Title:

The deictic content of demonstratives

Abstract:

What do demonstratives, like *this/that* and *here/there*, encode about their referents? The traditional answer argues that the deictic content of demonstratives is mostly about distance from the speaker – that proximals like *this* encode that the referent is near the speaker, while distals like *that* mean it is far from them. This speaker-centered, distance-based view is intuitively appealing, but recent research in linguistics, psychology, and anthropology has challenged it in many ways. I review three of the most active debates in this new literature, where recent authors – in contrast to the traditional view – have argued that (i) the spatial deictic content of demonstratives is about location relative to socially or perceptually defined perimeters, not distance; (ii) deictic content often concerns perception or attention, not space; and (iii) deictic content can relate the referent to the addressee or the speaker-addressee interactive dyad, as well as to the speaker. Under these new analyses, the deictic content of demonstratives is fundamentally social and interactive, not purely speaker-centered or distance-based.

Keywords: Pragmatics; Deixis; Demonstratives; Joint Attention; Language of Space

Demonstratives – words like *this/that* and *here/there* – are a key tool for managing attention in face-to-face interaction (Diessel & Coventry, 2020; Peeters & Özyürek, 2016). Present in every language, they also vary widely across languages in number, form, and meaning (Diessel, 1999). Though demonstrative meaning has many components, this article focuses on just one: the information that demonstratives provide about the relationship between the referent and the discourse participants (speaker and addressee). This relational meaning is the **deictic content** of demonstratives.

Many disciplines – psychology, anthropology, and several subfields of linguistics – participate in the study of deictic content. One reason for this is the relationship between demonstratives and attention. Establishing joint attention – the process where one person directs another's attention to a third person or object – provides the infrastructure for the rest of language and social interaction: before people can coordinate their actions on objects, or label them with names, they first need to establish joint attention (Tomasello, 2008). Demonstratives are key verbal tools for achieving joint attention (Diessel & Coventry, 2020), making them relevant to all fields which analyze face-to-face interaction – including pragmatics, linguistic anthropology, and cognitive and developmental psychology. Besides their interactional importance, demonstratives have many exceptional structural properties. These draw linguists from across subfields: for instance, the extreme cross-linguistic diversity of demonstratives fascinates typologists, while their subtle differences from other definites attract formal semanticists.

In other words, there are many different ways to arrive at an interest in demonstratives. But after linguists reach this point, they sometimes gloss over the items' deictic content, giving demonstratives traditional spatial labels – "demonstrative X is proximal, and Y is distal" (e.g.,

Sichel & Wiltschko, 2021, pp. 54–55) – and rapidly moving on to the topic that originally attracted them. This move relies on an implicit assumption that the deictic component of demonstrative meaning is so simple that it does not need to be analyzed. But in fact, the deictic content of demonstratives is as complex as any other topic in noun phrase semantics and pragmatics. To show how, I first provide background on demonstrative meaning in general, then review three current debates from the interdisciplinary literature on demonstratives' deictic content: (i) whether spatial deictic content is about distance, or location; (ii) whether all deictic content is spatial, and what kinds of nonspatial content exist; and (iii) whether deictic content relates the referent only to the speaker, or also to other discourse participants. Based on these debates, I then outline priorities for future cross-linguistic research on deictic content.

Conceptual Framework

Defining Demonstratives

I define a demonstrative as a closed-class lexical item which picks out a referent from the surroundings or shared knowledge of the discourse participants by relating it to them. This exclusively pragmatic definition of "demonstrative" is common in typological literature (Diessel, 1999, p. 1; Levinson, 2018, pp. 3–4) and spans both nominal demonstratives (equivalent to *this*/*that*) and locative demonstratives (*here*/*there*). Because the pragmatic definition is intended to be broad, it does not always distinguish demonstratives from pronouns or definite articles; instead, this usually requires language-specific syntactic criteria (see e.g. Brown & Levinson, 2018, p. 152; Diessel, 1999, p. 2). But if our interest is in deictic content, these category distinctions may be irrelevant – some items which are not demonstratives, like the deictic determiners of Salish languages (Matthewson, 1998), still have very rich deictic content.

Describing the Readings of Demonstratives

Uses of demonstratives are traditionally divided into five categories: exophoric, recognitional, anaphoric, cataphoric, and discourse deictic (Anderson & Keenan, 1985; Diessel, 1999; Himmelman, 1996; Levinson, 1983). **Exophoric** (also called "deictic") demonstratives pick out their referents from the physical-perceptual surroundings of the discourse. English uses both *this* and *that* in exophoric functions (1).

(1) A: Did you take this one?
B: I took all of those.
(COCA: 1993 MOV Kalifornia)

Recognitional demonstratives pick out their referents from the discourse participants' shared world knowledge (2). Only *that* appears as a recognitional in English.

(2) I am positively mortified you had to endure that frog fiasco last night.
(COCA: 2009 MOV Princess and the Frog)

Anaphoric demonstratives pick out referents mentioned earlier in the discourse, while **cataphoric** demonstratives are like indefinites, introducing referents to be described later in the discourse. In English, both *this* and *that* function as anaphors (3, 4). Only *this* is a cataphor (5).

(3) (Maes et al., 2022a, Supplementary Materials ID2698)
Unlike much of the Caribbean region, it [Aruba] has a dry climate and an arid, cactus-strewn landscape. This climate has helped tourism…

(4) (Maes et al., 2022a, Supplementary Materials ID2649)
Santiago de Guayaquil…is the largest and the most populous city in Ecuador, as well as that nation's main sea port.

(5) COCA 2012 BLOG thefader.com
For a while, I had this weird insomnia. I couldn't get to sleep until like 10 in the morning…

In **discourse deixis**, demonstratives pick out propositions or segments of the discourse. English uses both *this* and *that* as discourse deictics (6, 7). Some authors argue that discourse

deixis should be treated as a type of anaphora or cataphora, rather than an independent use of demonstratives (Peeters et al., 2021).

(6) (Maes et al., 2022a, Supplementary Materials ID2646)
Kula Kangri is claimed by many authorities to be the highest mountain in Bhutan but this is disputed by others…

(7) (Maes et al., 2022a, Supplementary Materials ID30)
Besides the moderate O'Connor, five of the eight other justices have endorsed a woman's right to the procedure. That means that Roe v. Wade will not be threatened…

While English uses the same demonstratives in each function (1–7), in other languages different functions correspond to different demonstratives. One common split is between exophoric and anaphoric demonstratives. For example, of the six demonstratives of Ticuna (isolate), four are always exophoric, and one is always anaphoric or recognitional; just one has both exophoric and non-exophoric uses (Skilton, 2019). Similar lexical splits between exophoric and anaphoric demonstratives occur in nominal demonstratives in Korean (Ahn, 2022); in several Amazonian languages, including Trumai (isolate), Warao (isolate), and Tiriyo (Carib) (Guirardello-Damian, 2018; Herrmann, 2018; Meira, 2018); and in Yucatec and Tzeltal Maya (Brown & Levinson, 2018; Hanks, 1990).

Deictic Content vs. Other Meaning Components

Demonstratives can combine multiple meaning components: deictic content, definiteness content, and classificatory content.

By the definition above, all demonstratives have **deictic content** – the information they convey about the referent in relation to the discourse participants. In turn, the **origo** of a demonstrative is the participant to whom the term relates the referent (Bühler, 1982). On most views (as discussed below), the origo can be either the speaker or the addressee. For example, traditional analyses of the English demonstrative state that *that* encodes that the referent is far

from me, the speaker. Thus, the origo of *that* is the speaker, and the deictic content encodes "far from speaker."

I adopt the term "deictic content" from Skilton (2019). Authors use a variety of terms for this meaning component, including "spatial meaning," "locative meaning" and "indexical meaning" (Enfield, 2003; Levinson et al., 2018; Peeters et al., 2015). I avoid the terms "spatial" and "locative" because they suggest that the content is exclusively about space, which is false (below). While the terms "deictic" and "indexical" have sometimes been used interchangeably (Levinson, 2004), I use "deictic" rather than "indexical" because – in current formal semantics – "indexical" denotes all items with context-dependent meaning, including pronouns and adverbs (*I, today*) as well as demonstratives.

Besides deictic content, demonstratives can also have **definiteness** or **quantificational** content (Ahn, 2017; Kaplan, 1989; Roberts, 2002; Wolter, 2009). This content concerns how the demonstrative participates in the language's system of nominal quantification and (in)definiteness. For example, English noun phrases headed by *that*, like noun phrases headed by *the*, behave as strong on tests distinguishing strong and weak quantifiers (Barwise & Cooper, 1981). This property provides evidence that *that*, like *the*, is definite (Wolter, 2006). It is part of the definiteness content of *that*, while the requirement that the referent is far from the speaker is part of the deictic content. Though many deictic elements are definite, some languages do have indefinite deictic determiners (Matthewson, 1998).

Last, many demonstratives display number or gender concord with the noun they modify. Via the concord, these demonstratives convey information about non-relational properties of the referent – for example, *those* conveys that the referent is plural. This information is the demonstrative's "classificatory content" (Nunberg, 1993). In languages with noun classification

systems, the classificatory content of demonstratives can be very rich. But because it does not relate the referent to the participants, it is not part of the deictic content.

In the following sections, I am concerned only with the deictic content of demonstratives in exophoric, non-contrastive, spoken-language use. I do not discuss demonstratives in signed languages (Cooperrider & Mesh, 2022); written language use (Maes et al., 2022b; Næss et al., 2020); or contrastive reference, as in *This marble is red and that one is blue* (Levinson et al., 2018, p. 32). I also do not consider demonstratives' definiteness content, differences from articles, behavior in attitude reports, or use in anaphora. Other authors (Dawson & Jenks, 2023; Wolter, 2009) review these issues.

Is Spatial Deictic Content About Distance, Or Location?

Many demonstratives have spatial deictic content – they express something about the spatial relationship between the origo and referent. Traditionally, this meaning was analyzed as "distance": proximal demonstratives like *this* express that the referent is close to the origo, while distal ones like *that* convey the referent is far. But this traditional distance-based view has been questioned from many angles. First anthropologists, then psychologists, have argued that the spatial deictic content of demonstratives does not concern distance, but instead the referent's **location** relative to a perimeter, such as the speaker's reaching space. Though the differences between distance and location analyses may seem minor, they lead to very different predictions.

Distance: The Traditional View

Before 2000, nearly all research on demonstratives asserted that their spatial meaning concerned distance (Anderson & Keenan, 1985; Diessel, 1999; Levinson, 1983; Lyons, 1977). In this era, the first question to ask about a demonstrative was **what** it conveyed about the referent's distance from the origo – near, far, middle – and not **whether** it conveyed distance.

The assumption that distance is the primary deictic content remains popular today (e.g., Næss et al., 2020). Following Anderson & Keenan (1985), authors using a distance-based framework classify demonstrative systems according to the number of terms they contain. In this framework, **two-term** demonstrative systems, like that of English, are treated as semantically uniform. One demonstrative, like *this*, always encodes that the referent is close to the speaker; the other, like *that*, encodes that it is far from them (e.g., Diessel & Coventry, 2020).

In contrast to this uniformity, the Anderson & Keenan framework analyzes **three-term** demonstrative systems as semantically diverse. Some three-term systems are "person-oriented": one term encodes that the referent is close to the speaker, one that it is close to the addressee, and one that it is not close to either. Other three-term systems are "distance-oriented:" the terms contrast for distance from the speaker, who is the only origo. For example, Anderson & Keenan's (1985) analysis of the three demonstratives of Peninsular Spanish – *este, ese,* and *aquel* – is distance-oriented. They claim that *este* is used for referents near the speaker, *aquel* for referents far from the speaker, and *ese* for referents at a middle distance. In contrast, other authors (Alonso, 1968; Rubio-Fernandez, 2022) propose that the Spanish system is person-oriented. They agree that *este* is speaker-proximal and *aquel* is speaker-distal, but argue that *ese* indexes not only referents in the middle distance, but also referents near the addressee (as long as they are also far from the speaker).

As the Spanish debate illustrates, the distinction between "person-oriented" and "distance-oriented" three-term systems is potentially misleading. Even though this framework labels only one kind of system "distance-oriented," the contrast between the two kinds of three-term system is **not** about the role of distance – on both analyses, distance is the only deictic content. Rather, this distinction is about which discourse participants can be a deictic **origo**. In

"person-oriented" systems, both speaker or addressee act as origos; in "distance-oriented" systems, the speaker is the only origo.

For systems with more than three terms, some analyses still claim that distance is the only deictic content (e.g. Anderson & Keenan, 1985, p. 294 on Malagasy). But more often, authors describe "multi-term" systems as conveying either both distance and visibility (discussed below) or distance and other spatial deictic content, such as the elevation of the referent above vs. below the origo (Diessel, 1999, p. 51; Forker, 2020; Grenoble et al., 2019).

Location: Lived and Emergent Space

In an influential study of Yucatec Maya (Mexico, Belize), Hanks (1990) rejected the distance-based framework. He proposed that none of the locative (*here/there*) demonstratives of Yucatec encoded anything about distance. These demonstratives do have spatial deictic content, Hanks argued, but it concerns the referent's **location** relative to a perimeter enclosing the origo, not its **distance** from the origo.

For example, based on fieldnotes on everyday conversations in the Yucatán, Hanks proposes that the demonstrative *way e?* "here" indexes a perimeter enclosing the speaker. This perimeter may be "the speaker's own body space…the space of a single walled room...the agricultural plots or orchards worked by a single man...the region frequented by the interactants, [or] the earth inhabited by man" (Hanks, 1990, p. 406). On this analysis, *way e?* indexes a perimeter that includes the origo, but not just any perimeter: the space of *way e?* is always a "lived space" (Hanks, 1990, p. 516) that predates and outlasts any single interaction.

Subsequently, Enfield's (2003) work on deixis in Lao (Tai-Kadai, Laos) took up both Hanks' ethnographic method and many of his ideas, but moved away from his emphasis on enduring lived space. Based on recordings of everyday conversation in Laos, Enfield argues that

the two nominal demonstratives of Lao also convey location relative to a perimeter, not distance. One demonstrative, *nii4*, encodes only a semantically primitive demonstrative meaning, DEM; it has no spatial deictic content. The other demonstrative, *nan4*, encodes DEM and a spatial meaning – that the referent is outside the "here-space," an invisible perimeter which encloses the speaker's body and can also enclose unbounded additional space. The extension of the here-space is dynamic and defined by the speaker's moment-to-moment actions: it is the zone of their manual activity, attention, or gaze. As a result, the boundaries of the here-space – unlike those of Hanks' lived spaces – can change within minutes or even milliseconds. But though the here-space and lived spaces exist on different timescales, they are both **social** divisions of space, not perceptual or (necessarily) physical ones. This contrasts Hanks (1990) and Enfield (2003)'s analyses with more recent location analyses, which I now discuss.

Location: Peripersonal Space

The neuroscientist Kemmerer (1999) offered a new location-based analysis of two-term demonstrative systems. He argued that speaker-proximal and speaker-distal demonstratives encode the referent's location relative to the speaker's **peripersonal space**, defined as the space which the speaker can reach without moving relative to the ground. Neurologically, different brain areas subserve perception of objects inside vs. outside the peripersonal space (di Pellegrino & Làdavas, 2015; Halligan & Marshall, 1991). Kemmerer suggested that speaker-proximal demonstratives encode that the referent is inside the speaker's peripersonal space, while speaker-distals encode it is outside – such that the proximal-distal contrast maps onto the perceptual contrast between peripersonal and extrapersonal space.

Kemmerer ultimately rejected this idea – citing Hanks, he argued that the space indexed by proximal demonstratives is much larger than the peripersonal space. But later experimental

studies challenged this claim. At least in highly controlled, tabletop-size arrays, people quite consistently use speaker-proximal demonstratives, like *this*, for referents in their peripersonal space, and speaker-distals, like *that*, for those outside it, no matter their distance. This pattern has been observed in experimental work with speakers of several unrelated languages (Caldano & Coventry, 2019; Coventry et al., 2008; Skilton & Peeters, 2021). In standard conditions, the peripersonal space extends about 75cm from the body. But because the space is defined by reaching, it – like the here-space – is dynamic. When English and Spanish speakers point at objects using sticks, which expand the peripersonal space, they use proximal demonstratives for more distant objects than when they point with their hands (Coventry et al., 2008).

Some further support for a relationship between proximal demonstratives and reaching space comes from Demonstrative Choice Task studies in English, Spanish, Italian, and Danish (Rocca et al., 2019; Rocca & Wallentin, 2020; Todisco et al., 2021). In this paradigm, people are asked to pair nouns and demonstratives without any extralinguistic context. Across languages, participants more often pair proximal demonstratives with nouns denoting small, inanimate, and harmless referents – that is, things that one could prototypically hold in the hands. On the other hand, referent properties not related to manipulability, such as "pleasantness" (Rocca & Wallentin, 2020), also facilitate the use of proximals in these tasks.

Distance vs. Location: Summary

Both observational and experimental approaches support the idea that demonstratives' spatial deictic content concerns location – relative to some perimeter enclosing the origo – rather than distance. For Hanks (1990), this perimeter is a lived space; for Enfield (2003), it is the here-space; and for experimentalists like Coventry and colleagues (2008), it is the origo's peripersonal

space. On all of these analyses, proximal demonstratives (*this*) convey that the referent is inside of the relevant perimeter, while distals (*that*) convey that it is outside.

Location-based analyses are more different from distance analyses than they seem. To see why, consider Figure 1, which schematically represents a hypothetical speaker and two points, A and B. B is twice as far from the speaker as A. We will assume that A counts as "close" to the speaker in terms of distance, while B counts as "far." The speaker is enclosed by a rectangle, representing a deictically relevant perimeter, such as the here-space or a lived space like the walls of a house. The "near" point, A, is outside the perimeter; the "far" one, B, is inside.

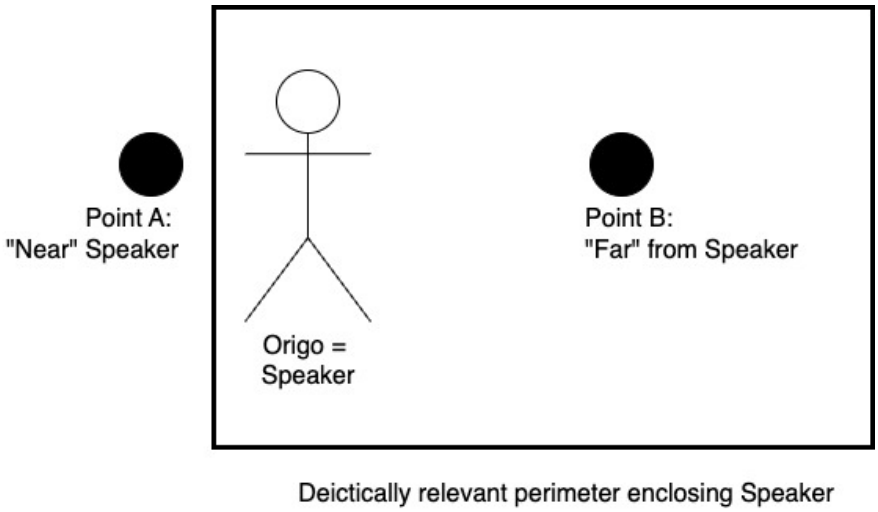

Figure 1. *Comparison of distance vs. location-based analyses of spatial deictic content.*

Because A is near the speaker and B is far, a distance analysis of English demonstratives predicts that the speaker will use *this* for an object at Point A, and *that* for an object at Point B. Furthermore, since distance-based theories do not build in effects of built or lived perimeters, this prediction will be the same whether the perimeter enclosing the speaker is an intangible lived perimeter, such as the borders of an unfenced yard, or a tangible built space, like a brick wall. In contrast, because A is outside the perimeter and B is inside, a location analysis predicts that the speaker will use *that* for objects at A and *this* for objects at B.

Peripersonal space-based analyses also make different predictions from distance-based ones. Distance-based analyses predict that, the farther the demonstrative referent is from the speaker, the more likely they are to use distal demonstratives. Since these analyses do not include thresholds for what referents count as "far," it is fair to assume that the relationship between referent distance and the probability of a distal demonstrative will be approximately linear until some point when it reaches ceiling. This is shown in the left panel of Figure 2, a conceptual graph. On the other hand, peripersonal space analyses predict that speakers will use distals for all referents outside the peripersonal space, and proximals for all referents inside it. Rather than a linear relationship, we expect the probability of the distal to be near 0 inside peripersonal space and near 1 outside it, with a steep rise occurring when the distance of the referent crosses the boundary between peripersonal and extrapersonal space. This prediction is shown in the right panel of Figure 2.

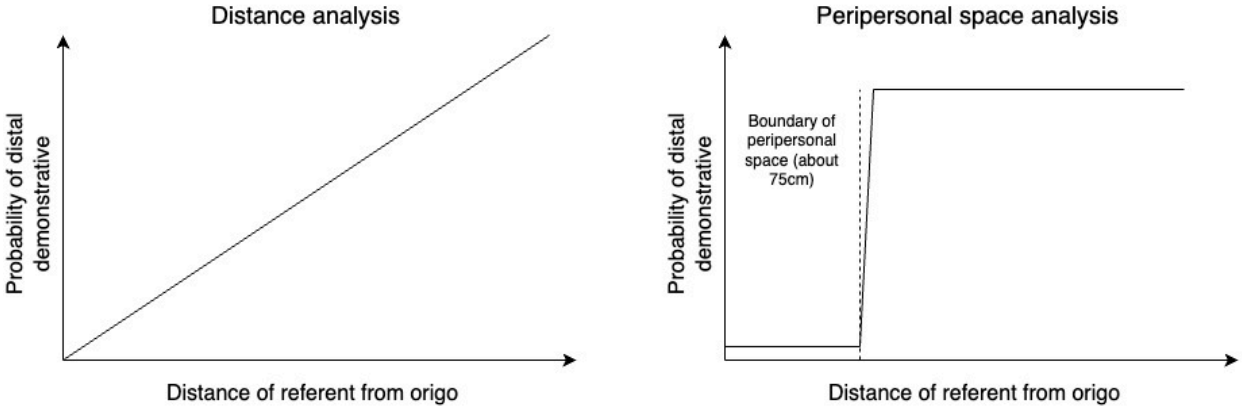

Figure 2. *Comparison of distance- vs. peripersonal space-based analyses of distal demonstratives.*

Real plots of referent distance vs. use of distal demonstratives in experiments (e.g., Coventry et al., 2008) look similar to the right panel of Figure 2. In contrast, empirical research

on demonstrative use has never observed a linear relationship like the one in the left panel of Figure 2. Distance-based theories need to account for this to remain viable.

Is There Non-Spatial Deictic Content?

While a long tradition claims that deictic content concerns only space, another tradition argues that it also includes non-spatial meanings, especially related to perception and attention.

Perception

In the last section, I described arguments that the spatial deictic content of demonstratives concerns location relative to the origo's peripersonal space. The peripersonal space is defined by how far the origo can reach – that is, by the maximum extension of the sense of touch. It is a perceptual **and** spatial construct, not a purely spatial one. Thus, when we claim that location relative to peripersonal space influences demonstrative use, we are implicitly claiming that **perception** matters too.

Do any demonstratives have deictic content that is only perceptual, rather than perceptual-spatial? Many descriptions of Indigenous American languages state that particular demonstratives encode visibility, requiring that the referent is visible (or invisible) to the speaker. But these descriptions often note (e.g. Gillon, 2009, p. 18) that "invisible" demonstratives specifically index referents perceived by hearing. Levinson (2018) therefore argues that all "invisible" demonstratives convey either perception via hearing, or other epistemic/evidential meanings, such as the referent's identifiability. In response, Skilton (2021) shows that in Ticuna, visibility contrasts in demonstratives relate exclusively to vision – whether the speaker can see the referent – and not to hearing or other epistemic/evidential meanings.

It is tempting to assume that visibility matters only in languages with large demonstrative systems, acting as a secondary contrast to distance (Anderson & Keenan, 1985). But even in

English – with just two demonstratives – referent visibility still has significant effects on demonstrative use (Coventry et al., 2014): experimental participants are more likely to use *that* when the referent is invisible. Coventry and colleagues claim that this effect arises from a universal cognitive tendency to conceptualize invisible objects as distant. But this account clashes with findings that speakers of other languages may display no visibility effects on demonstrative use, or an effect in the reverse direction from English (Skilton & Peeters, 2021). The alternative explanation – which needs testing in a larger number of languages – is that visibility effects represent language-specific conventions.

Attention and Engagement

Joint attention (Scaife & Bruner, 1975) occurs when one person directs another's attention to a third person or object. Since demonstratives are a key verbal tool for the achievement of joint attention (Diessel, 2006; Diessel & Coventry, 2020), one would expect that demonstratives' deictic content could include meanings related to joint attention. But so far, the relationship between specific demonstratives and joint attention has proven difficult to replicate.

Defining Joint Attention. Beginning with Küntay & Özyürek (2006), authors have described two ways that speakers use demonstratives to manage their addressees' attention. One use is to establish new joint attention. In this use, the addressee is not attending to the referent, and the speaker uses a demonstrative to call the addressee's attention to it for the first time, either from a neutral state – this is an "attention-calling" use – or from some competing referent, in an "attention-correcting" (Burenhult, 2003) or "redirecting" use (Rubio-Fernandez, 2022). The other use of demonstratives is to maintain existing joint attention. Here, the speaker uses a demonstrative to index an object that the addressee is already attending to. In interactional terms, attention-calling uses of demonstratives are often associated with the initial repair of

misunderstandings, while attention-maintaining uses are associated with successful resolution of misunderstandings (Shin et al., 2020).

Searching for Joint Attention Effects. Many studies (Levinson, 2018; Rubio-Fernandez, 2022; Shin et al., 2020; Skilton, 2019; Woensdregt et al., 2022) have reported that the contrast between attention-calling and attention-maintaining contexts affects speakers' use of demonstratives, especially speaker-proximal and speaker-distal demonstratives. For example, when referent location is constant, Mexican Spanish speakers are more likely to use the "proximal" demonstrative *esta* to correct addressees' attention during misunderstandings, and more likely to use the "distal" *esa* to maintain attention and express agreement with addressees' identification of the referent (Shin et al., 2020). Similarly, Levinson (2018, p. 32) offers typological evidence that attention-calling contexts involving pointing gestures "extend" the spatial range of the speaker-proximal. However, all of the authors cited so far analyze these attention effects as arising from the spatial deictic content of demonstratives (e.g. Shin et al., 2020, p. 505; Skilton, 2019, p. 159) rather than from encoded attention-related meanings.

In contrast, Turkish is a widely cited example of a language where joint attention **has** been analyzed as part of demonstratives' encoded deictic content. It has three demonstratives: *bu, şu* and *o*. Traditional analyses claim that *bu* is speaker-proximal, *o* is speaker-distal, and *şu* is either speaker-medial or addressee-proximal (Kornfilt, 1997; Lyons, 1977). In a classic paper, Küntay & Özyürek (2006) rejected these analyses for *o* and *şu*. Based on recordings of referential communication tasks with three dyads each of adults, four-year-olds, and six-year-olds, they argued that these demonstratives conveyed information about both space and joint attention. Distal *o*, they wrote, requires that the referent is far from the speaker, but it also requires that the referent is already in joint attention (i.e., the addressee is gazing at it). But

"medial" *şu*, on their analysis, has no spatial meaning; it can call new joint attention to referents anywhere in space.

Küntay & Özyürek's (2006) analysis, and a similar proposal by Özyürek (1998), influenced many later approaches to joint attention and demonstratives (e.g., Burenhult, 2003; Evans et al., 2018; Rubio-Fernandez, 2022; Shin et al., 2020). But not all effects in the paper have replicated. Peeters et al. (2014) conducted two identical studies of demonstrative production in Turkish and Dutch with 20 participants each. In these tasks, where in-person participants responded to pictures of hypothetical interactions, experimenters manipulated the referent's location, the referent's joint attention status, and whether the speaker pointed at the referent when they produced the demonstrative. They found the same spatial and attentional effects for *o* as Küntay & Özyürek (2006), but observed no effect of joint attention on *şu*. Subsequently, in a picture-based online task with 50 Turkish speakers, Rubio-Fernandez (2022) manipulated first referent and addressee location (Experiment 2), then referent location and addressee gaze direction (Experiment 4). In Experiment 2, Turkish speakers used primarily *şu* for referents at speaker-medial locations and *o* for referents at speaker-distal locations, regardless of addressee location. But in Experiment 4, where the addressee's gaze direction was manipulated, there was a joint attention effect: regardless of referent location, participants used *şu* more often when the referent was not in joint attention. (Participants' use of *o* was not analyzed.) While these studies support that joint attention affects demonstrative use in Turkish, their results are not consistent enough to support joint attention effects on any **single** demonstrative term.

Dutch is another language where demonstratives may be sensitive to joint attention. It has two demonstratives: "proximal" *deze* and "distal" *die*. Piwek et al. (2008), analyzing recordings of a referential communication task with 10 pairs of Dutch speakers, showed that participants

used *deze* more often than *die* to establish new joint attention, and argued that *deze* encodes "high-intensity indicating," a perceptual-cognitive construct, rather than proximal location. But this finding did not replicate in the Dutch arm of Peeters and colleagues (2014); they observed no effect of joint attention on *deze*. However, Peeters et al. (2014) **did** find that speakers used *die* more often when the referent was already in joint attention; this led them to conclude that *deze* had only spatial meaning, while *die* had both spatial and attentional content.

In summary, although many demonstratives are clearly sensitive to the referent's joint attention status, it remains unclear whether any demonstratives actually encode this as part of their deictic content. All of the most controlled and largest studies on this topic, for example in the literature on Turkish and Dutch, observe **some** effect of joint attention on demonstrative use. However, they do not consistently observe the same effects on the same demonstratives. I explore this inconsistency further in the General Discussion.

Who Is The Deictic Origo?

Some authors argue that demonstratives are always **egocentric**: that they relate the referent only to the speaker (or ego), who represents the sole origo of deictic content. Diessel (2014, p. 128) advocates this view, describing demonstratives as "an egocentric coordinate system … anchored by the speaker's body." While it is common and reasonable to claim that the demonstrative systems of particular languages are purely speaker-oriented (e.g., Clark & Sengul, 1978, p. 458), Diessel's argument is too universalizing. Clear evidence shows that some demonstratives are **non-egocentric**: they relate their referents either to the addressee, or to the interactive dyad formed by the speaker and addressee together.

Addressee as Origo

Demonstratives which convey that the referent is near the addressee, or **addressee-proximals**, are described in many languages and appear in even the oldest demonstrative typologies (Anderson & Keenan, 1985; Fillmore, 1973). In recent years, experimental work has supported the existence of addressee-proximals in Peninsular Spanish, European Portuguese, Japanese, and Ticuna, among many other languages (Coventry et al., 2008; Levinson, 2018; Rubio-Fernandez, 2022; Skilton & Peeters, 2021; Woensdregt et al., 2022). In some of these languages, such as Peninsular Spanish (Rubio-Fernandez, 2022), the demonstrative associated with addressee-proximal reference is 'medial': it indexes both referents near the addressee and referents at a middle distance from the speaker (regardless of addressee location). In other languages, such as Ticuna, the addressee-proximal lacks a speaker-medial reading – it indexes only referents near the addressee (Skilton & Peeters, 2021).

While addressee-proximal demonstratives clearly exist, speaker-centered (proximal and distal) demonstratives **are** privileged above them in several ways. First, a review of cross-linguistic typologies of demonstratives (Anderson & Keenan, 1985; Diessel, 1999, 2013; Levinson, 2004, 2018a) suggests a variety of implicational universals relating speaker- and addressee-centered terms. These are listed in (8)-(10).

(8) Addressee Origo → Speaker Origo
If a language has a demonstrative where the addressee is the only origo, it also has demonstratives where the speaker is (included in) the origo. The addressee is never the origo of all demonstratives in a language.

(9) Addressee Origo < Speaker Origo
If a language has demonstratives where the addressee is the only origo, it has at least as many demonstratives where the speaker is (included in) the origo. Addressee-centered demonstratives never outnumber speaker-centered ones.

(10) Addressee Perception < Speaker Perception

> If a demonstrative has perceptual deictic content, the origo of that content is either the speaker or the speaker-addressee dyad, never the addressee.

Though preliminary, the generalizations in (8)-(10) suggest that across languages, speaker-centered demonstratives are more consistently present, more numerous, and encode more types of information than addressee-centered demonstratives.

A second source of evidence that speaker origos are privileged over addressee ones comes from first language acquisition. Children take much longer to attain adult-like use of addressee-centered demonstrative terms than egocentric ones. One- to four-year-olds learning Ticuna produce speaker-proximal and speaker-distal demonstratives much earlier than addressee-proximals (Skilton 2023), and six- to eight-year-olds learning Turkish display adult-like use of speaker-centered spatial demonstratives, but not of the addressee-centered, attention-calling demonstrative *şu* (Küntay & Özyürek, 2006). Similarly, six- to eight-year-olds learning Mexican Spanish display adult-like sensitivity to space, but not to the addressee's attention state, in their use of the "proximal" term *este* (Shin & Morford, 2020).

A final argument that addressee-centered demonstratives are marked comes from studies of competition between addressee-centered and speaker-centered terms. These demonstrative types compete in two kinds of contexts: (i) when the referent is near both speaker and addressee, meeting the spatial deictic requirements of both speaker- and addressee-**proximals**; and (ii) when the referent is far from the speaker but near the addressee, meeting the spatial deictic requirements of both speaker-**distals** and addressee-proximals.

When the referent is near both speaker and addressee, people use speaker-proximals, not addressee-proximals. Experimental results support this for Japanese, Peninsular Spanish, and Ticuna (Rubio-Fernandez, 2022; Skilton & Peeters, 2021): in all three languages, when the speaker and addressee are together and the referent is at the closest possible position to both

participants, participants essentially always use the speaker-proximal. On the other hand, when the referent is near the addressee and far from the speaker – so that addressee-proximals compete with speaker-**distals** – experimental participants **do** sometimes use addressee-centered terms. But their preference for them is much weaker than one might expect. In the conditions that most favor the addressee-proximal, where the referent is at the closest possible position to the addressee and the farthest possible position from the speaker, the addressee-proximal is used in just ~25% of trials by Ticuna speakers (in a live task), ~35% by Peninsular Spanish speakers (in a picture task), and ~55% by Japanese speakers (also in a picture task; Rubio-Fernandez, 2022; Skilton & Peeters, 2021). Combined, these low figures indicate that – at least in experimental conditions – the addressee-proximal is never as strongly preferred for the addressee's space as the speaker-proximal is for the speaker's.

Rubio-Fernandez (2022) interprets the results just discussed as evidence that the Spanish and Japanese 'medial' or 'addressee-proximal' terms have two origos: they encode that the referent is **both** far from the speaker and near the addressee (cf. Woensdregt et al., 2022 on European Portuguese). While the dual-origo analysis accounts for the Spanish and Japanese results well, it may not be appropriate for all addressee-centered demonstratives, since – in some languages – these **can** be used for referents near both speaker and addressee. For example, in all four languages with addressee-proximals described by Levinson and colleagues (2018, pp. 249, 272, 326, 374), addressee-proximals can be used for the addressee's body parts, and for objects in contact with the addressee's body (e.g. an insect on the addressee's shoulder), even when the speaker and addressee are side-by-side. Since the referents are close to both participants in these contexts, the Levinson et al. data is incompatible with an analysis of the addressee-proximal as also encoding that the referent is far from the speaker. Future research needs to explore whether

this type of context, which was not examined in the experiments reviewed above, also allows addressee-proximals in other languages.

Speaker-Addressee Dyad As Origo

Some evidence suggests that demonstratives can relate the referent to the interactive **dyad** jointly formed by the speaker and addressee, as well as to the speaker or addressee individually. Dyad-centered demonstratives have been described in Brazilian Portuguese (Meira & Guirardello-Damian, 2018), Dutch (Peeters et al., 2015), Peninsular Spanish (Jungbluth, 2003), Ticuna (Skilton, 2019), and Yucatec (Hanks, 1990), among other languages. In some of these languages, such as Spanish, Brazilian Portuguese, and Dutch, the dyad is analyzed as the sole origo of all spatial deictic content. Referents inside the space of the interaction – whether in the speaker's space, the addressee's space, or between the participants – are indexed with the proximal; only referents outside the interactive space are distal (Jungbluth, 2003; Meira & Guirardello-Damian, 2018; Peeters et al., 2015). In other languages, including Yucatec and Ticuna, dyad-centered demonstratives coexist with speaker-centered and addressee-centered forms (Hanks, 1990; Skilton, 2019).

Dyad-centered demonstratives can be empirically difficult to distinguish from speaker-centered terms. This is because, to identify a dyad-centered demonstrative, one needs a context where the discourse participants have asymmetrical (spatial) relationships to the referent (Hanks, 1990, p. 424; Wilkins, 2018, p. 53).. Otherwise, the extension of these terms is the same: for example, if the speaker and addressee are together and the referent is near both of them, either a speaker-proximal or a dyad-proximal is equally appropriate.

To reliably identify dyad-centered demonstratives, speaker and addressee must be far enough apart that their peripersonal space (the zone of the speaker-proximal) does not overlap.

Dyad-proximals will then index referents located anywhere within the interactive space, whether they are near the speaker, near the addressee, or between the participants (Jungbluth, 2003; Wilkins, 2018). In contrast, **speaker**-proximals will index only referents within the speaker's peripersonal space. For example, in Figure 3, the referent (black dot) is outside of the speaker's peripersonal space (solid rectangle), but inside the interactive space (dotted rectangle). Thus, this referent is **speaker**-distal, but **dyad**-proximal. To be dyad-distal, it would need to be outside the interactive space as well as the speaker's peripersonal space.

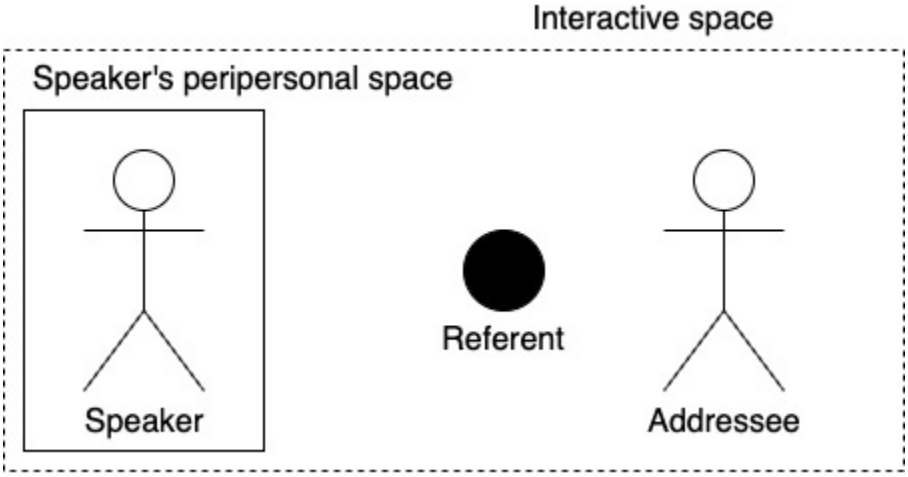

Figure 3. *Comparison between speaker-centered and dyad-centered proximal demonstratives.*

In contrast to the observational and comprehension studies cited at the beginning of this section, production tasks often do not support the existence of dyad-centered demonstratives. For example, although observational work on Ticuna (Skilton, 2019) and an ERP study of Dutch (Peeters et al., 2015) suggested that both languages had dyad-centered demonstratives, production experiments found no evidence for dyad origos in either language (Skilton & Peeters, 2021). Similar issues appear for Peninsular Spanish and Yucatec. In Spanish, observational work (Jungbluth, 2003) argued that *este* was dyad-proximal, but production studies support that it is speaker-proximal (Coventry et al., 2008; Rubio-Fernandez, 2022). Likewise, in Yucatec, Hanks

(1990) argues that the "non-immediate" demonstrative series is addressee- or dyad-centered, but Bohnemeyer (2018) suggests, from results of a semi-experimental task, that the non-immediate series are actually speaker-centered distals.

What accounts for these inconsistencies? In Spanish and Yucatec, the more recent studies identify issues with the data cited in previous work, such as conflation of the filled-pause and demonstrative functions of *este* (Rubio-Fernandez, 2022). But in other languages, authors suggest that differences in findings about dyadic origos reflect differences in task characteristics, as I discuss further in the next section.

General Discussion and Outlook

As research on deixis has boomed over the last two decades, the field has collected data about the deictic content of demonstratives in many languages, with many methods – ranging from observational field studies to EEG. Despite their differences in method, most recent studies have reached similar conclusions about the spatial deictic content, nonspatial deictic content, and origo of demonstratives. In response to these conclusions, linguists need to change our assumptions and reframe our research questions about the word class.

Spatial Content

On balance, the evidence now supports that the spatial deictic content of demonstratives concerns the referent's location relative to a perimeter enclosing the origo, not the referent's distance from the origo. As discussed above, observational data has been crucial to the field's movement from distance to location analyses, and motivated many early experiments comparing these analyses. Yet while both observational and experimental studies favor location analyses, they do not support exactly the same conclusions. Experimental studies argue that spatial deictic content concerns only location relative to the origo's reaching/peripersonal space. Observational

studies do note the effects of reaching space, but they give more importance to larger perimeters, such as the here-space or enduring built spaces. If our end goal is to account for people's actual demonstrative use, we must take this data seriously – and it strongly suggests that the spatial deictic content of demonstratives can concern perimeters other than the peripersonal space.

This raises a new question: Which space matters when? For example, location inside vs. outside peripersonal space has clear effects on demonstrative use in tabletop-sized tasks, but this does not entail that it has an equal effect in other contexts. To show that peripersonal space is the main perimeter relevant to demonstratives' spatial deictic content, future research will need to extend the tabletop-space results to observational studies, comprehension tasks, and production tasks at larger spatial scales. Conversely, if built perimeters are relevant, then future research should be able to demonstrate that effect in experimental as well as observational data.

Nonspatial Content

Recent results also support that demonstratives' deictic content is not exclusively about space – nonspatial properties of the referent also matter. The most active debate in this area is about whether any language has demonstratives lexicalized for calling vs. maintaining joint attention. One reason this debate continues is that, as mentioned above, older and newer studies of joint attention effects have sometimes reached conflicting results. Since newer studies (Peeters et al., 2014; Rubio-Fernandez, 2022) include many more participants than older ones (Küntay & Özyürek, 2006; Piwek et al., 2008) and therefore have higher statistical power, one could simply discount the older research. But, while the newer studies are larger, they also use a very artificial method: eliciting demonstratives by showing participants pictures of hypothetical interactions. In contrast, older studies relied on much more naturalistic recordings of joint activity where participants were not directly prompted to use demonstratives.

This difference matters: speakers' metalinguistic intuitions about demonstratives often conflict with their production in conversation (Hanks, 2009) and even with their online processing (Peeters et al., 2015; Stevens & Zhang, 2013). Thus, future research in this area should explore the consistency of metalinguistic, picture-based elicitation results with observational data and more naturalistic production tasks. Researchers should also consider designing higher-powered studies using referential communication tasks. As Shin and colleagues (2020) show, these tasks can easily be adapted to include more participants or exercise greater control of the referent's joint attention status.

Addressee and Dyad Origos

The last two decades have produced abundant evidence that the speaker is not the only deictic origo – the addressee, and perhaps the speaker-addressee dyad, can also act as a deictic origo. But while recent research supports the existence of these non-egocentric origos across a range of languages, it also supports that addressee- and dyad-centered demonstratives generally coexist with speaker-centered terms. Thus, future research needs to shift the origo debate from **whether** non-egocentric demonstratives exist (or whether a particular demonstrative is egocentric) to **when** speakers choose an addressee/dyad-centered term over an egocentric one.

In languages which have addressee-centered demonstratives, this question may boil down to language-specific properties of the addressee-centered term. But in other cases, the difference between egocentric and addressee-/dyad-centered construals cannot be chalked up to language or population properties. Adult speakers of the same language can display dyad-centered construals of a given demonstrative in one task, and egocentric construals in another, as in Dutch (Peeters et al., 2015; Skilton & Peeters, 2021).

What causes this variation between tasks? Existing studies were not designed to answer this question. But authors have offered some possibilities – for example, Peeters and colleagues (2021) propose that a requirement to remember object location may encourage egocentric reference. Besides these task characteristics, one can also imagine many other possible factors influencing the choice between egocentric and non-egocentric forms, such as the referent's contact with the addressee's body or the presence of other possible referents in the addressee's reaching space (i.e., contrast). Future research needs to explore these factors as well as classic variables like attention and addressee location.

Other Topics for Further Research

The literature on deictic content still has certain limitations. First, this work is almost entirely about nominal (*this/that*) demonstratives. Except in Hanks (1990) and Levinson et al. (2018), there is almost no research on the deictic content of locative (*here/there*) demonstratives. Since works that do compare nominals and locatives observe many differences (Levinson, 2018, pp. 17–18), we cannot assume that findings about nominals will simply generalize to locatives. Second, most work on deixis in minority and endangered languages is dated. Despite the publication date of Levinson et al. (2018), much of the research in the volume was done in the 1990s and early 2000s and does not necessarily speak to today's debates. As research on demonstratives in national languages continues to expand, new work is necessary on minority languages too. Third, despite the decisive influence of observational studies in earlier years, contemporary work on adults' demonstrative use is almost all experimental. Observational studies are needed too. They will not only extend experimental results, but also reveal new uses of demonstratives which researchers have yet to explore.

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