- Previous literature
- Data and analysis
 - Evidentiality
 - Deictic distance
 - Gender & number
 - Gesture vs. salience
- Further uses: Quality, degree, and manner
- Discussion



Language background

Language status

- Highly endangered due to impacts of colonialism, especially the residential school system: fewer than 47 speakers remaining (FPCC 2018), all over 60 years of age.
- Group of dedicated younger community members working to reclaim their language and pass it on to their children and grandchildren.

Fieldwork

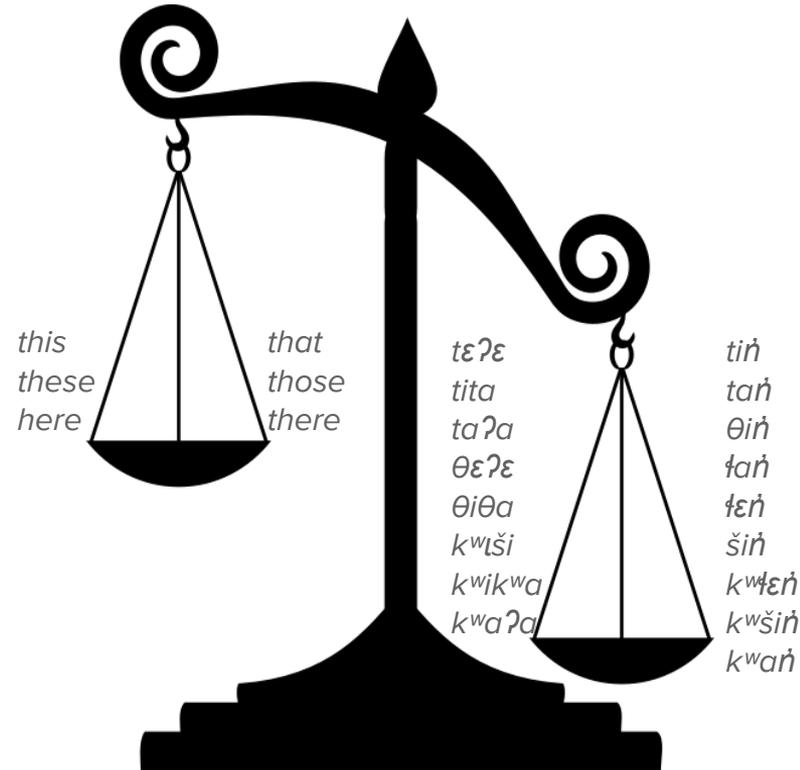
- We worked with five speakers on this project specifically.
- Variety of semantic fieldwork methodologies (cf. Matthewson 2004):
 - Presenting a verbal context (in English or as a short ṽayṽajuθəm dialogue) and asking our speaker to provide an ṽayṽajuθəm utterance to fit that context or judge a sentence provided by the researcher.
 - Short storyboards that manipulated whether an object was in the joint attention of two characters engaged in a dialogue.
- This documentation will form the basis for a chapter in a teaching grammar designed for use in language revitalization.



Demonstratives in ʔayʔajuθəm

Demonstratives in ʔayʔajuθəm

- The demonstrative systems in Salish languages are notoriously complex (cf. Suttles 2004; Montler 2007).
- In ʔayʔajuθəm, at least 17 different demonstrative forms are currently still in use.
- They encode gender, number, deictic distance, but also evidentiality and gesture/salience.



Previous descriptions

Previous documentation mostly provides descriptive labels with researchers noting different distinctions.

Boas
(1890)

GENDER

NUMBER

Davis
(1978)

IMPORTANCE

DISTANCE

Harris
(1981)

GENDER

DISTANCE

PRESENCE

Watanabe
(2003)

GENDER

DISTANCE

Previous descriptions

We introduce an additional distinction which allows us to organize the forms into 2 paradigms.

Boas
(1890)

GENDER

NUMBER

Davis
(1978)

IMPORTANCE

DISTANCE

Harris
(1981)

GENDER

DISTANCE

PRESENCE

Watanabe
(2003)

GENDER

DISTANCE

Huijsmans & Reisinger
(Present Day)

GENDER

NUMBER

DISTANCE

EVIDENTIALITY

GESTURE vs.
SALIENCE

Evidentiality



Evidentiality

The demonstratives in ʔayʔaʃuθəm encode evidentiality. They exhibit the same evidential distinctions as the determiners (cf. Reisinger et al. 2020).

- **Current Direct Evidence** (CDE)
= speaker has direct evidence for the referent at the utterance time
- **Previous Direct Evidence** (PDE)
= speaker had direct evidence prior to the utterance time
- **Evidence-Neutral Forms**
= no evidential information is encoded

Evidentiality: Current Direct Evidence

The *t*-initial demonstratives are used when the speaker has CDE.

- (5) *Context: A and B are seated at the kitchen table. A asks B for the salt, which is in front of B. B says:*

niš {tɛʔɛ / #kʷlʃi}.
niš {tiʔi / #kʷəši}
be.here {CDE.DEM / DEM}
'Here it is.'

- (6) *Context: My brother and I are looking through an old picture album. There's a picture of a guy I kind of recognize but can't quite place.*

qʷayɯn hɛt {tiŋ / #šɯn} ʔəms jɛʔjɛ.
qʷayɯn hiʔ {tiŋ / #šɯn} ʔəms=jaʔja
maybe COP {CDE.DEM / PDE.DEM} 1PL.POSS=relative
'I think this one's our relative.'

Evidentiality: Previous Direct Evidence

The š-initial demonstratives are used when the speaker has PDE.

(7) *Context: Someone shows up at the lodge that I don't know but everyone else does. After he gets in his car and leaves, I take advantage of a break in the conversation to ask:*

gət ga {š^h / #t^h / #k^wš^h}?
gat=ga {š^h / #t^h / #k^wš^h}
who=DPRT {PDE.DEM / CDE.DEM / DEM}
'Who was that?'

Evidentiality: Evidence-Neutral Forms

The k^w -initial demonstratives are evidence neutral (and consequently compatible with indirect evidence).

(8) *Context: Marianne hears a male voice outside at night. She says to Daniel:*

čiyítč	k^w tumiš	ʔək ^w ʔasqič.	gət čε
čiy-it=č	k^w =tumiš	ʔə= k^w =ʔasqič	gat=ča
hear-CTR=1SG.SBJ	DET=man	OBL=DET=outside	who=INFER

{ k^w šiḥ / #tañ / #šiḥ}?

{ k^w šiḥ / #tañ / #šiḥ}

{DEM / CDE.DEM / PDE.DEM}

‘I hear someone outside. Who could that be?’

Evidentiality: Evidence-Neutral Forms

A special form, *k^waḥ*, is used when referring to discourse segments:

(9) *Context: At the end of an instruction about pregnancy.*

natuwɔmɔt

na-t-uw-əm-ʔut

say-CTR-1PL.OBJ-PST

‘They used to say that to us.’

ʔək^w **k^waḥ**

ʔə=k^w=k^waḥ

OBL=DET=SDEM

taʔat.

taʔat

HAB

(Watanabe 2021:102)

Analysis: A situational approach to evidentiality

To capture the evidential contribution of the demonstratives, we adopt a situational analysis, following (Speas 2010; Kalsang et al. 2013; Reisinger et al. 2020).

- **Information situation** (IS / s_I) constitutes the minimal, contextually salient situation in which the speaker accesses evidence for the referent's existence
- **Discourse situation** (DS / s_D) constitutes the salient situation in which the speaker utters p .

Analysis: A situational approach to evidentiality

For the Current Direct Evidence forms, the referent x has to be part of the IS (= direct evidence), and the DS has to be equal to or part of the IS as well (= current evidence)

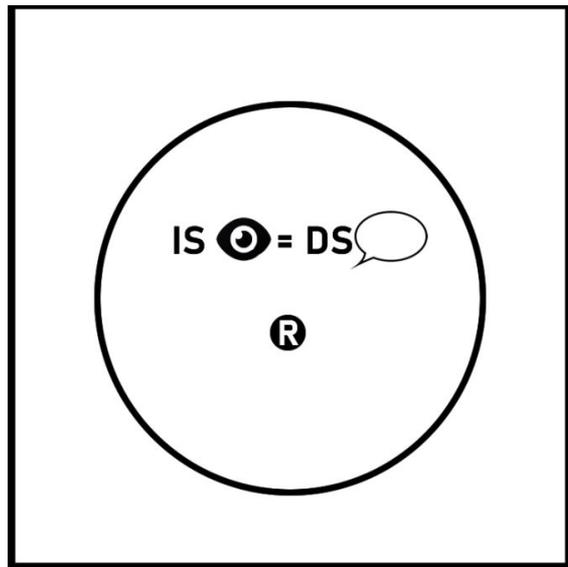
$$(10) \quad \llbracket \text{CDE} \rrbracket^{\text{SD}}(x)(s_I) = 1 \text{ iff } [(x < s_I) \wedge (s_D \leq s_I)]$$

For the Previous Direct Evidence forms, the referent x has to be part of the IS (= direct evidence), and the DS is not equal to or part of the IS (= previous evidence)

$$(11) \quad \llbracket \text{PDE} \rrbracket^{\text{SD}}(x)(s_I) = 1 \text{ iff } [(x < s_I) \wedge (s_D \not\leq s_I)]$$

The evidence-neutral forms do not encode evidentiality.

Conceptualizing Current Direct Evidence



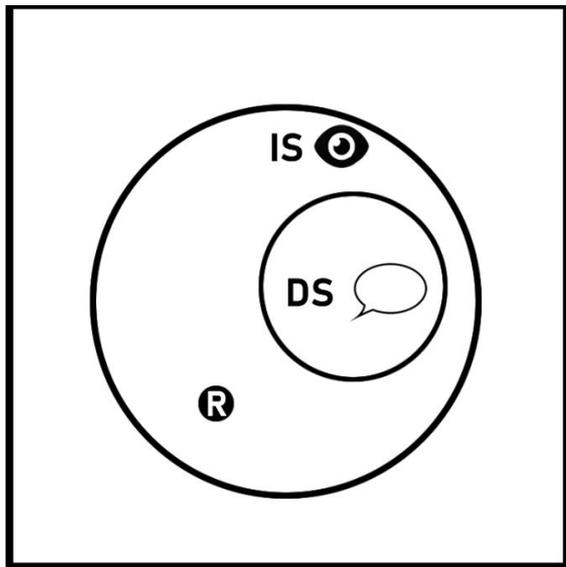
Context: Introducing the man beside you.

hɛt	tɛʔɛ	ʔət ^θ gaqaθ.
hiʔ	tiʔi	ʔət ^θ =gaqaθ
COP	CDE.DEM	1SG.POSS=husband

‘This is my husband.’

Figure 1: Visualization of CDE

Conceptualizing Current Direct Evidence



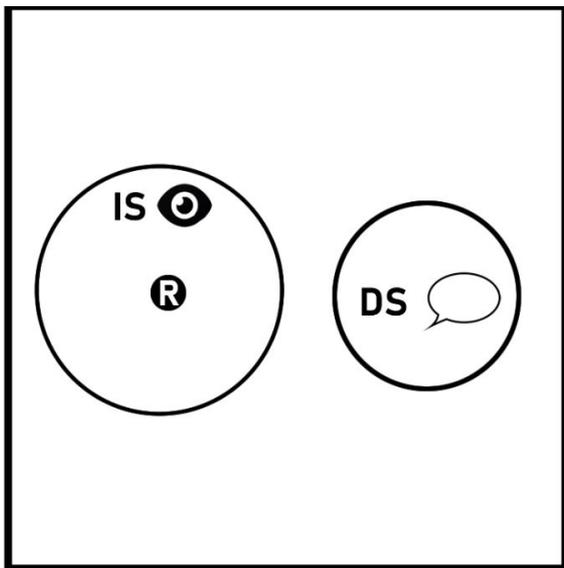
Context: Pointing to someone across the room.

hɛt	tita	ʔət ^θ gaqaθ.
hiʔ	təyta	ʔət ^θ =gaqaθ
COP	CDE.DEM	1SG.POSS=husband

‘That is my husband.’

Figure 2: Visualization of CDE

Conceptualizing Previous Direct Evidence



Context: Someone shows up at the lodge that I don't know but everyone else does. After he gets in his car and leaves, I take advantage of a break in the conversation to ask:

gət ga ših?
gat=ga ših
who=DPRT PDE.DEM
'Who was that?'

Figure 3: Visualization of PDE

Denotations

t-initial demonstratives forms encode CDE. Beginning with this component, we can start building denotations for the proximal CDE demonstratives *tε?ε* and *tiʰ*.

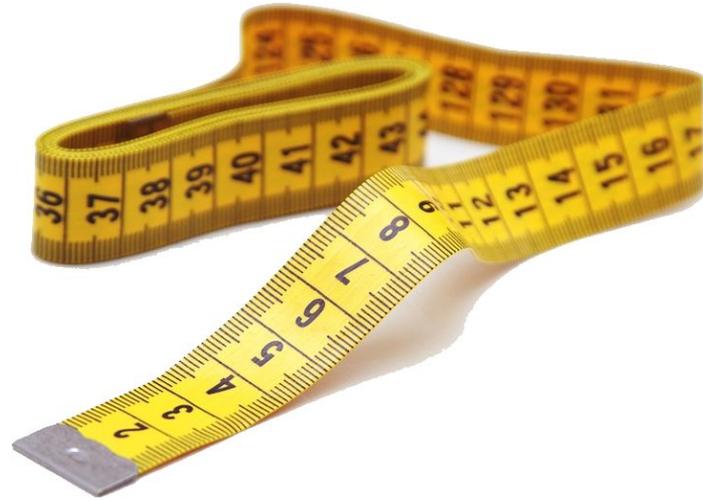
$$(12) \quad \llbracket t\varepsilon?\varepsilon \text{ NP} \rrbracket^{\text{SD}} = \lambda s_l: \dots \text{CDE}(x)(s_l) \dots$$

$$(13) \quad \llbracket tiʰ \text{ NP} \rrbracket^{\text{SD}} = \lambda s_l: \dots \text{CDE}(x)(s_l) \dots$$

$$\text{Where } \llbracket \text{CDE} \rrbracket^{\text{SD}}(x)(s_l) = 1 \text{ iff } [(x < s_l) \wedge (s_D \leq s_l)]$$

Competition between forms

We assume that the evidential forms are more informative than the evidence-neutral forms and so preferred whenever the context supports their use.



Deictic Distance

Deictic Distance

The demonstratives in ʔayʔaʃuθəm also encode deictic distance (i.e. the distance between the referent and the speaker at the time and the place of the utterance):

- **Proximal Forms** (PROX)
≈ the referent is within reach of the speaker
- **Near-Distal Forms** (NDIST)
≈ the referent is out of reach, just beyond the area occupied by the speaker
- **Distal Forms** (DIST)
≈ the referent is far from the speaker
- **Distance-Neutral Forms**
≈ no deictic information is encoded

Deictic Distance: Proximal Forms

(14) *Context: A and B are seated at the kitchen table. A asks B for the salt, which is in front of B. B says:*

niš {tɛʔɛ / #tita}.
niš {tiʔi / #təỵta}
be.here {PROX.DEM / NDIST.DEM}
'Here it is.'

(15) *Context: My brother and I are looking through an old picture album. I have it in my lap. There's a picture of a guy I kind of recognize but can't quite place.*

qʷayɪn hɛt {tiɲ / #taɲ} ʔəms jɛʔjɛ.
qʷayɪn hiɫ {tiɲ / #taɲ} ʔəms=jaʔja
maybe COP {PROX.DEM / DIST.DEM} 1PL.POSS=relative
'I think this one's our relative.'

Deictic Distance: Near-Distal Forms

(16) *Context: A and B are seated at the kitchen table. A has forgotten where she left her purse. A says, thinking out loud “I wonder where I left my purse”. B replies pointing to a purse on the kitchen counter:*

nε? {tita / #tε?ε}.
ni? {təỵta / #ti?i}
be.there {NDIST.DEM / PROX.DEM}
'There it is.'

(17) *Context: We're sitting at the table. I ask you where the salt is. You point to the end of the table and tell me:*

nε? {tita / #ta?a}.
ni? {təỵta / #ta?a}
be.there {NDIST.DEM / DIST.DEM}
'It's there.'

Deictic Distance: Distal Forms

(18) *Context: You're pointing me in the general direction of Freddie's house. We can't see his house from here, but we're looking towards the general area.*

nεʔ	{ taʔa / # tita }	šɛ ʔayɛʔs.
niʔ	{ taʔa / # təyʔta }	šə=ʔayaʔ-s
be.there	{DIST.DEM / NDIST.DEM}	DET=house-3POSS

'His house is over there.'

(19) *Context: We're hiking and looking out for a good place to picnic. I spot a sunny clearing through the trees:*

hɛ səm	{ tañ / # tiñ }	ʔaʔjiyuk ^w	ʔəms θo	k ^w anačɪm.
hiʔ+səm	{ tañ / # tiñ }	ʔaʔjiyuk ^w	ʔəms=θu	k ^w anač-əm
COP+FUT	{DIST.DEM / PROX.DEM}	clearing	1PL.POSS=go	sit-MDL

'We'll go sit in that clearing.'

Deictic Distance: Distance-Neutral Forms

(20) *Context: Listening to a CD.*

hɛhɛwč	ʔismot	kwših	wuwɔmtən.
hihiw=č	ʔəý-sx ^w -mut	kwših'	wuw-əm-tən
really=1SG.SBJ	good-CAUS-INT	SDEM	sing-MD-INSTR

'I really like this song.'

(21) *Context: Marianne hears a male voice outside at night. She says to Daniel:*

čiyítč	kw tumiš	ʔək ^w ʔasqič.	gɛt čɛ	kwših?
čiy-ít=č	kw=tumiš	ʔə=kw=ʔasqič	gat=ča	kwših
hear-CTR\STAT=1SG.SBJ	DET=man	OBL=DET=outside	who=INFER	DEM

'I hear a man outside. Who could that be?'

Analysis: A situational approach to deictic distance

As noted by Diessel and Coventry (2020), the concept of deictic distance also lends itself for a situational analysis.

On the one hand, situations are flexible enough to explain why what counts as proximal may differ from context to context.

On the other hand, if we assume that situations come with spatial and temporal coordinates, they also allow us to make a unified account for spatial deixis (e.g., this chair) and temporal deixis (this night).

Deictic distance

Loosely following Diessel and Coventry (2020), we propose that for the proximal demonstratives, the referent x has to be part of the DS.

$$(22) \llbracket \text{PROX} \rrbracket^{\text{sD}}(x) = 1 \text{ iff } (x < s_D)$$

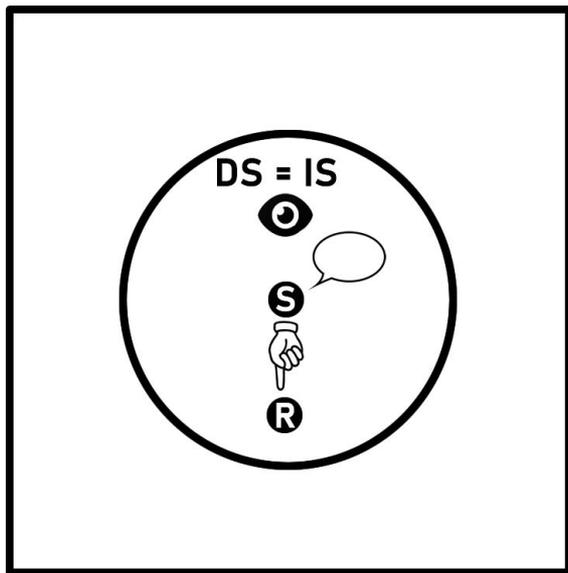
Conversely, x has to be outside of the DS for the distal demonstratives.

$$(23) \llbracket \text{DIST} \rrbracket^{\text{sD}}(x) = 1 \text{ iff } (x \not< s_D)$$

For the near-distal forms, the referent is in a situation s immediately adjacent to the discourse situation. We capture this through introducing an additional adjacency relation ∞ between situations (adopting notation from Krifka 1998).

$$(24) \llbracket \text{ADJACENT} \rrbracket^{\text{sD}}(x) = 1 \text{ iff } \exists s (s \infty s_D) \wedge (x < s)$$

Conceptualizing proximal referents



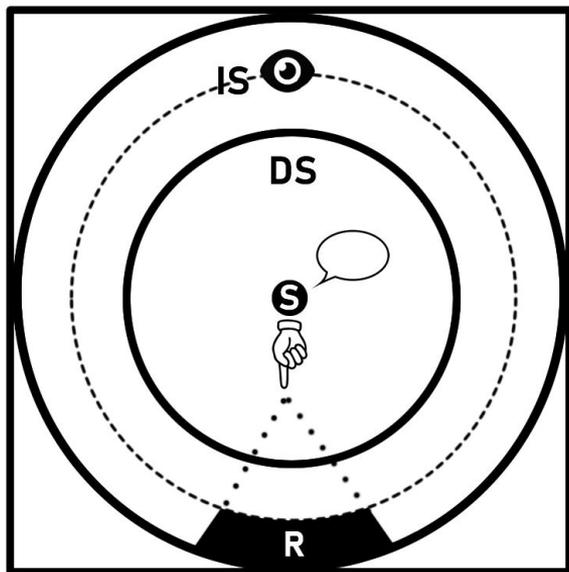
Context: Introducing the man beside you.

hɛt	tɛʔɛ	ʔət ^θ gaqaθ.
hiʔ	tiʔi	ʔət ^θ =gaqaθ
COP	PROX.DEM	1SG.POSS=husband

'This is my husband.'

Figure 4: Proximal CDE DEM

Conceptualizing distal referents



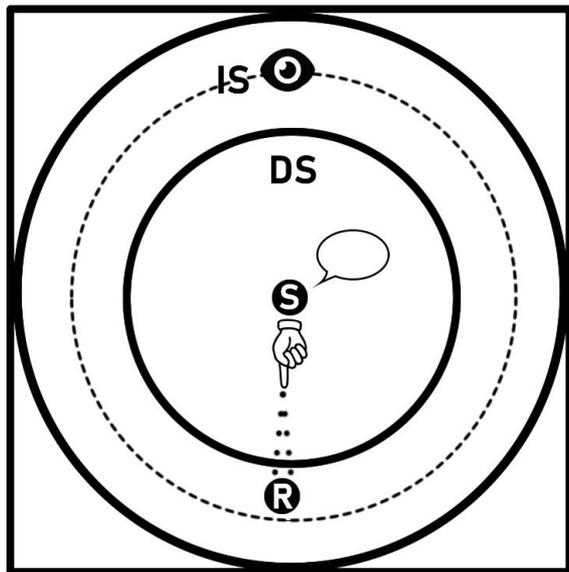
Context: We're out on a boat and you point out an island in the distance.

nɛʔ	ʃɛ λəmstən	ʔə taʔa	kʷɔθays.
niʔ	ʃə=λəmstən	ʔə=taʔa	kʷəθays
be.there	DET=shelter	OBL=DIST.DEM	island

'There's a shelter on the island over there.'

Figure 6: Distal CDE DEM

Conceptualizing near-distal referents



Context: Pointing to someone across the room.

hɛt	tita	ʔət ^θ gaqaθ.
hiɫ	təy̯ta	ʔət ^θ =gaqaθ
COP	NDIST.DEM	1SG.POSS=husband
'This is my husband.'		

Figure 5: Near-distal CDE DEM

Denotations

We can now add the deictic contribution to our denotations for *tε?ε* and *tiń*.

$$(25) \llbracket t\varepsilon? \varepsilon \text{ NP} \rrbracket^{sD} = \lambda s_l \dots CDE(x)(s_l) \wedge PROX(x) \dots$$

$$(26) \llbracket tiń \text{ NP} \rrbracket^{sD} = \lambda s_l \dots CDE(x)(s_l) \wedge PROX(x) \dots$$

$$\text{Where } \llbracket CDE \rrbracket^{sD}(x)(s_l) = 1 \text{ iff } [(x < s_l) \wedge (s_D \leq s_l)]$$

$$\text{Where } \llbracket PROX \rrbracket^{sD}(x) = 1 \text{ iff } (x < s_D)$$

Gender and number

Gender and number

- A subset of demonstratives are restricted to singular feminine referents — a common feature across the Central Salish languages (cf. Gillon 2006; Montler 2007; Beaumont 2011; Gerdts 2013)
- The other demonstratives are gender and number neutral.
- The feminine demonstratives are used for **singular female human** referents, sometimes for **singular female animal** referents, and also sometimes for **small inanimate** referents.

Feminine referents

Feminine demonstratives — beginning with *θ* and *†* — are used for female human and animal referents.

(27) *Context: Someone drops by that you don't know and chats with me for a minute before taking off again. I see you looking puzzled, so I tell you:*

ʔət ^θ qεχ	†εḥ.
ʔət ^θ =qix	†iḥ
1SG.POSS=younger.sibling	F.SG.DEM
'That was my sister.'	

(28) hεhεw	pəpεgən	θiθa	qɑqɑθegən.
hihiw	pəpigan	θəýθa	qɑqɑθigan
really	pregnant	F.SG.DEM	doe
'That doe is really pregnant.'			

Number restriction

They can only be used for singular referents.

(29) *Context: I see a group of women standing together and am wondering who they are...*

gigət ga	{# θiθa / tita }	nəgəptey?
gi~gat=ga	{# θəyθa / təyta }	nəgəptəy
PL~who=DPRT	{F.SG.DEM / DEM}	women

‘Who are those women?’

(30) *Context: Pointing to someone across the room.*

hət	{? tita / θiθa }	ʔət ^θ saftu.
hit	{? təyta / θəyθa }	ʔət ^θ =saftəw
COP	{DEM / F.SG.DEM}	1SG.POSS=wife

‘That is my wife.’

Number restriction

(31) *Context: My brother and I are looking through our parents' photo album. I find a picture of a couple of ladies.*

q ^w ayɪn	hɛyʔɛw	{#θiḥ / tiḥ}	ʔəms jɛʔaʔɛ.
q ^w ayin	hiʔ-iw	{#θiḥ / tiḥ}	ʔəms=jaʔaʔɛ
maybe	COP-PL	{F.SG.DEM / DEM}	1PL.POSS=relatives

'I think these are our relatives.'

Consultant: "You don't use θiḥ for a group, it's for one person."

Extension to small inanimates

The feminine demonstratives are also used for inanimate (i.e. sexless) referents considered small (see also Gerds 2013 for Halkomelem).

(32) a. *Context: I'm holding a small, cute basket and say:*

ʔεʔaʔitɛnmot	θεʔε	ɾipču.
ʔiʔaʔitin-mut	θiʔi	ɾ<ip>ču
cute-INT	F.SG.DEM	basket<DIM>

'This little basket is so cute.'

b. *Context: There's a little child's dress hanging in a closet.*

hɛhɛw	ʔaʔumišmot	θiθa	q̣ɛq̣snay.
hihiw	ʔaʔ-umiš-mut	θəʔθa	q̣<iq̣>snay
really	good-appearance-INT	F.SG.DEM	dress<DIM>

'That little dress is really pretty.'

Jurafsky (1996) notes that diminutivized entities are often conceptualized as feminine (e.g., in Hebrew, Hindi, Berber), and attributes this to a conceptual metaphor linking gender and size.

Denotations

The feminine demonstratives encode gender and number, as illustrated for $\theta\epsilon\gamma\epsilon$ and $\theta i\acute{n}$.

$$(33) \llbracket \theta\epsilon\gamma\epsilon \text{ NP} \rrbracket^{\text{SD}} = \lambda s_l \dots \text{CDE}(x)(s_l) \wedge \text{PROX}(x) \wedge \text{SING}(x) \wedge \text{FEM}(x) \dots$$

$$(34) \llbracket \theta i\acute{n} \text{ NP} \rrbracket^{\text{SD}} = \lambda s_l \dots \text{CDE}(x)(s_l) \wedge \text{PROX}(x) \wedge \text{SING}(x) \wedge \text{FEM}(x) \dots$$

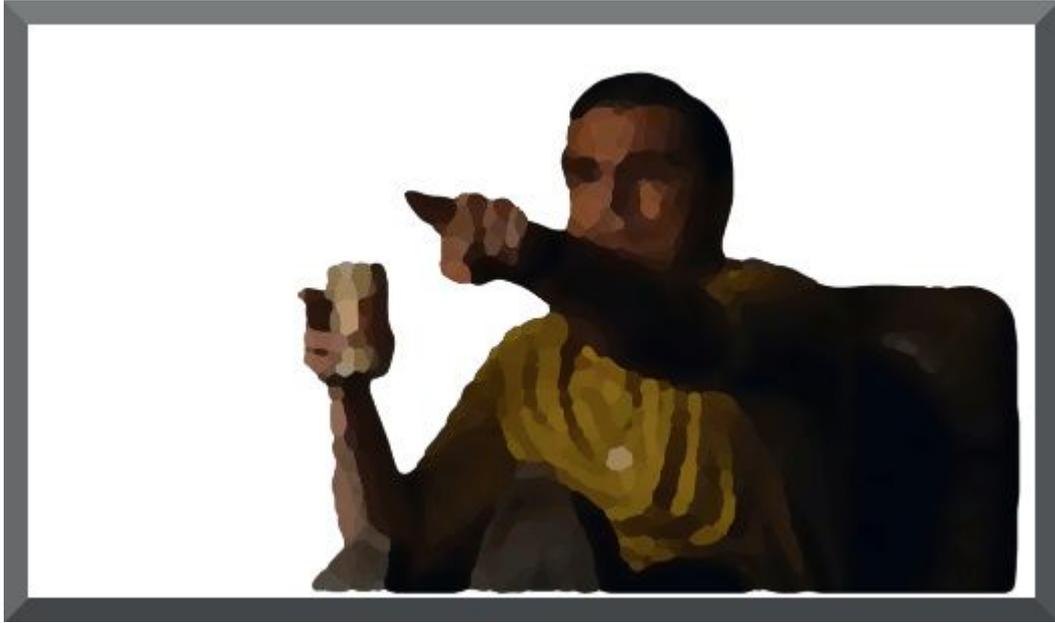
$$\text{Where } \llbracket \text{CDE} \rrbracket^{\text{SD}}(x)(s_l) = 1 \text{ iff } [(x < s_l) \wedge (s_D \leq s_l)]$$

$$\text{Where } \llbracket \text{PROX} \rrbracket^{\text{SD}}(x) = 1 \text{ iff } (x < s_D)$$

$$\text{Where } \llbracket \text{SING} \rrbracket^{\text{SD}}(x) = 1 \text{ iff } \#x = 1 \quad (\text{following Sauerland et al. 2005})$$

$$\text{Where } \llbracket \text{FEM} \rrbracket^{\text{SD}}(x) = 1 \text{ iff } x \text{ is feminine}$$

Since $\theta\epsilon\gamma\epsilon$ and $\theta i\acute{n}$ are more informative than the corresponding gender- and number-neutral forms $t\epsilon\gamma\epsilon$ and $t i\acute{n}$, Gricean principles mean they will be preferred whenever the context favors their use.



Gesture, Saliency, Joint Attention

Gesture, salience, and joint attention

“Joint attention is a complex phenomenon that involves three basic components: the actor, the addressee, and an object of reference. In order to communicate, actor and addressee must jointly focus their attention on the same entity or situation.” (Diessel 2006)

- **Gesture Demonstratives (GDEMs)**

create joint attention via co-speech gestures (e.g. manual pointing gestures, head movements, gazes, etc.).

- **Salience Demonstratives (SDEMs)**

assume joint attention between the speech participants.

GDEMs: Introducing a new referent

GDEMs are used when the speaker wants to introduce a new referent via gesture:

(35) *Context: There's a lot of cooking ware left after a gathering, and I know some is Gail's, but I'm not sure which ones. I ask you about one of the items.*

nasa	Gail	tɛʔɛʔ
naʔ-s=a	Gail	tiʔi
belong-3POSS=Q	Gail	GDEM

'Is this Gail's?' [*lifting or pointing to an object*]

GDEMs: Introducing a new referent

GDEMs are felicitous when a gesture is required to single out an entity from a group, but **SDEMs** are not.

(36) *Context: Pointing to one man in a picture of a men's soccer team.*

gət ga	{tɛʔɛ / #tiŋ}	tumiš?
gat=ga	{tiʔi / #tiŋ}	tumiš
who=DPRT	{GDEM / SDEM}	man
'Who is this?'		

GDEMs: Contrasting multiple referents

GDEMs are used to contrast multiple referents. **SDEMs** cannot be used this way:

(37) *Context: Marianne and Daniel have picked out some flowers for Gloria for her birthday. Then, before they've taken the flowers to the till to pay for them, Marianne notices some others that she thinks are better.*

»hɛ səm **tita** tat^θɛm qwasəm. qwayɪn hɛɫ taŋ kʷɛhɛt ʔi.«
hiɫ=səm **təy̯ta** tat^θim qwasəm. qwayin hiɫ taŋ kʷihit ʔəy̯
COP=FUT GDEM red flower maybe COP SDEM more good
'»Let's get those red flowers. I think those are better.«'

»xwaʔ, ʔi ʔot {**tɛʔɛ** / #**tiŋ**}«, hotkʷa Daniel.
xwaʔ ʔəy̯=ʔut {**tiʔi** / #**tiŋ**} hut=kʷa Daniel
NEG good=EXCL {GDEM / SDEM} say=RPT Daniel
'»No, these are good«, says Daniel.'

SDEMs: Referring back to unique & salient referents

SDEMs are used when the speaker talks about a referent that is already uniquely salient in the context.

(38) *Context: I ask while pointing at a picture of a young boy:*

gɛt čɛ ga	tɛʔɛ?	hiya čɛ	Freddie	tiŋ?
gat=ča=ga	tiʔi	hiɫ+a=ča	Freddie	tiŋ
who=INFER=DPRT	GDEM	COP+Q=INFER	Freddie	SDEM

‘Who might this be? Could this be Freddie?’

SDEMs: Referring back to unique & salient referents

GDEMs are not felicitous in these contexts:

(39) *Context: In a storyboard about buying a new pot at a garage sale...*

»k'wɛnos ga	tɛʔɛ ₁ ,«	hotk'wa	Marianne...	»ʔi ʔot,'
k'winus=ga	tiʔi	hut=k'wa	Marianne	ʔəy'=ʔut
how.much=DPRT	GDEM	say=RPT	Marianne	good=EXCL

hotk'wa	Marianne,	»hɛ səm	{ tiñ ₁ / # tɛʔɛ ₁ }	yɛqtat.«
hut=k'wa	Marianne	hiɬ+səm	{ tiñ ₁ / # tiʔi }	yəq-t-at
say=RPT	Marianne	COP+FUT	{SDEM / GDEM}	buy-CTR-1PL.ER

'»How much is this?«, says Marianne... »Oh good«, says Marianne,
»we'll buy this.«'

Cf. Ahn & Davidson (2018) who found that pointing blocks covarying readings for English demonstratives.

SDEMs: Referring back to unique & salient referents

Sometimes SDEMs can be used without previous mention where the referent is clearly in the joint attention of the discourse participants. GDEMs are dispreferred in these contexts.

(40) *Context: You're at my place for the first time, so you don't know my dog, and we're chatting in the living room, and my dog walks into the room and barks. I tell you:*

ʔət ^θ naʔ	{ tiñ / ʔ tita }	čekno.
ʔət ^θ =naʔ	{ tiñ / ʔ təȳta }	čaŋu
1SG.POSS=own	{SDEM / GDEM}	dog

'This is my dog.'

Exophoric vs. Non-exophoric referents

GDEMs and **SDEMs** also differ in what kind of referents they can pick out.

- **Gesture Demonstratives (GDEMs)**

require gesture and can consequently only pick out concrete entities in the external world (i.e. exophoric referents).

- **Salience Demonstratives (SDEMs)**

don't require gesture and can consequently also pick out abstract entities (i.e. non-exophoric referents), such as temporal referents, propositions, etc.

SDEMs and Non-Exophoric Referents

(41) *Context: Late at night, I come in from outside and say to you:*

hɛhɛw ɕimɕimmot {**tiñ** / #**tɛʔɛ**} nanat.
hihiw ɕəmɕəm-mut {**tiñ** / #**tiʔi**} nanat
really cold-INT {SDEM / GDEM} evening
'It's really cold this evening.'

(42) *Context: A guest staying with us comments on our neighbour who's already out gardening early in the morning: 'Look, he's out gardening already.' I reply:*

hɛɬ {**tañ** / #**tita**} ʔəx^w naḥs.
hiɬ {**tan'** / #**tita**} ʔə=x^w=nəḥ-s.
COP {SDEM / GDEM} CLF=CLF.NMLZ=be.like-3POSS
'That's how he is.'

Summary: GDEMs vs. SDEMs

	GDEMs	SDEMs
Introducing a new referent via gesture	✓	—
Contrasting multiple salient referents	✓	—
Referring back to an already unique & salient referent	—	✓
Compatible with concrete entities in the external world	✓	✓
Compatible with abstract entities (temporal terms, etc.)	—	✓

Table 1: Comparing GDEMs and SDEMs

GDEMs

- Gesture is a crucial component of the meaning of the GDEMs.
- We adapt the analysis in Ebert et al. (2020), where the gesture identifies a gesture referent: a rigid designator $\langle \text{hand} / \rangle$.
- The entity x denoted by the demonstrative is the unique entity identified by the gesture (see also Roberts 2002).

GDEMs

(43) Denotation for the GDEM $t\varepsilon\gamma\varepsilon + NP$ (w/o evidential and deictic components):

presupposition: there is a unique entity in the context which is identical to the gesture referent and meets the description of the demonstrative and NP

a. $[[t\varepsilon\gamma\varepsilon NP]]$

POINTING TO x

b. $\lambda x . \text{ ' } \img alt="hand pointing" data-bbox="198 655 225 685" \text{ ' } = x \wedge NP(x)$

Note: We assume a null NP pronoun in the absence of an overt NP.

SDEMs

- SDEMs do not depend on gesture, but on contextual salience.
- Adapting Roberts (2002) on pronouns, SDEMs presuppose that the demonstrative picks out a contextually salient discourse referent satisfying the descriptive content of the demonstrative and following NP – the most salient such discourse referent.
- Following Schwarz (2009) on anaphoric definites, SDEMs come with a syntactically represented but null index argument: [1 [SDEM [NP]]].

SDEMs

(44) Denotation for *tin'* + index 1 + NP (w/o deictic and evidential components):

presupposition:

- i. the index 1 is associated with a salient discourse referent in the context
- ii. of all the salient discourse referents, the discourse referent associated with the index 1 is the most salient discourse referent to meet the descriptive content of the demonstrative and the NP

a. $[[1 \text{ tin}' NP]]^{\text{sD,c,g}} =$

b. $g(1)$

GDEMs, SDEMs, and discourse referents

- Generally, it is previous mention that allows the referent of a SDEM to belong to the set of contextually salient discourse referents.
- In contrast, GDEMs often introduce a new discourse referent via gesture.

(45) *Context: My brother and I are looking through an old picture album that my parents have. There's a picture of a guy I kind of recognize but can't quite place.*

A:	t'ogutačx ^w	tεʔε ₁ ʔ	B:	x ^w aʔ.	A:	q ^w ayɪn
	t'ug-ut=a=čx ^w	tiʔi		x ^w aʔ		q ^w ayɪn
	recognize-CTR=Q=2SG.SBJ	DEM		NEG		maybe
	hεʔ	[1 tiḥ]		ʔəms jεʔjε.		
	hiʔ	tiḥ		ʔəms=jaʔja		
	COP	CDE.DEM		1PL.POSS=relative		

A: 'Do you recognize [this guy]₁?' B: 'No.' A: 'I think this₁ is our relative.'

GDEMs, SDEMs, and discourse referents

- The GDEM introduces a new discourse referent associated with the index 1:

$$(46) \llbracket t\epsilon? \epsilon_1 NP_{pro} \rrbracket^{SD,c,g[x/1]} = \exists !y: [\text{POINTING TO } I' = y \wedge NP(y)] . \text{IX} [\text{POINTING TO } I' = x \wedge NP(x)]$$

POINTING TO x

- Since this discourse referent is the most salient – being just introduced – the presuppositions of the following SDEM are satisfied and the SDEM refers to this referent anaphorically.

$$(47) \llbracket 1 \text{tin}' NP_{pro} \rrbracket^{SD,c,g} = 1 \in Sal_C \wedge NP(g(1)) \wedge \forall n [[n \in Sal_C \wedge NP(g(n))] \rightarrow [n <_{sal} 1 \vee n = 1]] . g(1)$$

Where $Sal_C \subseteq Dom_C$, the set of salient discourse referents in the context C
 Where $Dom_C \subseteq N$ (the set of natural numbers), the set of familiar discourse referents in the context C

Non-anaphoric uses of SDEMs

- There are, however, certain uses of the SDEMs where previous mention is not necessary, notably the use of *tin'* in temporal expressions.

(48) *Context: Late at night, I come in from outside and say to you:*

hɛhɛw	čimčimmot	{ tiñ / #tɛʔɛ}	nanat.
hihiw	čəmčəm-mut	{ tiñ / #tiʔi}	nanat
really	cold-INT	{SDEM / GDEM}	evening

'It's really cold this evening.'

- For Roberts (2002, 2015), entities unique and salient in the discourse context (weak definites) may be associated with discourse referents w/o previous mention.
- We assume that the day we are currently located in generally counts as most salient, so the presupposition of the SDEM is satisfied.

Denotation for CDE Proximal GDEM $t\varepsilon? \varepsilon$

$$(50) \llbracket t\varepsilon? \varepsilon \text{ NP} \rrbracket^{sD, c, g} = \lambda s_i: ! \exists y. \text{ ' } \leftarrow \text{ I ' } = y \wedge \text{CDE}(y)(s_i) \wedge \text{PROX}(y) \wedge \text{NP}(y). \\ \text{ix } [\text{ ' } \leftarrow \text{ I ' } = x \wedge \text{CDE}(x)(s_i) \wedge \text{PROX}(x) \wedge \text{NP}(x)]$$

$$(51) \llbracket 1 \text{ tir} \text{ NP} \rrbracket^{sD, c, g} = \lambda s_i: 1 \in \text{Sal}_C \wedge \text{NP}(g(1)) \wedge \text{CDE}(g(1))(s_i) \wedge \text{PROX}(g(1)) \wedge \\ \forall n [[n \in \text{Sal}_C \wedge \text{NP}(g(n))] \rightarrow [n <_{\text{sal}} 1 \vee n = 1]] \cdot g(1)$$

Where $\llbracket \text{CDE} \rrbracket^{sD, c, g}(x)(s_i) = 1$ iff $[(x < s_i) \wedge (s_D \leq s_i)]$

Where $\llbracket \text{PROX} \rrbracket^{sD, c, g}(x) = 1$ iff $(x < s_D)$

Where $\text{Sal}_C \subseteq \text{Dom}_C$, the set of salient discourse referents in the context C

Where $\text{Dom}_C \subseteq N$ (the set of natural numbers), the set of familiar discourse referents in the context C

Gesture demonstratives

Table 2: The gesture demonstratives (GDEMs)

		Proximal	Near-Distal	Distal
CDE	Gender/Number-Neutral	<i>tɛʔɛ</i>	<i>tita</i>	<i>taʔa</i>
CDE	Feminine Singular	<i>θɛʔɛ</i>	<i>θiθa</i>	—
Evidence-Neutral	Gender/Number-Neutral	<i>kʷɪʃi</i>	<i>kʷikʷa</i>	<i>kʷaʔa</i>

Saliency demonstratives

Table 3: The saliency demonstratives (SDEMs)

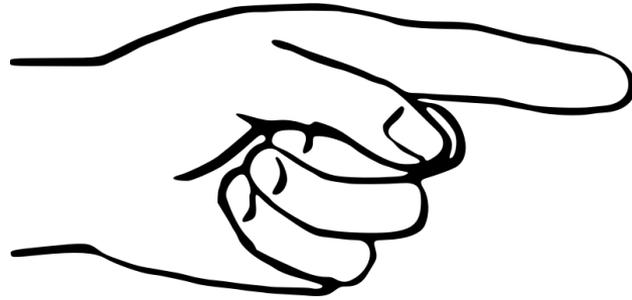
		Proximal	Distal	Distance-Neutral
CDE	Gender/Number-Neutral	<i>tiń</i>	<i>tań</i>	—
CDE	Feminine Singular	<i>θiń</i>	<i>tań</i>	—
PDE	Gender/Number-Neutral	—	—	<i>šiń</i>
PDE	Feminine Singular	—	—	<i>teń</i>
Evidence-Neutral	Gender/Number-Neutral	—	—	<i>k^wšiń</i>
Evidence-Neutral	Feminine Singular	—	—	<i>k^wteń</i>
Discourse Demonstrative		—	—	<i>k^wań</i>



Further uses

Beyond pointing gestures...

So far, we have only looked at **pointing gestures**, which are usually used with demonstratives to identify a referent in the external world.

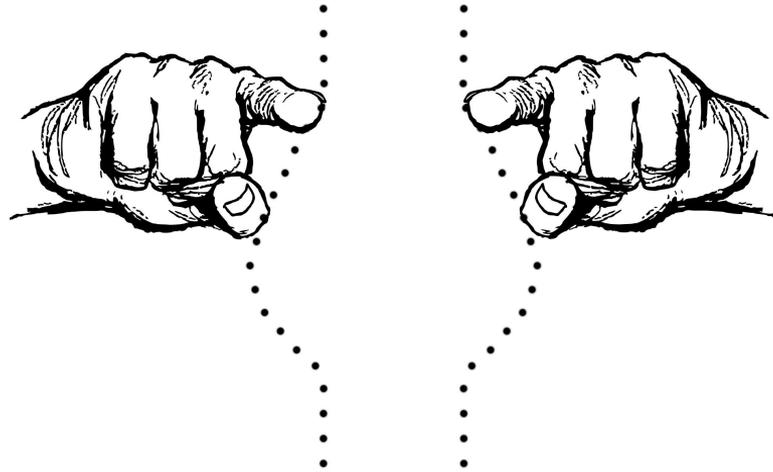


“Give me **this** cup.”

But there are also other kinds of uses (cf. König & Umbach 2018).

Co-speech gestures can be used to ...

... illustrate the **physical qualities** of the referent (e.g. its shape).



“The cup looks like **this**.”

Co-speech gestures can be used to ...

... illustrate a degree property of the referent (e.g. its size).



“The box is **this** big.”

Co-speech gestures can be used to ...

... demonstrate the manner something is done (e.g. complex movements).



“**This** is how he whistled.”

Demonstratives of quality, degree, or manner

- In English and German, we have specialized demonstrative forms that can be used in such contexts (see König & Umbach 2018)

	Quality	Degree	Manner
English	(such)	so	(thus)
German	so / solch	so	so

- In ṽayṽajuθəm, we don't. Instead, equative or similative predicates (e.g. *θux^wεn* 'be equal'; *naṽ* 'be like') tend to accompany demonstratives in such contexts. (cf. English *like this* or *like that*).

Quality Uses

(52) *Context: Describing a special mug that Felipe got for drinking mate, a tea from South America. I tell you, k^wa yəqʔəmit ʔə šɛ χaws k^wasta. ‘He bought a new mug...’*

naṃ [ʔə] {tɛʔɛ / taʔa / #k^wɬi}.

naṃ ʔə={tiʔi / taʔa / #k^wəši}

be.like OBL={CDE.PROX.DEM / CDE.DIST.DEM / PROX.DEM}

‘It looks like this.’ + [indicates shape]

Degree uses

(53) *Context: Someone comes walking down the road, whistling and calling. He says t^θεt^θeyitč t^θ čičnoʔ. x^waʔačx^w qəʔ k^wʊnʊx^wax^w? ‘I’m looking for my little dog. You haven’t seen it, have you? It’s small, ...’:*

θux^wεn {tεʔε / #taʔa / #tita / #k^wıš̌i} ...

θəx^win {tiʔi / #taʔa / #tita / #k^wəš̌i}

be.equal {CDE.PROX.DEM / CDE.DIST.DEM / CDE.NDIST.DEM / PROX.DEM}

‘... like this...’ + [indicates size]

Manner uses

(54) *Context: I'm teaching you to fold in egg whites. As I'm demonstrating, I say:*

naṃsx^wčx^w ʔə {tɛʔɛ / taʔa}.
naṃ-sx^w=čx^w ʔə={tiʔi / taʔa}
be.like-CAUS=2SG.SBJ OBL={CDE.PROX.DEM / CDE.DIST.DEM}
'You do it like this.'

(55) *Context: I'm teaching my nephew how to whistle: This is how you do it. [after I've said that, I show him.]*

naṃ ʔə {tɛʔɛ / taʔa / kwɪšɪ}.
naṃ ʔə={tiʔi / taʔa / kwəšɪ}
be.like OBL={CDE.DIST.DEM / CDE.PROX.DEM / PROX.DEM}
'Like this.'

Towards an analysis

- In these uses, the gesture made by the speaker creates an abstract entity, with the relevant quality, degree, or manner. This entity is the gesture referent.
- The demonstrative then refers to this abstract entity (cf. Ebert et al. 2020).
- This abstract individual is in turn related to the argument of the 'be like' predicate.

An example denotation

Abstracting away from the contribution of the oblique for simplicity and giving *naṁ* the denotation in (57), we can give (56) (repeated from 52) the denotation in (58).

(56) *Context: Describing a special mug that Felipe got for drinking mate, a tea from South America. I tell you, k^wa yəqʔəmit ʔə šε χaws k^wasta. 'He bought a new mug...'*

naṁ pro_i [ʔə] **tεʔε.**
naṁ pro_i [ʔə]=tiʔi
be.like 3 [OBL]=CDE.PROX.DEM
'It looks like this.' + [indicates shape]

(57) $[[naṁ]]^{\text{SD},g} = \lambda x \lambda y [\text{be-like}(x)(y)]$

(58) $[[naṁ ʔə tεʔε]]^{\text{SD},g} = [\text{be-like}(\iota x [\text{☞ } / \text{ } = x \wedge \text{CDE}(x)(s_i) \wedge \text{PROX}(x) \wedge \text{NP}(x)]) (g(i))]$

similarity predicate

gesture referent = abstract entity

pronoun

An example denotation

Abstracting away from the contribution of the oblique for simplicity and giving *naṁ* the denotation in (57), we can give (56) (repeated from 52) the denotation in (58).

(56) *Context: Describing a special mug that Felipe got for drinking mate, a tea from South America. I tell you, kʷa yəqʔəmit ʔə šε χaws kʷasta. 'He bought a new mug...'*

naṁ pro_i [ʔə] tεʔε.
naṁ pro_i [ʔə]=tiʔi
be.like 3 [OBL]=CDE.PROX.DEM
'It looks like this.' + [indicates shape]

The abstract entity is in the information situation and proximal to the speaker, so the CDE PROX demonstrative works

(57) $[[naṁ]]^{SD,g} = \lambda x \lambda y [be-like(x)(y)]$

(58) $[[naṁ ʔə tεʔε]]^{SD,g} = [be-like(ix [\text{☞ } / \text{ ' } = x \wedge CDE(x)(s_i) \wedge PROX(x) \wedge NP(x)]) (g(i))]$
similarity predicate gesture referent = abstract entity pronoun

(s_i is provided by a situation pronoun adjoined to DP following Elbourne 2013, Renans 2016 and the presupposition of the demonstrative is not included.)

Yet, some puzzles remain

- There are some open puzzles concerning the choice of the demonstratives in these uses:

	<i>tɛʔɛ</i>	<i>tita</i>	<i>taʔa</i>	<i>kʷɪʃi</i>	<i>kʷikʷa</i>	<i>kʷaʔa</i>
Quality	✓	x	✓	x	x	x
Degree	✓	x	x	x	x	x
Manner	✓	x	✓	✓	x	x

- Why can the distal form *taʔa* be used when the abstract referent is so close?
- Why is the near-distal form *tita* always bad?
- Why can you use both the CDE forms *tɛʔɛ* and *taʔa* and the non-evidential *kʷɪʃi* for the manner uses?

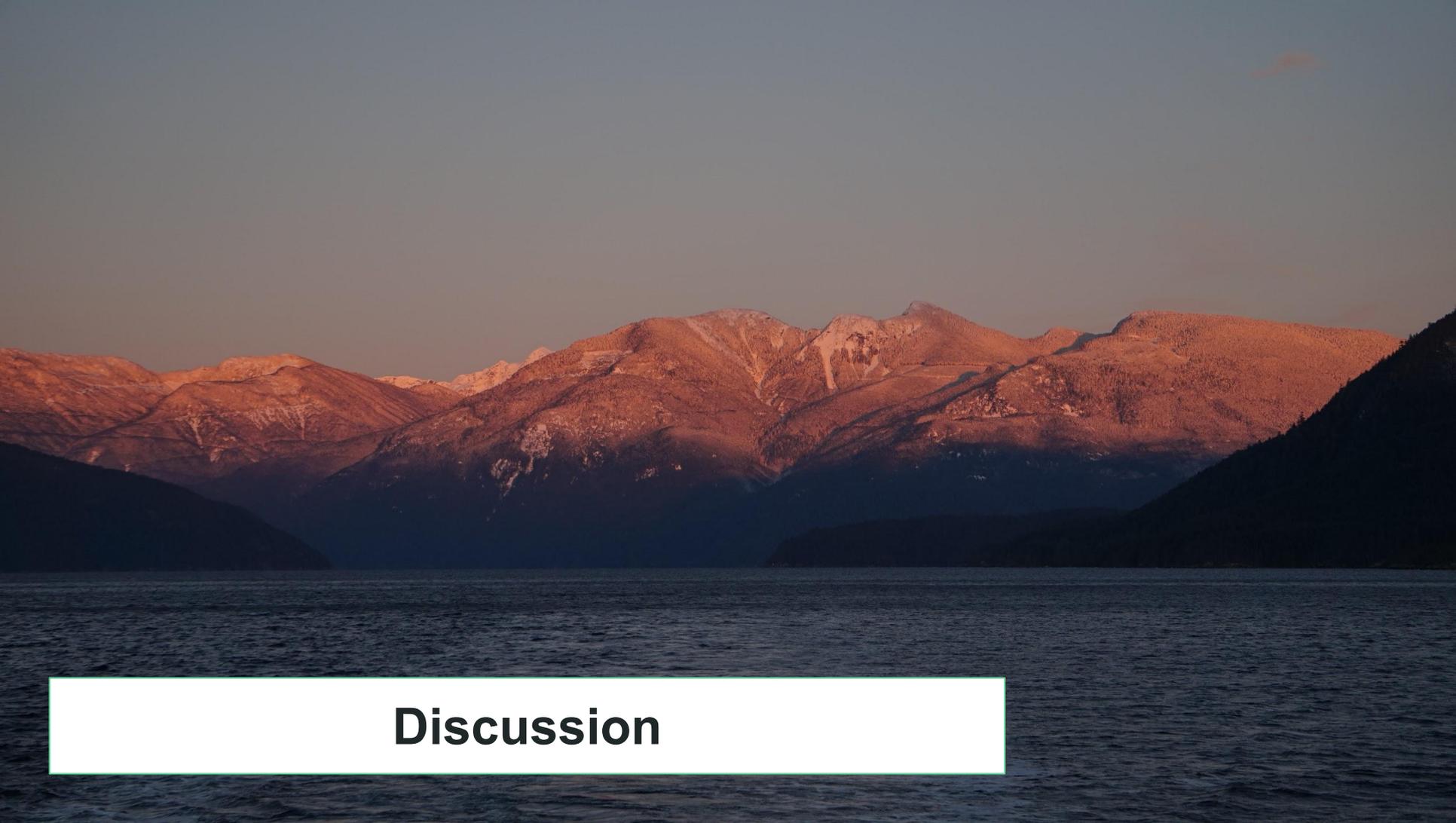
Yet, some puzzles remain

Some hypotheses:

- The peculiarities of deictic distance (*tεʔε* vs. *taʔa*) are just a symptom of the context dependency (e.g., what counts as proximal or distal really depends on how the speaker conceptualizes the involved situations.)
- The use of *k^wtsi*, while unusual, is not a problem for the current analysis, where the *k^w*-initial forms are treated as evidence neutral. (However, this raises the question why *k^waʔa* is never good in these uses.)

Conclusion:

- Further research on these demonstrative uses is necessary.



Discussion

Summary

- Two paradigms of demonstratives in ʔayʔaʃuθəm: GDEMs and SDEMs.
- GDEMs are accompanied by co-speech gesture and identify referents in the external world.
 - They are typically used to draw attention to new referents or to contrast multiple referents.
- SDEMs refer to an entity salient in the discourse context, established in joint attention, and do not require gesture.
 - They are typically used anaphorically.
 - Since they do not require gesture to identify their referent, they are compatible with entities that cannot be pointed to in the external world.

Discussion

- In the previous network meeting Klaus von Heusinger examined the effect of evidence type on the distribution of weak and strong determiners in German in bridging contexts (especially part-whole bridging).
- In these contexts, direct evidence boosts the acceptability of the weak determiner.
- This is interpreted as additional evidence for weak definites encoding uniqueness in a salient resource situation.

Discussion

- This perhaps raises the question of whether there is a connection between situational uniqueness and direct evidence in ʔayʔaǰuθəm.
- However, the direct evidence requirement is encoded by the salience demonstratives as well as determiners and gesture demonstratives.
- Typical uses of salience demonstratives are anaphoric, making these more akin to German strong determiners.
- Even ʔayʔaǰuθəm determiners do not encode definiteness in the sense of placing restrictions on the common ground.
- The evidential requirement in ʔayʔaǰuθəm is therefore independent of how reference is determined (whether through gesture, anaphoricity, or otherwise).

Final remarks

- The $\gamma\alpha\gamma\alpha\jmath\theta\epsilon\mu$ demonstrative system supports treating gesture as contributing to core semantics and integral to the meaning of demonstratives (cf. Ebert et al. 2020).
- Shows that different types of demonstratives may be distinguished by whether they encode co-speech gesture.
- We also propose a unified situational analysis for the deictic and evidential components.
- Quality, degree, and manner uses remain somewhat puzzling and deserve a more detailed exploration in the future.

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References

- Diessel, Holger & Kenny R. Coventry. 2020. Demonstratives in Spatial Language and Social Interaction: An Interdisciplinary Review. In: *Frontiers in Psychology* 11.
- Ebert, Christian, Cornelia Ebert, & Robin Hörnig. 2020. Demonstratives as dimension shifters. *Proceedings of Sinn und Bedeutung* 24(1):161–178.
- Elbourne, P. 2013. *Definite Descriptions*. Oxford: Oxford University Press.
- First Peoples' Cultural Council. 2018. Report on the status of B.C. First Nations languages. Brentwood Bay: FPCC.
- Gillon, Carrie. 2006 [2013]. *The Semantics of Determiners: Domain Restriction in Skwxwú7mesh*. Newcastle upon Tyne, UK: Cambridge Scholars Publishing.
- Grosz, Patrick. 2019. Pronominal Typology and Reference to the External World. In: *Proceedings of the 22nd Amsterdam Colloquium*, 563–573.
- Huijsmans, Marianne, Daniel K. E. Reisinger, & Lisa Matthewson. 2020. Evidential Determiners in ʔayʔajuθəm. In: Daniel K. E. Reisinger, Hannah Green, Marianne Huijsmans, Gloria Mellesmoen, and Bailey Trotter (eds.), *Papers for ICSNL 55*. Vancouver, BC: UBCWPL, 165–182.
- Kalsang, Jay Garfield, Margaret Speas, & Jill de Villiers. 2013. Direct evidentials, case, tense and aspect in Tibetan: evidence for a general theory of the semantics of evidential. *NLLT* 31:517–561.
- Krifka, Manfred. 1998. The origins of telicity. In Susan Rothstein (ed.), *Events and grammar*, Dordrecht: Kluwer Academic Publishers, 197–235.
- Lascarides, A. & M. Stone. 2009. A formal semantic analysis of gesture. *JoS* 26, 393–449.
- Lücking, A. 2018. Witness-loaded and witness-free demonstratives. In: M. Coniglio et al. (eds.), *Atypical demonstratives: syntax, semantics and pragmatics*. Berlin: De Gruyter.
- Matthewson, Lisa. 2004. On the Methodology of Semantic Fieldwork. In: *International Journal of American Linguistics* 70(4):369–415.
- Matthewson, Lisa. 2006. Presupposition and cross-linguistic variation. *Proceedings of the North East Linguistics Society* 36.
- Reisinger, Daniel K. E., Marianne Huijsmans, & Lisa Matthewson. 2020. Evidentials in the nominal domain: a Speasian analysis of ʔayʔajuθəm determiners. Ms. submitted to *Proceedings of Sinn und Bedeutung* 26.
- Renans, A. 2016. A cross-categorial definite determiner: Evidence from Ga (Kwa). In: M. Moroney et al. (eds.), *Proceedings of SALT 26*. LSA and Cornell Linguistics Circle, 22–42.
- Roberts, Craige. 2002. Demonstratives as definites. In: Kees van Deemter & Roger Kibble (eds.), *Information sharing: Reference and presupposition in language generation and interpretation*, Stanford: CSLI Publications, 89–136.
- Roberts, Craige. 2015. Indexicality: *de se* semantics and pragmatics. Ms., Ohio State University. <<https://www.asc.ohio-state.edu/roberts.21/Roberts.Indexicality.pdf>>
- Schwarz, Florian. 2009. *Two types of definites in natural language*. PhD dissertation, University of Massachusetts at Amherst.
- Schwarz, Florian. 2009. *Two types of definites in natural language*. PhD dissertation, University of Massachusetts at Amherst.
- Speas, Peggy. 2010. Evidentials as generalized functional heads. In: Anna-Maria di Sciullo (ed.), *Interface legibility at the edge*. Oxford: Oxford University Press, 127–150.
- Watanabe, Honoré. 2021. A Sliammon Text: “First Pregnancy”, as Told by Mary George. In: *Asian and African Languages and Linguistics* 15:93–103.

Appendix A: Pronouns vs SDEMs

For anaphoric uses where there is no contrast involved, null pronouns are preferred to SDEMs.

- (i) *Context: In a storyboard, Marianne calls Daniel to come look at a basket in a display case at a museum. Daniel comes to see it and admires it. Marianne asks $h\epsilon\ \check{c}\epsilon\ k^w\ \check{c}\epsilon\ tuwas?$ 'Where might it have come from'? Daniel answers:*

$h\epsilon h\epsilon w\check{c}$	$x^w a\ ?\ to\ x^w n\ \epsilon x^w \theta n.$	
$hihiw=\check{c}$	$x^w a\ ?\ t\ \epsilon x^w -n <i>x^w =an$	
really=1SG.SBJ	NEG know-NCTR<STAT>=1SG.ERG	
$h\epsilon h\epsilon w$	$\ ?a\ \check{j}u\ m\ i\ \check{s}m\ o\ t$	{ $\#t\ \epsilon\ ?\ \epsilon$ / $\#t\ i\ \check{h}$ / pro }.'
$hihiw$	$\ ?a\ \check{j}u\ m\ i\ \check{s}-m\ u\ t$	{ $\#t\ i\ ?\ i$ / $\#t\ i\ \check{h}$ / pro }.'
really	beautiful-INT	{GDEM / SDEM / pro }

'I really don't know. It's very beautiful.'

Appendix A: Pronouns vs SDEMs

Conversely, where there is a clear contrast involved, SDEMs are preferred to null pronouns.

- (ii) *Context: We've been checking out some old recordings but they've all been really hard to hear. Finally we get to one that is clearer.*

hɛt	{k ^w ših / # <i>pro</i> }	ʔi.
hit	{k ^w ših / <i>pro</i> }	ʔəy
COP	{SDEM / <i>pro</i> }	good

'This one is good.'

Appendix B: Non-referential uses of SDEM *k^wšin'*

k^wšin', one of the evidence-neutral SDEMs, can be used non-referentially, which is surprising for a demonstrative.

(41) *Context: My child is careening around the field on his new bike. So far no one has been around, but I'm worried that, if someone comes, he could hurt them.*

ǰεqaʔ ʔεʔagɯx^wəs **k^wšin'**.
ǰaqaʔ ʔiʔag-əx^w-as **k^wšin'**
EX get.hurt-NCTR-3ERG SDEM
'He might hurt someone.'

Appendix B: Non-referential uses of SDEM *k^wšiš*

(42) *Context: Daniel and I thought we'd heard someone talking outside but when we went to see there was no one there. When we come in, we tell Gloria.*

x^wuk^wt **k^wšiš**. q^wayin hɛʔ k^w puʔəm ʔə č'iyitət.
x^wuk^wt **k^wšiš** q^wayin hiʔ k^w=puʔəm ʔə=č'iy-it-at
not.exist DEM maybe COP DET=wind CLF=hear-CTR-1PL.ERG
'There's no one there. Maybe it was the wind that we heard.'

An explanation for the unusual behavior of *k^wšiš* might be found in its formation history: it appears to be comprised of the determiner *k^w* — which is used for non-referential DPs — and the demonstrative *šiš*.

Appendix B: Non-referential uses of SDEM $k^w\check{s}i\check{n}$

We analyze $k^w\check{s}i\check{n}$ as introducing a choice function variable that is existentially closed, but also a contextual restriction on the domain of existential closure (see also Gillon 2006 for $S\check{k}w\check{x}w\acute{u}7mesh$).

$$(43) \llbracket k^w\check{s}i\check{n} \rrbracket^C = \lambda N_{\langle e,t \rangle} \lambda P_{\langle e,t \rangle} \exists f C . [CH(f) \wedge f(N) = 1 \wedge f(P) = 1]$$

- If the context narrows down the domain of existential quantification for the choice function sufficiently, $k^w\check{s}i\check{n}$ can refer back to an entity mentioned in previous discourse.
- Where the context does not narrow down the domain of existential quantification, $k^w\check{s}i\check{n}$ will be fully nonspecific.
- Negation can scope over the existential closure, giving the $\neg > \exists$ reading.