

Pronominal Typology and Reference to the External World*

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Abstract

Recent years have seen a surge in research on speech-accompanying gestures, often focusing on iconic gestures. This paper explores pointing gestures and their interaction with different types of 3rd person pronouns (e.g., anaphoric *vs.* deictic pronouns). While pointing gestures are often mentioned in the formal linguistic literature on deictic expressions, such as demonstratives, these gestures are less frequently investigated for their own sake. I aim to contribute to our understanding of pointing gestures by mapping the relationships that pronominal expressions can have with referents present in the utterance situation, and by investigating how they interact with pointing. I argue that pointing gestures are attention-directing devices that freely co-occur with anaphoric expressions; by contrast, the introduction of a new referent through deixis requires contrastive focus in addition to pointing.

1 Anaphora, Exophora, Deixis, and Pointing

In recent years, speech-accompanying gestures (McNeill 1992, Kendon 2004) have attracted a fair share of attention in the formal linguistics literature (e.g., Lascarides & Stone 2009, Ebert & Ebert 2014, Schlenker 2018a, Esipova 2019). This paper explores interactions between pointing gestures, pronominal expressions, and referents in naturalistic discourse situations (as opposed to written text). My core questions are: [i.] what kinds of DPs *can* co-occur with a pointing gesture (and to what effect), and [ii.] when does pointing become *necessary*?¹ As of now, such questions have largely been backgrounded, often with an implicit consensus that Lücking (2018:256) illustrates with examples such as (1a) and (1b), and which he describes as follows: “a demonstration [i.e., pointing gesture] cannot be associated with an endophoric [i.e., anaphoric or cataphoric] demonstrative, while it is obligatorily connected to [deictic]² uses”. The relevant intuition is that the phrase *that donkey* cannot be accompanied by a pointing gesture, [☞], if it is used anaphorically (here: as a donkey-pronoun), (1a). By contrast, a pointing gesture is required to introduce a new referent into the discourse based on the individuals that are present in the utterance situation, (1b).³ In what follows, I approach (1a) and (1b) by pursuing a strategy of focusing

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²Here, the term ‘kinds of DPs’ subsumes both semantic types (e.g., definite expressions that are anaphoric *vs.* deictic) and morphosyntactic types (e.g., pronominal expressions that are clitic *vs.* non-clitic).

³The original statement in Lücking (2018:256) uses *exophoric* (i.e., “... obligatorily connected to exophoric uses”). In this paper, I follow Cornish (1999; 2010) in treating *exophora* as a type of *anaphora*, which contrasts with *deixis*.

⁴I use bold type in examples for emphasis only, not for stress. Stress is marked by capitalization. Lücking (2018:257) does not provide stress marking for (1a)-(1b); however, intuitively, *that* must be stressed in (1b). This will be crucial for my discussion, and I come back to this in section 3.

on more basic questions, such as, with regards to (1a): “Is there an entity in the external world that can felicitously be pointed at?” – or, with regards to (1b): “Is there a potential discourse referent in the external world that is salient enough to be picked up without pointing?”

- (1) *Context: k is a non-salient individual in the utterance context* (Lücking 2018:256, adapted)
- a. Every farmer who owns a donkey_i beats that donkey_{i/*k} *covarying / anaphoric*
 b. Every farmer who owns a donkey_i beats [\square]**that** donkey_{k/*i} *fixed / deictic*

To begin with, let me state the somewhat trivial fact that there are two relationships that a speaker and hearer can have to a discourse referent that is associated with a definite description such as *that/the donkey*, or with a pronoun such as *it*. The referent can either be present in the external world in the utterance situation, or not. In (2), the external world (utterance situation) does not contain a referent for the pronoun *it*. The interpretation of *it* covaries with the indefinite *a leprechaun* across situations that are quantified over, and (2) might well be true if there are no leprechauns that exist in the whole world of evaluation. This use of *it* is prototypically *anaphoric*, as the pronoun is referentially dependent on its antecedent (*a leprechaun*); see Evans (1980:358). Adding a pointing gesture to (2) is non-trivial, since there is no entity in the external world in the utterance situation that could easily be pointed at.⁴

- (2) Whenever I see **a leprechaun**, I will do my best to avoid **it**.

In contrast to (2), the pronoun *it* in (3) is usually classified as an *exophoric* pronoun (e.g., by Cornish 1999:112; see also Halliday & Hasan 1976:32-36), which picks up a referent present in the external world (a dog that both hearer and speaker can see in the utterance situation). I will adopt the terminology from Cornish (2010:220), who contrasts the exophoric pronoun *it* in (3) with the deictic expression *that* in (4), and argues that exophoric uses are a sub-type of anaphoric uses.⁵ He treats both exophora and non-exophoric anaphora as different from *deixis*, defined as follows: “Deixis serves prototypically to orientate the addressee’s attention focus towards a *new discourse entity* – or to a *new aspect* of an already-existing discourse referent” (Cornish 2010:218, italics added). Exophoric pronouns, (3), thus presuppose their referent’s existence and salience, whereas deictic expressions, (4), assert the existence and salience of their referent.

Note that (3) seems to be most natural when accompanied by a type of pointing where the speaker slightly tosses or tilts her head, but, crucially, (3) is acceptable without any pointing. Zooming out, we must bear in mind that the boundaries between exophora, (3), and deixis, (4), are necessarily fluent. If, in the context in (4), A can assume that B has already noticed the strange bird, then *that* may well assume an exophoric (referent-presupposing) use rather than a deictic (referent-asserting) use, thus turning (4) into another example of what (3) illustrates.

- (3) [A and B turn a corner on the pavement, and suddenly find themselves face to face with a rather large dog]
 A to B: Do you think **it**’s friendly?
 (Cornish 1999:112, who adapts it from Yule 1979)

⁴However, see (19) for a strategy that involves establishing schematic positions in gesture space, so-called *gestural loci* (coined after the loci of sign language; see Schlenker, to appear). This strategy is available for both (1a) and (2).

⁵There is no single standard use for the labels *anaphoric* vs. *exophoric*. While Cornish (1999; 2010) argues that exophoric uses are a sub-type of anaphoric uses, Halliday & Hasan (1976:33) treat *anaphora* vs. *exophora* as two distinct ways of referring. Correspondingly, Cornish groups anaphora/exophora together, set apart from deixis, whereas many scholars group exophora/deixis together, set apart from anaphora. I adopt Cornish’s use of the terminology.

- (4) A to B: Hey, look at [☞] **that!** (uttered with a pointing gesture towards a strange bird perched on the branch of a tree near the interlocutors)
(Cornish 2010:219, adapted)

Having illustrated three types of relationships between pronominal expressions and the external world, we can now operationalize our definitions. *Non-exophoric anaphoric expressions* (short: *anaphoric expressions*), (2), are referentially dependent on an overt linguistic antecedent. By contrast, *exophoric anaphoric expressions* (short: *exophoric expressions*), (3), are referentially dependent on a presupposed non-linguistic ‘antecedent’⁶ that is present in the external world in the utterance situation. Finally, *deictic expressions*, (4), select a referent that is externally present in the utterance situation, and introduce it into the conversation as a new salient discourse entity.

Having defined *anaphoric* and *exophoric* in this way, a non-trivial issue emerges from examples (5a) and (5b), which a reader should keep in mind. In (5a), the 3rd person singular bound pronoun *it* has an overt linguistic antecedent (the distributive quantifier *each of them*), yet the three individuals that are quantified over are also all present in the external world. In spite of these individuals being present, *it* is clearly anaphoric in (5a), as it cannot be referentially dependent on any one of the three individuals in the external world. The same conclusion does not carry over to the plural pronoun *they* in (5b), which refers to the whole group of three dogs, and seems to give rise to the familiar *bound vs coreferential* ambiguity from Reinhart (1983). At least in principle, we expect that (5b) has a (*bound*) anaphoric reading where *they* referentially depends on the DP *these dogs* and is syntactically bound by it. In addition, we expect (5b) to have a (*coreferential*) exophoric reading where *they* referentially depends on the actual group of dogs that are present in the external world and is not syntactically/semantically bound by *these dogs*. I mark these two readings of (5b) with a subscript *i* for the bound reading and *x* for the exophoric reading. Note that exophoric reading may be blocked by a preference of binding over coreference.

- (5) [A and B turn a corner, and find themselves face to face with three extremely large dogs]
a. A to B: Do you think [**each of them**]_i knows that **it**_i could easily overpower one of us?
b. A to B: [**These dogs**]_i look like **they**_{i/x}’re angry.

Having thus established a number of factors that need to be taken into consideration in a discussion of pointing, I proceed by outlining the core data set that I analyze in this paper.

2 Core Data: Pointing with Anaphoric and Deictic Pronouns

As discussed, my core question is when pointing is possible and/or necessary for different pronoun types. Quite generally, the interaction between pointing gestures and non-demonstrative pronouns (such as *it*, *they*, or *him*) remains underexplored. Cardinaletti & Starke (1999:153), in their paper on pronominal typology, discuss how pointing relates to the distinction between full pronouns (*elle* ‘her’) and clitic pronouns (*l’/la* ‘her’) in French. Examples (6a) and (6b) presumably involve the introduction of a new referent into the

⁶Here, *antecedent* (in single quotation marks) refers to the actual individual in the external world. Cornish (1999:ch.4, 2010) treats exophoric pronouns as *pragmatically controlled anaphoric pronouns*. Many scholars working on such expressions raise the question of whether anaphoric pronouns like *it* in (3) should be called “antecedentless”. Yule (1979:127) writes, on this matter: “The antecedent, if that is at all an appropriate term, is in the context or the situation.”

discourse by means of deixis (as defined in section 1). In this case, a pointing gesture can combine with the non-clitic pronoun *elle* ‘her’ in (6a), but not with the clitic pronoun *la* ‘her’ in (6b). However, pointing is not limited to deixis; it is also possible in anaphoric contexts like (6c), where pointing accompanies the clitic *la* ‘it.FEM’, whose referent has already been introduced into the discourse by virtue of the antecedent *cette maison* ‘this house’ in the previous sentence. Note that (6c) is parallel to (5b) in that *la* ‘it.FEM’ may referentially depend on *cette maison* ‘this house’ (in which case it would be non-exophoric) or on the actual house in the utterance situation (in which case it would be exophoric).

- (6) a. J’ai vu Marie puis j’ai vu [☞]elle. *French*
 I=have seen Marie then I=have seen her
 ‘I have seen Marie and then I have seen [☞]her(≠ Marie).’
 b. *J’ai vu Marie puis je [☞]l’ai vue.
 I=have seen Marie then I her=have seen
 c. Mets-toi ici et regarde **cette maison**. Tu [☞]la vois bien maintenant?
 come here and look.at this house you it see well now
 ‘Come here and look at **this house**. Do you see [☞]it(=the house) well now?’

Clitics are an optimal case study to begin with, since they typically cannot be used in deictic contexts, as in (6b); they are restricted to anaphoric contexts. Notably, they can also be used in exophoric anaphoric contexts, as illustrated for English *’im* in (7), modeled after (3).

- (7) [In an old castle, A sees a man’s ghost come towards A and B]
 A to B: Do you see **’im**?

However, French clitics sometimes exhibit hallmark signs of non-clitic pronouns; for instance, the subject clitic *il* ‘he’ can be contrastively focused (Cardinaletti & Starke 1999:218-219) and occur in the disjunction *il ou elle* ‘he or she’ (Sportiche 1998:311), both of which are usually not possible for clitics. I thus proceed with data from Colloquial Viennese German, another language with a full vs. clitic distinction, but which disallows focused or coordinated clitics.

Recall my initial questions, stated above: [i.] what kinds of DPs *can* co-occur with a pointing gesture (and to what effect), and [ii.] when does pointing become *necessary*? In the remainder of this section, I answer these questions as follows: first, both anaphoric/exophoric pronouns and deictic pronouns can co-occur with a pointing gesture, the effect of which is explored in sections 3 and 4; second, pointing is required for deixis in scenarios with more than one possible referent.

Let us start by setting up the context in (8). This is a context that introduces a salient and familiar individual into the discourse, which is also present in the utterance situation, namely Peter. Moreover, the context explicitly contains several other possible discourse referents. We can now introduce a pronoun in the next sentence to see if it permits an anaphoric/exophoric reading (referring to Peter) or a deictic reading (selecting a new referent from the people in the room).

- (8) *Context*: at a party with fancy costumes, we are observing how people are dressed.
Der Peter ist angekommen.
 the Peter is arrived
 ‘Peter has arrived.’ [followed by a short pause]

An anaphoric reading, where the pronoun refers to Peter, can be forced by using the clitic pronoun *’en* ‘him’. We can now check whether such an anaphoric pronoun can combine with a pointing gesture. As shown in (9), the answer is affirmative. Crucially, (9) can only have the anaphoric reading in (9a) (which may be exophoric or not, in line with (5b) and (6c)), and it cannot have a (new-discourse-entity-introducing) deictic reading, as shown in (9b).

(9) clitic pronoun with pointing gesture (anaphoric reading only)

Hast'en^[☞] schon gsehn?
 have.you=him already seen

- a. OK: 'Have you already seen **Peter**, who, by the way, is over there?' (^{OK} *anaphoric*)
 b. #: 'Have you noticed **the new guy** over there already?' (# *deictic*)

Intuitively, in order to introduce a new discourse referent, the pointing gesture has to co-occur with contrastive focus (see also Ahn 2017:37), which is only possible for non-clitic pronouns, as shown in (10). In the context in (8), the combination of pointing and contrastive focus appear to be necessary for introducing a new discourse referent, (10b) *vs.* (9b), but it is not sufficient, as shown by (10a); the anaphoric reading remains available. In the anaphoric reading, contrastive stress presumably targets Peter as the current aboutness topic, giving rise to a contrastive topic interpretation in Krifka's (2008) sense; i.e., *HIM* is a focused topic constituent, which serves to highlight that the speaker is answering sub-questions of *Who have you seen?* (e.g., {*Have you seen Peter?*, *Have you seen Sue?*, *Have you seen Ann?*, ...}); see also Beaver et al. (2017). An open question with regards to (10a) *vs.* (10b) is whether the pointing gesture itself differs across contexts, e.g., the pointing gesture may be less pronounced and emphatic in (10a) than in (10b).⁷

(10) stressed non-clitic pronoun with pointing gesture (ambiguous)

Hast **IHN**^[☞] schon gsehn?
 have.you HIM already seen

- a. OK: 'Have you already seen **PETER**, who, by the way, is over there?' (^{OK} *anaphoric*)
 b. OK: 'Have you noticed **the new guy** over there already?' (^{OK} *deictic*)

Note that it is the combination of these two ingredients (pointing and contrastive focus) that seems to give rise to the introduction of a new (3rd person) discourse referent.⁸ In the context in (8), contrastive focus alone is not sufficient to introduce a new discourse referent, (11b).⁹

(11) stressed non-clitic pronoun without pointing gesture (anaphoric reading only)

Hast **IHN** schon gsehn?
 have.you HIM already seen

- a. OK: 'Have you already seen **PETER?**' (^{OK} *anaphoric*)
 b. #: 'Have you noticed **the new guy** already?' (# *deictic*)

To summarize the observations in (9)-(11), we can conclude that there are at least two ways in which pointing gestures interact with pronominal expressions whose referent is present in the utterance situation. They can co-occur with anaphoric pronouns, (9a) and (10a), in which case they add surplus information on where the intended referent is located. Alternatively, they can co-occur with non-anaphoric deictic pronouns, (10b), as part of introducing a new discourse referent. Importantly, the second case also requires contrastive stress on the pronoun in the context in (8).

Having established that pointing can occur both with anaphoric/exophoric pronouns (with or without contrastive stress) and with deictic pronouns (with contrastive stress), we can ask what the pointing gesture contributes. In sections 3 and 4, I argue that, as proposed by Lücking (2018), pointing is merely an attention-directing device. In anaphoric/exophoric

⁷I thank Masha Esipova (p.c.) for pointing out this possible difference in the pointing gesture itself.

⁸As pointed out by an anonymous reviewer, 1st and 2nd person pronouns behave differently with regards to some of the properties that I discuss, which is presumably related to the fact that their intended referent is, by default, self-evident.

⁹One may wonder whether pointing would still be necessary for (10b) in a context where only one other person is in the room; crucially, this is the type of scenario, briefly discussed for (3) *vs.* (4), where the lines between an exophoric/anaphoric and a deictic reading are blurred, as speaker and hearer may both already be aware of the single other person.

contexts, it signals the location of the intended referent in the utterance situation. In deictic contexts, contrastive focus introduces a set of alternative individuals, and signals that the intended antecedent is not the most prominent one (i.e., it is a non-default antecedent); pointing is merely the auxiliary attention-directing device that enables the hearer to identify the intended referent by virtue of signaling the referent's location. Crucially, pointing serves as an attention-directing device across all of the constructions that I discuss; it never introduces discourse referents by virtue of its own semantics.

3 Analysis, Part I: Contrastive Focus + Pointing = Deixis

Let us start with the observation that clitic pronouns, as opposed to stressed full pronouns, can never be used to deictically introduce a new referent, as shown in (12) (repeated from (9b)/(10b)).

- (12) Hast **IHN**^[☐] schon gesehn? / #Hast'en^[☐] schon gesehn?
 have.you HIM already seen have.you=im already seen
intended: 'Have you already seen **the new guy** over there?' (*deictic new referent*)

For reasons of space, I only discuss 3rd person pronouns in this paper; building on Patel-Grosz & Grosz's (2017) proposal of structural asymmetry between weak/clitic and strong pronouns (based on Schwarz 2009), I propose that the clitic *vs.* full pronoun distinction in Colloquial Viennese German reflects a different internal structure. This is given in (13a) *vs.* (13b) for the personal pronouns in (12); $\llbracket \text{NP}_n \rrbracket^g$ represents the denotation of a salient null NP_n; the clitic '(e)n involves a weak article *the_{weak}* (which only conveys uniqueness), whereas the strong *ihn* involves a strong article *the_{strong}*, and a referential index (here: 1), by virtue of which it also marks familiarity. Since (13ab) are adopted directly from Patel-Grosz & Grosz (2017), I refer the interested reader to this paper with regards to the details of the implementation that are orthogonal to the current aims.¹⁰

- (13) a. $\llbracket '(e)n \rrbracket^g = \llbracket \llbracket \text{the}_{\text{weak}} s_r \rrbracket \text{NP}_n \rrbracket^g = \iota x [\llbracket \text{NP}_n \rrbracket^g(x)(g(s_r))]$
 b. $\llbracket ihn \rrbracket^g = \llbracket [1 \llbracket \text{the}_{\text{strong}} s_r \rrbracket \text{NP}_n \rrbracket \rrbracket^g = \iota x [\llbracket \text{NP}_n \rrbracket^g(x)(g(s_r)) \ \& \ x = g(1)]$

In Colloquial Viennese German, non-clitic 3rd person pronouns of the (13b) type can be contrastively stressed with a deictic use, as in (12), whereas clitic pronouns of the (13a) type cannot be stressed or used in a deictic way. Based on this observation, I propose that stress on *ihn* 'him' in (12) is contrastive focus on the index, (14ab), which flags alternative individuals in the resource situation s_r that fulfil the NP property. For reasons of simplicity, I assume that the NP property here is resolved towards $[\lambda x. \lambda s. x \text{ is a man in } s]$. The set of alternatives given in (14b) thus does not pick out alternatives for the unique individual who is a man in the situation of evaluation, but it picks out index-based alternatives, given that, even in a situation that contains more than one man, there will only be one man who is associated with the index 1, 2, 3, etc.

- (14) a. $\llbracket [1_F \llbracket \text{the}_{\text{strong}} s_r \rrbracket \text{man} \rrbracket \rrbracket_o^g = \iota x [x \text{ is a man in } g(s_r) \ \& \ x = g(1)]$
 b. $\llbracket [1_F \llbracket \text{the}_{\text{strong}} s_r \rrbracket \text{man} \rrbracket \rrbracket_{\text{Alt}}^g = \{ \iota x [x \text{ is a man in } g(s_r) \ \& \ x = g(i)] \mid i \in \mathbb{N} \}$

¹⁰Specifically, I remain agnostic as to whether the silent NP is provided by means of NP deletion (see Elbourne 2013) or as a contextually supplied variable of type $\langle e, \langle s, t \rangle \rangle$; for bound uses of both (13a) and (13b) (which involves situation binding), see Patel-Grosz & Grosz (2017:278-279) and Elbourne (2013:196). Note that I differ from Patel-Grosz & Grosz (2017) in that they propose the structural asymmetry in (13ab) for German personal pronouns *vs.* demonstrative pronouns; by contrast, I here apply this analysis to the clitic *vs.* full pronoun distinction in Colloquial Viennese German.

I propose the following analysis, illustrated for (15a), a variant of (10b). First, contrastive focus on *ihn* gives rise to the alternatives in (15b), which spell out (14b). Second, contrastive focus on *ihn* also triggers an inference, in (15c), that the intended antecedent is not the default antecedent. In other words, in the deictic reading of (15a), contrastive stress signals a non-default reference continuation, i.e., reference to a non-discourse-prominent individual, which triggers the search for a suitable discourse referent. Such a discourse referent is not provided in the relevant context (originally provided in (8)), which only mentions Peter. Therefore, the pointing gesture is needed to direct the hearer's attention towards a possible (and intended) referent, (15d). We thus derive that pointing in combination with contrastive focus gives rise to the deictic introduction of new referents, while pointing itself purely amounts to an attention-directing device.

(15)a. *Context*: at a party with fancy costumes, we are observing how people are dressed.

Ich schau mir grad **IHN**_[☞] an.

I look.at me right.now HIM V.PRT

^{OK} 'I'm just looking at **the new guy** over there.' (^{OK} *deictic*)

b. *alternatives activated by contrastive focus on 'IHN'*

$\llbracket \mathbf{IHN} \rrbracket_{\text{Alt}}^g = \{ \iota x [x \text{ is a man in } g(s_r) \& x = g(\mathbf{1})], \iota y [y \text{ is a man in } g(s_r) \& y = g(\mathbf{2})], \dots \}$

c. *inference triggered by contrastive focus*

$\rightsquigarrow \llbracket \mathbf{IHN} \rrbracket_o^g$ is not the most prominent discourse referent

d. *non-at-issue inference (presupposition) triggered by the pointing gesture*

$\rightsquigarrow \llbracket \mathbf{IHN} \rrbracket_o^g$ is at the position the speaker is pointing to

In contrast to approaches that intimately tie pointing gestures to deictic reference, I have thus proposed that pointing gestures merely locate a referent, (15d), while (contrastive) focus triggers alternatives (Krifka 2008), (15b), and a shift towards a non-default antecedent, (15c). All of these components are necessary conditions that license, but do not entail, the deictic introduction of a new discourse referent. Section 4 will elaborate on pointing outside of deixis contexts.

As for (15c), contrastive stress has previously been observed to trigger a non-default interpretation with pronouns (e.g., in Larson & Luján 1989), as illustrated in (16), from Givón (2001:419). Givón (2001) observes that the stressed pronoun in (16b) gives rise to an *object-to-subject switch* (i.e., the preference is for *HE* to refer to Joe), whereas (16a) is typically understood to involve *subject continuity* (i.e., the preference is for *he* to refer to Bill). Since subjects (here: *Bill*) are typically more prominent than objects (here: *to Joe*) and thus qualify as the default antecedents for subsequent pronouns (*he*), contrastive stress can be said to trigger an inference towards a non-default antecedent (namely *Joe*). As of now, it is an open question how this non-default-antecedence inference comes about, but this could plausibly be an instantiation of emphatic focus (as described, e.g., in Eckardt 2001). Note, also, that the triggering of (15c) seems to be more of a preference rather than an obligatory inference, as (16a) retains a reading where Joe is the antecedent, and (16b) has a reading with Bill as the antecedent. (Similarly, the availability of anaphoric readings, (10a)/(11a), entails that this inference does not always arise.)

(16)a. Bill talked to Joe and then **he** left. (*preference for Bill as antecedent*)

b. Bill talked to Joe and then **HE** left. (*preference for Joe as antecedent*)

Revisiting Lücking's (2018:257) example (1b) from this perspective, we notice that a similar role of contrastive focus can be observed in (17a) vs. (17b); in order to trigger a deictic reference to the individual in the utterance context, contrastive focus (not marked by Lücking) is required.

(17) *Context: k is a non-salient individual in the utterance context*

- a. Every farmer who owns a donkey _{i} beats [\mathbb{F}]**THAT** donkey _{k/i}
 b. [?]* Every farmer who owns a donkey _{i} BEATS [\mathbb{F}]**that** donkey _{k/i}

Section 4 proceeds by exploring the semantic contribution of the pointing gesture itself, which, in (15d), I sketched as follows: *x is at the position the speaker is pointing to.*

4 Analysis, Part II: Pointing with Anaphoric Expressions

To capture the core data in section 2, I propose three components, which I will discuss in turn: first, all co-speech pointing can be analyzed as pointing at a situation rather than at an individual (a revision of (15d)); second, co-speech pointing is purely an “attention directing device” (Lücking 2018:277); and, third, a pointing gesture is interpreted like any other co-speech gesture.

Let me start with the first component, i.e., the idea that all co-speech pointing can be analyzed as pointing at a situation (i.e., *situation-denoting pointing*) and may not involve pointing at an individual (i.e., *individual-denoting pointing*). If pointing is situation-pointing, individuals in the respective situations can be picked out via situational uniqueness (see Elbourne 2013:193). So, in a case like (18a), repeated from (12), a speaker points at a situation s , contained in the utterance situation, which contains a unique referent for the definite expression in (18b). An illusion of individual-denoting pointing arises when the situation that is being pointed at is small enough to only contain one potential referent (e.g., a *man-sized* situation, in line with Elbourne 2013:198).

- (18)a. Hast **IHN**[\mathbb{F}] schon gsehn?
 have.you HIM already seen
 b. $[[\text{ihn}_i]]^g = \iota x[x \text{ is a man in } g(s_i) \& x=g(1)]$

As of now, I am not aware of any evidence to the end that co-speech pointing ever involves pointing at individuals; by contrast, Schlenker (2018b) argues that pointing in sign language can target individuals, situations or situation stages of individuals. We can set up a tentative empirical argument in favor of situation-pointing with co-speech gestures, which is modeled after Schlenker (2018b). First, we can establish that co-speech pointing gestures in spoken languages can mimic the establishment of *loci* (positions in signing space) in sign languages (compare Schlenker, to appear). An illustrative example is sketched in (19), where subscripted indices are associated with distinct positions in the gesturing space in front of the speaker. In this case, the pointing gestures are presumably used ‘metaphorically’, i.e., they may still trigger the inference ‘ x is at the position the speaker is pointing to’; however, this is not a real-world position, but a position in a schema.

- (19) Whenever [\mathbb{F}_1][**a baritone**] tells [\mathbb{F}_2][**another baritone**] gossip about [\mathbb{F}_3][**a third baritone**], [\mathbb{F}_2][**he**] ends up telling [\mathbb{F}_3][**him**] about it and [\mathbb{F}_1][**he**] gets into trouble.

Having established that gestural pointing can use gestural loci, (20) shows the following;¹¹ the speaker establishes a position k in gesture space, as the locus of New York. After stating that the hearer will be transferred to New York, it becomes possible to point at the New-York-locus k in connection with the pronoun *you*. As argued in Schlenker (2018b), “locative shifting” the second person pronoun in this way is not possible for individual-denoting loci in sign language, so (20) should be infelicitous if it involved pointing at individuals; this

¹¹Thanks to Philippe Schlenker (p.c.) for suggesting this example.

suggests that the gestural pointing in (20), in fact, involves pointing at situations, as proposed.

(20) Since [\mathbb{F} _{hearer}]**you** can't seem to work with [\mathbb{F} _n]**John**, I'll have you transferred to [\mathbb{F} _k]**New York**. And if later I need to downsize, I'll fire [\mathbb{F} _k]**you**.

On a related note, non-deictic pointing gestures improve in connection with covarying DPs if the pointing gesture is attached to a 'kind-denoting' referent (here: a picture of a donkey), as in (21). The pointing gesture in (21) does not serve to establish a discourse referent for *that donkey*; what it seems to convey is that the *donkey*-property is illustrated at the indicated location.

(21) *Context: there are three pictures on the table, depicting a sheep, a horse and a donkey*
Every farmer who owns a donkey_i BEATS that [\mathbb{F}]**donkey_i** (*points at donkey picture*)

A question that emerges from the discussion of situation-denoting pointing (*vs.* individual-denoting pointing) is whether pointing gestures ever truly attach to pronouns (or, more generally, DPs), or rather to larger constituents, such as the VP. This, in turn, raises questions concerning the semantic type and lexical semantics of pointing gestures; see Esipova (2019).¹² It also ties in with research such as Ebert et al. (2011) on how gestures relate to information structure and, more specifically, focus exponents. Quite generally, we face the question of where in a clause such attention-directing pointing gestures can (or must) be anchored. A reviewer points out that a treatment of pointing gestures as attention-directing devices would predict that (22a) is acceptable (contrary to fact) as long as the presupposition in (22b) is satisfied.¹³

(22) a. ?* [\mathbb{F}]**[No student]_i** believes that [\mathbb{F}]**he_i** is a genius.

b. *intended*: \rightsquigarrow For every student x , x is at the position the speaker is pointing to.

Crucially, the pointing gesture appears to be well-formed when accompanying the quantifier rather than the bound pronoun, as shown in (23a), though it is unclear whether the correct rendering of the gesture's contribution should quantify over atomic variables, (23b), or make a claim about a group, (23c) (which may be related to pointing with 'kind-denoting' reference, as in (21)). In any case, there appear to be rules for gesture anchoring that favor (23a) over (22a) regardless of its interpretation; crucially, focus does not seem to matter in this case, as the gesture placement in (23a) seems to be invariant and does not track focus stress, e.g. on *she*.

(23) a. [\mathbb{F}]**[No student]_i** believes that **he/she_i** is a genius.

(*pointing, e.g., at student dorms*)

b. *option 1*: \rightsquigarrow For every student x , x is at the position the speaker is pointing to.

c. *option 2*: \rightsquigarrow The group of all students is at the position the speaker is pointing to.

As the second component of my proposal, I follow Lücking (2018:277-278) in treating pointing as a pure "attention directing device", which does not directly identify a referent. Initial evidence for such a view stems from the fact that pointing can be systematically connected to DPs that refer on their own without any need for pointing whatsoever. This isn't only true for weak (clitic) pronouns, but also for proper names, as shown in (24).

¹²As pointed out to me by Masha Esipova (p.c.), one possible approach to many instances of co-speech pointing would be to treat them on analogy with VP-level modifiers such as appositional *over there*, which in turn may involve pointing connected to *there*. This is illustrated by (i), which is interpreted very much in parallel to examples like (24).

i. Have you already seen Peter, **over** [\mathbb{F}]**there**?

¹³Note that (22a) improves if, in line with (19), there are pointing gestures both on *no student* and on *he*, which would then serve to indicate loci in gesture space.

- (24) Hast [den [☞] Peter] schon gesehn?
 have.you the Peter already seen
 ‘Have you already seen **Peter**, who, by the way, is over there?’

As the third and final component, I argue that pointing gestures are interpreted just like any other co-speech gestures (see, in particular, Schlenker 2018a). As shown in (25a) and (25b), pointing gestures trigger a non-at-issue inference, even when the existence of a referent for an anaphoric pronoun is challenged, a typical feature of co-speech gestures. In both (25a) and (25b), the pointing gesture targets an empty part of the stage, which is the presumed position of individuals who are absent.

- (25) *We’re seated at a pop concert; we don’t know if the singer will bring special guests*
 a. If there are **special guests** who join her today, you might see **em**[☞] from here.
 ↪ If there are special guests, they will be at the location that I am pointing to.
 b. There are **no special guests** in this concert. Or can you see **em**[☞]?
 ↪ If there were special guests, they would be at the location that I am pointing to.

These non-at-issue inferences may be related to the *conditionalized presuppositions* (or *cosuppositions*) that Schlenker (2018a) assumes for iconic co-speech gestures. This connection can be strengthened by looking at examples like (26a), where the pointing gesture gives rise to the inference in (26b). In this case, *it* must be a non-exophoric anaphoric pronoun, as it is bound by the quantifier *every mole in our garden*, and there are no moles present in the utterance situation. Nevertheless, the pointing gesture can indicate the position of potential referents.

- (26) *The speaker is standing at the entrance to a large garden.*
 a. **Every mole in our garden** must realize that we can sometimes see [☞]**it**.
 (*pointing at an opening in the ground where moles have been spotted, though none is visible right now*)
 b. ↪ If we can see any mole, then we can see it at the location that I am pointing to.

5 Conclusion

In this paper, I argued that a connection between pointing gestures and referential expressions is, by and large indirect; anaphoric expressions that are exophoric can be freely accompanied by pointing, which indicates the position of the respective discourse referents. Non-anaphoric deictic expressions, which introduce a new referent, involve exactly the same meaning for the pointing gesture. In such deictic examples, contrastive focus introduces a set of alternative individuals in a given situation, and signals that the intended antecedent is not the most prominent one (i.e., it is a non-default antecedent). Pointing is merely the auxiliary attention-directing device that enables the hearer to identify the intended referent by virtue of its usual contribution. Crucially, the upshot is that, even in deictic cases, the pointing gestures only serve to pick out a situation in the external context of the utterance, and they do not introduce new discourse referents *per se*.

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