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Attentional semantics of deictic locatives

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Abstract

Since Bühler´s influential work on context-dependent, deictic expressions, much research has been devoted to the underlying concepts and cross-linguistic variation of linguistic deixis. Focussing on the semantics of deictic locatives like *here* and *there*, the present article starts with an overview of deictic theories and phenomena. It is shown that proposals which either utilize the semantic idea of abstract pointing from some reference point (origin, ground), or the pragmatic concept of joint attention, do not explain the data sufficiently. As an alternative, specific parts of Takubo´s theory of deixis are then combined with an attentional semantics according to which "selective attention" plays an essential role in cognition and for language. It is argued that deictics as description-lean terms rather express basic aspects of attentional reference to an entity of some (cognitive) domain than specific content related to pointing or anchoring. Finally, further aspects and possible extensions of the novel attentional semantics of deictics are discussed.

Keywords

Deixis, semantics, attention, deictic locatives, cognitivist semantics

THERE IS PERHAPS NO BETTER WAY TO LEARN THE ESSENTIAL NATURE OF SPEECH THAN TO REALIZE WHAT IT IS NOT AND WHAT IT DOES NOT DO

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1. Introduction

Deictic expressions like *here, those, now* (in short: "deictics") are special. This fact has never been stated more concisely than in (1) by Karl Bühler, who uses some of the very words he describes:

(1) "It is remarkable how the main point of what the logic of the ancient grammarians teaches about deictic words fits together so naturally with the teaching of modern logic. The former ['Jene' ('That (one)', fem.sg) in the original text] ascertained that deictic words do not state a [quality or] determinateness of the kind of thing […] as the naming words do, and the latter ['diese' ('this (one)', fem.sg), orig.] disputes that they are

> conceptual signs that can be given an objective definition just as simply as other words." (Bühler, 1990:118f.)

Instead of treating deictics as defective, however, he proposed to view them as constituting a "deictic field" (orig. "Zeigfeld", lit. "pointing/showing/demonstrating field"), on a par with the "naming words" of the "symbolic field". Linguistic talk of "fields" has waned since then[1], but the pointing (field) metaphor —the spatial conception even for abstract deictic phenomena— continues to be relevant for semantic theories in Bühler's tradition.[2] First, it is the prerequisite for the *deictic center* of the speech situation as being characterized by *I, now*, and the locative *here*, which together mark the origin ("origo" in Bühler's terms) of an abstract multidimensional coordinate system from which other positions can be pointed at/out. Second, it fixes the primacy and importance of the speaker incorporating the center. Third, it still promotes pointing as the core feature of deixis. Fourth, it allows to characterize the semantics of deictics relative to the origo.

Bühler's approach thus represents a unifying account of deictic expressions, generalizing over different parts of speech (pronouns, adverbs, verbs…) and deictic categories (person, place, time…). He rather distinguishes three *modes* of deixis/pointing: *deixis ad oculos* (actual, "exophoric" deixis), *anaphoric deixis* ("endophoric"), and *deixis am phantasma* ('in imagination') (see Klein, 1978, Ehlich, 2007, Fricke, 2014, for critical discussions).

In the Anglo-American literature, deictics are usually conceived of as indexical expressions that depend on context elements in the utterance situation (see Kaplan, 1989, Braun, 2017), "but are not necessarily relative to the origo" (Fricke, 2014:1805; see there for a comparison). Approaches in this tradition rather subcategorize deictic terms (cp. Kaplan's distinction of "pure indexicals" (*I, now, here*), "indexicals" (*they*), and "true demonstratives" (*this, here* [with demonstration])), excluding anaphora and deixis am phantasma.[3] This also

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[1] Also, as Klein puts it, "[w]hat the Zeigfeld exactly is, is not explained in detail by Bühler" (Klein, 1978:19, my (non-)translation).

[2] Note that the term *deixis* can be etymologically traced back to "showing" (pointing out, demonstrating). The corresponding German word *zeigen* used by Bühler, however, is ambiguous between showing/demonstrating and pointing, as noted by him. Yet he starts by comparing arm and finger gestures to a signpost in a field and states:" […] deictic words such as *here* and *there* have a similar function" (Bühler, 1990:93). Although he uses "pointing" metaphorically ("from the point of origin […] all other positions are linguistically pointed out", Bühler, 1990:122), he later notes that *some* kind of concomitant pointing gesture must exist in each case (Bühler, 1990:127). The investigation of pointing gestures and their use in multimodal communication has been a topic of more recent research (Fricke, 2014; Cooperrider, 2016).

[3] Such theories of „direct reference" do not only run into the problem of homonymy, there are also descriptive/non-direct uses of indexicals, as Nunberg (1993) points out.

leads to different usage classifications. For example, Fretheim et al. (2011) distinguish "token-reflexive" ('reference to speaker's location'), anaphoric and deictic ('reference to another location') use/functionality of *here* (but see, e.g., Recanati, 2005, Cornish, 2009, Hanks, 2011, Talmy, 2020, for integrative Bühler-like accounts).

Some regard the use of deictics as "a specific sense-perceptual activity [that] demands specific ways of organizing attention" (Ehlich, 1992:205) and investigate their communicative, addressee-oriented function, sometimes by emphasizing its roots in bodily experience (Diessel and Coventry, 2020). They highlight the establishment and maintenance of *joint attention* of speaker ("Spr") and addressee ("Adr") for deictic reference, regard *focusing the addressee's attention* as the core of deixis and investigate the role of language and (co-)gestures in such multi-modal and interactional speech situations (Fricke, 2014; Auer and Stukenbrock, 2022). And yet, deictic terms are "*symbols* (and not only signals)" (Bühler, 1990:104; his emphasis), and independent of pointing in principle: "[a]lthough the term 'deixis' is originally based on the idea of drawing attention to something by means of pointing, linguistic deixis is not limited to pointing, nor can verbal deixis be derived from pointing gestures alone" (Fricke, 2014:1818). This leads (back) to the quest for the *linguistic meaning* of deictics (especially the spatial ones in focus here), which faces several fundamental problems.

First, there is no unanimity as to the modes postulated by Bühler (a prerequisite for a unifying account). For example, Ehlich (2007) differentiates four so-called *domains* (speech, discourse, text, imagination) in which his deictic procedures of abstract pointing can be applied. He also denies anaphors a deictic function as they do not reorientate attention, but preserve it, and introduces a corresponding deictic opposition ("anadeixis"/"catadeixis") for pointing in discourse. Fricke (2014) draws a different line (between "deixis at signs" and "deixis at non-signs") by showing that there are deictic references to *imagined entities ad oculos*. In general, a number of other (e.g., recognitional) uses of deictics/indexicals/demonstratives have been collected over the years (see for example the –different– classifications in Levinson, 2006:108, and Recanati, 2005:314).

Second, there is a vast space of cross-linguistic diversity in deictic reference to elements of the basic dimensions/categories (spatial, temporal, personal, discourse-, social) cross-cutting the modes/domains (Hanks, 2011; Diessel, 1999, 2019). That is, languages may differ in the number of deictic terms used for reference in some dimension (cp. the binary English *here/there* spatial locative adverb opposition vs. ternary German *hier/da/dort*).[4] While it is already difficult to specify the scope of a single term ("here where I stand/in this house/in

[4] Not to mention even more complex term systems that code environmental features like verticality or visibility (see Hanks, 2011).

Europe/…"), things get worse with each contrasting term (Klein, 1978:30,'s "Abgrenzungs-problem" 'delimitation problem' and "Problem der deiktischen Oppositionen" 'problem of deictic oppositions', respectively). Interestingly, deictic systems are sometimes characterized by descriptive features representing binary or ternary distinctions ("proximal/distal" vs. "proximal/medial/distal"). That is, 'proximal' and 'distal' denote different ranges of distance in different systems, which rather shifts the problem than being explanatory (a paradigmatic case of Lewisian Markerese, see Lewis, 1970).

Third, there is the challenge of specifying the linguistic meaning of a single term. Even complex formal analyses (see Ehrich, 1992, for German locatives *hier, da, dort*) stick to the canonical cases that can be captured in terms of proximality/distality to the speaker or addressee. Sentences like "Let´s place cameras here, there, and there [with corresponding pointing gestures; all spatial referents in roughly in same distance from speaker and addressee]" or "Does it hurt here [pointing to body part of addressee]?" show that this does not suffice. Correspondingly, origo-based approaches are forced to introduce concepts like 'origo displacement' (Klein, 1978) or 'allocation of secondary origos' (Fricke, 2014). Semantic approaches therefore run into the difficulty of reconciling canonical and non-canonical use cases, especially when using only a single level of semantic representation.

The present paper departs radically from the presented lines of research in its implementation of deictics' semantics. It is denied here that there is any "pointing/ demonstrating" in language other than what is meant by "reference", and that the origo or its shifted positions are directly relevant for semantics. It will be argued that, despite the observed cross-linguistic variance, there are underlying principles that are explanatory for a parsimonious analysis of deictics. It is questioned whether pragmatic approaches based on superficial aspects of (joint) attention are helpful for the semantic analysis that deictics deserve. Instead, it will be assumed that *selective attention* as intrinsic aspect of cognitive functioning serves as the backbone of cognitive reference ("attentional reference", see Campbell, 1997; Ceccato, 1965; Carstensen, 2011) and that its representational elements give rise to sparse/abstract linguistic meaning descriptions of deictic terms crossing categories and uses, whose actual meaning is determined by context information. Although the interest is in locative deictics here (excluding deictic directionals and verbs as in *come hither/here*), general aspects of deixis will have to be considered.

The proposal made below is an instance of two-level semantics (Bierwisch and Lang, 1989; Lang et al., 1991; Lang and Maienborn, 2011) characterized by the distinction of a semantic level of abstract linguistic meaning and a level of conceptual knowledge, and by a systematic relationship of variable positions (parameters) on the semantic level and their context-dependent values on the conceptual level. Rather than listing different use types or

functions of a deictic word (e.g., Fretheim et al., 2011), the main concern will be finding its encompassing semantic specification embedded in an empirically grounded and theoretically founded general scheme.

2. Selective overview: the semantics of deictics

2.1 Standard models of deixis

The set of Japanese deictics can be regarded as exemplary for a compact system of linguistic deixis. It consistently uses three morphemes (*ko-, so-, a-*) in different parts of speech for the construction of a ternary deictic system, as shown in Table 1 (mainly adapted from Ebi, 2015, and Imai, 2018).[5] Overall, deictic systems may be less systematic, and vary substantially across languages (see Diessel, 2019, and Hanks, 2011 for typological aspects of linguistic deixis). There may, for example, be fewer distinctions (most obvious in the English bipartite *this/that* and *here/there*): both for the listed three-part Japanese adjective and adverb, there is only one counterpart in English and German each (*such/solch-, so*); likewise, the pronominal/adnominal distinction is conflated in these languages for the most part. Other deictic systems may be more elaborate, in which case aspects of further dimensions (visibility, horizontality/verticality) are also encoded.

Table 1: System of demonstratives in Japanese

Pronominal	kore (‘this’)	sore	are
Adnominal	kono (‘this …’)	sono	ano
Place noun	koko (‘this place’)	soko	asoko
Local	koko de (‘here’)	soko de	asoko de
Directional	kochira (‘to here’)	sochira	achira
Adjective	konna (‘such’)	sonna	anna
Adverb	kō (‚so‘)	sō	ā
Derogative personal pronoun	koitsu (‚this guy‘)	soitsu	aitsu

[5] Japanese demonstrative pronouns can only be used with non-persons (besides, there are no Japanese personal pronouns as a closed class, see Takubo, 2019). Note that while Japanese local adverbs are composed of a place noun and the locational marker *de*, the place nouns are sometimes translated as adverbs (see Diessel, 2019:478, and Imai, 2018:526f). I have added the Japanese directionals, where *kochira* corresponds to English *hither* and German *(hier)her*. Note that while “hither and thither” translates to “hin und her” in German, *hither* corresponds to *her* (this is portrayed wrongly in Diessel, 2019:482).

Formal directional/ personal pronoun	kotira (‚this way/person')	sotira	atira
Nonformal directional pronoun	katti (‚this way')	sotti	atti

The core deictic distinctions are typically described in terms of *distance/proximity of referent to speaker/addressee* (the 'territory model' according to Hasegawa, 2012, 'speaker/ addressee-anchored system' according to Levinson 2006), where the ko-, so-, a-prefixes roughly mean 'near Spr', 'near Adr', and 'neither'. Such a model is most explicitly applied to the semantics of German three-part spatial deictics by Ehrich (1990:24), who proposes the semantic distinctions given in (2) for the preferred readings of the situational uses of the spatial adverbs (see the qualification below).[6]

(2) German deictic locatives

a. *Hier* ('here', "where Spr is, but not Adr"):

$L_{Ref} \subset PROX(L_{Spr}) \,\&\, \sim PROX(L_{Spr}) \supset L_{Adr}$

b. *Da* ('there', "where A is, but not S"):

$L_{Ref} \subset PROX(L_{Adr}) \,\&\, \sim PROX(L_{Adr}) \supset L_{Spr}$

c. *Dort* ('over there', "where both are not"):

$L_{Ref} \subset DIST(L_{Spr}) \,\&\, \sim DIST(L_{Spr}) \supset L_{Adr}$

There seem to be many languages where only qualitative *distance to the speaker* is used for deictic distinctions (so-called 'distance model' or 'speaker-anchored distance system', see Hasegawa, 2012; Levinson 2006). In fact, distance seems to be the relevant parameter in languages with a bipartite system like English, while Spanish is sometimes named as having a tripartite spatial distance system with *aqui, ahi, alli* (Levinson, 2006). Interestingly, apparently "no language distinguishes more than three degrees of distance" (Hanks, 2011:328).

2.2 Problems with origo, pointing and anchoring

Some of the concepts Bühler used in his model of deixis are not without problems. It has already been mentioned that despite his insinuations made by using the concept of 'pointing (out)', Bühler clarified that while there typically have to be co-speech gestures of some kind, deictics as symbols do not point, at least not in any non-metaphorical sense. Also, the assumption of a necessary complementary pointing co-speech gesture directing attention to

[6] The locations of referent, speaker, and addressee (L_{Ref},L_{Spr},L_{Adr}) and the corresponding proximal and distal regions are represented here as sets of spatial points that can be related by set inclusion/containment.

the spatial referent may be too specific: a drowning person in stormy sea, waving her hand and crying “I’m here!”, points to the sky (if at all), but not to her position. Furthermore, there are uses of symbolic deictics (“this city”, Levinson, 2006:103, or “It´s lovely here”) that do not require nor even typically cooccur with pointing gestures. In the famous phrase (3) ascribed to Luther, the deictic is not meant in the pointing sense ‘HERE, not there’, and neither is the sentence understood as ‘Spr stands where Spr is’.

(3) “Here I stand. I cannot do otherwise” (M. Luther, Diet of Worms, 1521)

Likewise, Bühler’s introduction of a *dichotomy* of linguistic fields (deictic/symbolic)—as motivated as it is—is infelicitous in several respects. Most importantly, with deictics being symbols, there cannot be a categorical difference from the outset. Furthermore, some terms name concepts (*wisdom*, *mother* etc.), others name referents (*Peter* etc.) in the symbolic field. Naming referents or definitely describing them, however, could be regarded as linguistically pointing at them in some contexts, which would undermine the categorical contrast. Apart from the question whether additional “fields” must be assumed, it therefore makes sense to abandon the contrast, and to try to characterize deictics more flexibly, but not necessarily exhaustively, in terms of their contribution to the context-bound specification of reference (very much) and denotation (very little).

As to the relevance of pointing for semantics, imagine mankind at the verge of inventing language (use). Our ancestors certainly possessed a vast repertoire of sounds and gestures for communication, amongst them pointing gestures. As co-pointing speech elements, deictics did not need to be more specific than required (i.e., without elaborate descriptive content), especially in communications essential for survival (e.g., “*there*, shoot”, “take *that* and run”). Rather, they had to be only as specific as needed for the clarification of an ambiguous pointing gesture.[7] Because of that, deictics are the information-lean expressions they are, just specifying base categories (ontology, number, gender, boundedness according to Diessel, 2019:481) apart from deictic distinctions. Consequently, pointing (gestures) may be regarded as the *cause* or typical *concomitant* of linguistic deixis (Bangerter, 2004), and evidently, “speakers organize these two tools in tight coordination with each other” (Cooperrider, 2016:654). Yet while a speaker may even have an intention to point (compare Kaplan’s assumption of “demonstrative intentions”), pointing is not part of deictics´ semantics (linguistic meaning).

[7] Consider pointing to the breast of a male person. This can “mean” ‘you’, ‘he’, ‘this one’, ‘that’ (the shirt), ‘this place/there’ (on the shirt), ‘a bleeding wound’ etc.

In Bühler´s classic center-of-coordinate system metaphor, the origo is defined as the speaker-anchored I-here-now deictic center (Bühler, 1990:117). Even with an abstract sense of origo and pointing, there are at least three problems associated with such a view. First, this is in direct conflict with the territory model of deictic distinctions, where deictics can also be anchored in the addressee. Second, at least for *here*, Bühler's view is inconsistent with respect to the term's referent's *being (at)* the origo and being *pointed out from* the origo in the deictic field + pointing model, which has led to some discussion in the literature (see the following section). Third, while there can be transposed/projected senses of "where the speaker is" in *deixis am phantasma*, there are uses of *here* that are definitely not meant in this sense ("does it hurt HERE?" uttered by the doctor pointing to his/her or to the patient´s (!) chest). This raises the question what an origo is, how it can be transposed, and why terms are sometimes interchangeable. For example, in the same latter situation the query could also be "does it hurt THERE?". As to cross-linguistic variation, a Google search for English translations of Goethe's famous "Da['there'] steh ich nun, ich armer Tor" (from "Faust") only returns results with "here".

2.3 Conceptions of origo and origo displacement

Based on a thorough investigation of multimodal deixis (i.e., deictics and pointing gestures), Fricke (2014) presents a modified Bühler model, focusing on the reconciliation of prototypical uses of *hier* ("where the speaker is") with other situational uses (*deixis (of imagined entities, as signs) ad oculos*, *deixis am phantasma*). At the center of her interest are non-prototypical examples like '*hier*+pointing' cases ("sit here!", "does it hurt here?") or "you are here" map-like cases with or without pointing. Given that *hier* is semantically analyzed as [+origo-inclusive] in origo-relative approaches as discussed in Fricke (2005), *hier* with co-speech pointing could be an example of origo-exclusive use of an origo-inclusive deictic expression on the level of the language system. Or *hier* could be an origo-inclusive deictic on the level of language use, with the co-speech pointing gesture displacing the deictic origo. According to Fricke, however, both interpretations lead to contradictions.

As an alternative, she offers a more complex system of multimodal deixis that is rooted in an abstract and therefore more flexible conception of "origo" (contra the specific/actual "I-here-now" deictic center). She distinguishes between a single primary origo and possibly many secondary origos. While the primary, abstract origo is held by the speaker, "secondary origos can be instantiated by perceptible and imaginary entities, which are interpretable either as signs or non-signs" (Fricke, 2014:1813). Also, different verbal and gestural origos may be allocated at the same time. Such intentional allocation of secondary origos then guarantees the stability of the [+origo-inclusive] feature and coordinates the communicated information in both modalities. Moreover, it allows to sustain the view of the *deictic relation* between the

indexical ground and the deictic object (see Figure 1 depicting the "relational structure of referential deixis" of Hanks, 2011:319) as abstract pointing from some origo to the referent.

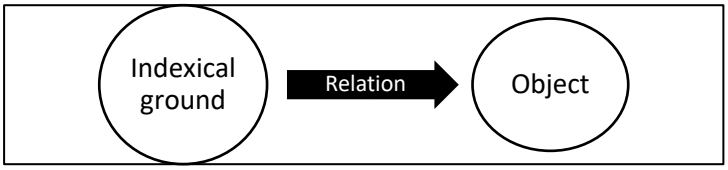

Figure 1: Deictic relation

However, with the level of complexity the enhanced Bühler model has attained, the question arises what that means for the specification of deictics´ semantics overall (left unanswered by Fricke), and whether there might be a more general, parsimonious approach.

2.4 Beyond standard models: Takubo´s proposal

The standard models and their straightforward applicability have been questioned in various respects, again best exemplified with Japanese. For example, Akira Mikami (cited in Hasegawa, 2012) proposed a third, "Double binary", model constituted by *ko-* vs. *so-* and *ko-* vs. *a-* contrasts. This is motivated by many corresponding binary Japanese coordinations (e.g., *are-kore* 'this and that', *achira-kochira* 'here and there', *soko-koko* 'here and there'), while there are no *a-+so-* combinations. Not only is this assumption declined by Hasegawa (2012) and Takubo (2020), but German also offers a directly contradicting example: *da und dort* ('there and over there') is perfect (like *hier und da* and *hier und dort*), although it is hard to pinpoint the contexts of applicability.

However, there is clear evidence that the distance and territory models somehow *both* exist in Japanese: in situations where speaker and addressee face in the same direction, medial and distal deictics seem to describe the distance to the referent, measured roughly from both. Diachronically, on the other hand, Japanese deictics have evolved from a single binary (not even spatial) system. As Hirata (2017) shows, *ko-* encoding visible locations contrasted only with *so-*, which marked non-visible locations but had also anaphoric, discourse deictic and recognitional uses. Even with the addition of the *a-* terms to the Japanese deictic system, visibility and anaphoricity still turn out to be relevant aspects for linguistic analyses. Based on the discussion of other proposals (though mostly with nominal examples), Takubo argues that a simple deictic/anaphoric use distinction cannot be maintained, because visible use of *so-* is not sufficiently captured, and because non-visible use of deictics is not necessarily anaphoric. Moreover, in non-visible situations the *a-* terms are used where both speaker and addressee have direct, experiential knowledge of the referent while use of "medial" *so-* is restricted to

(only) conceptual knowledge of the referent. Such construal of familiarity with *distal a-* is what Hasegawa (2012:54) finds "perplexing".

To account for this, Takubo (2020) proposes a different system that combines territory and distance aspects, but is rather a "binary specific contrast + unspecific term" system according to Takubo's characterization (Takubo, 2020:723) given in (4).

(4) [+D,+PROX]: *ko*-NPs
[+D, –PROX]: *a*-NPs
[-D]: *so*-NPs

'+D' marks "independent reference" of the term, which means that the referent is specified binarily with respect to either proximality or distality (in actual perception or in familiarity), where "proximality is a cognitive notion that may vary depending on how the cognitive agent perceives the object in assessing its distance" (Takubo, 2020:722). This leaves *so-* as the weak, unspecific term without independent reference in the tripartite system, that is, as the "last resort" (Takubo, 2020:728) in visible use[8], or as an anaphor in non-visible use. Takubo himself generalized his [D] feature: "Instead of defining [+ or −D] in terms of requiring or not requiring an antecedent, we propose to characterize D as 'having or not having independent reference'" (Takubo, 2020:723). As this blurs the notion 'independent reference', however, I will rather refer to 'specificity' as a given aspect of cognitive representation of actual or remembered, situational, experiential reference (see below for details), and will call his proposal the "specific pair (of contrast)+unspecific term" ("SPUT") model.[9]

This model may have more general relevance. For the allegedly distance-oriented Spanish, Maldonado writes "[i]t has been claimed that Spanish has a system based on person with a three-way organization […], like Japanese" (Maldonado, 2020:57) effectively characterizing the territory model, but concludes "[the pronoun] *[e]se/a*, like the locative *ahí*, represents a flexible area of common access for speaker and hearer, which overlaps with distal and proximate forms." (Maldonado, 2020:69**)**. Not only does Spanish therefore correspond to

[8] Takubo presents an elaborate justification for his model. The essential point here is that *so-* can only be used if the referent is near to the addressee *but not to* the speaker (else it must be *ko-*, despite proximality to the addressee).

[9] A reviewer points to other uses and different senses of "specificity" (e.g., Gärdenfors and Brala-Vukanović, 2018; von Heusinger, 2002). Actually, von Heusinger´s analysis of *certain* in "a certain N" as contributing given specificity is apparently related to mine. However, his interest is in the contrast to (in)definiteness, not to unspecificity. Furthermore, an investigation of senses of "specificity" in linguistics is clearly interesting, but out of the scope of this article.

Takubo´s SPUT model, but it also has two additional terms (*acá* and *allá*) that also represent only a binary contrast (proximal/distal).

In her analysis of the German tripartite *hier/da/dort* system of locative adverbs, Ehrich comes to similar conclusions. She correctly characterizes *da* as not being restricted to the addressee, but rather to some y identified in the context (see Ehrich, 1992:43) as shown in (5) ("LOC(x)" corresponding to L_x). More specifically, she distinguishes between the *strong* semantic contrast of *hier/dort* and the *weak* semantic contrasts of *hier/da* and *da/dort*. Formally (and as an implementation of Takubo's "last resort" interpretation), she proposes to treat the weak contrast terms as Horn scales <*dort, da*> and <*hier, da*> that can be exploited by the hearer with the *Generalized Conversational Implicature*: use of the weak term of a scale then *conversationally implies* the non-applicability of the strong term in each case.[10]

(5) Da ('there'): $\lambda x\ [LOC(x) \subseteq PROX(L_y)]$

As to anaphors, Ehrich also assumes a special role of the weak term for German: "*Da* is the only non-situational German spatial anaphor" (Ehrich, 1992:26; my transl.), where "situational" corresponds to "specific". Like Takubo and Hasegawa, she recognizes the weak term as only option for the use as a bound variable, best exemplified by Tolkien's (6). In addition to that, she notices that this is also the case for the "sloppy identity"-use, where the anaphor is not co-referential, as in (7).[11]

(6) In einem Loch im Boden, da lebte ein Hobbit
'In a hole in the ground there lived a hobbit'

(7) Bilbo pflanzt Bohnen in seinem Garten, und Frodo pflanzt *hier/da/*dort Blumen
'Bilbo plants beans in his garden, and Frodo plants flowers *here/there/*over there [i.e., in Frodos garden]'

[10] The generality of this analysis might be questioned, however. A striking example can be found in *The hare and the hedgehog*, one of Grimms' fairy tales. While in the original Low German version the hedgehogs say "Ick bünn all hier" ('I am already *here*'), it is "Ich bin schon da" ('I am already *there*') in the Standard High German version of Bechstein (1971:280-285; http://www.zeno.org/nid/20004533755) even at that time. Use of *da* can definitely not be interpreted as implying 'not here' in this case. It might therefore be necessary to distinguish between a "last resort" and a presentative use of *da* (with the latter use even being the basic one).

[11] I will leave out her discussion of so-called "E-type" local proforms. They have a quantified antecedent but are not bound by the quantor. Yet in this case, both *da* and *dort* are acceptable according to Ehrich (see ibid., 30ff).

In general, recent cross-linguistic fieldwork seems to corroborate the SPUT model. As Levinson writes: “there are grounds to be suspicious of reports of ‘medial’ terms – that is to say, systems with a three-way distance contrast” (Levinson, 2018:24).

2.5 Joint attention

Increasing evidence in cognitive science shows that our linguistic and non-linguistic behavior is based on or heavily influenced by a close coupling of speaker´s and addressee´s perception and action (mirror neurons, joint attention) and more general representations of shared and mutual knowledge (common ground, theory of mind). This is most evident in language acquisition where the ability to establish *joint attention* when referring to an object (i.e., directing or following the communication partner´s gaze) has been found to be an important step in language development (Tomasello, 1995). Auer and Stukenbrock (2022) apply these insights for linguistic spatial deixis by stating that “[i]n deictic spatial reference, the frame of reference on the basis of which joint attention is established is the origo (deictic center)” (Auer and Stukenbrock, 2022:24), assuming that reference is essentially a triadic relation of joint attention. Diessel is most explicit in this respect by stating: “In their basic use, [deictics/demonstratives] serve to coordinate the interlocutors’ joint focus of attention” (Diessel, 2006:464).

This argumentation, however, seems to confuse the fundamental role of joint attention for *learning what it means to successfully refer* in early childhood (the matching of intended and identified object in each case)[12] and as a *default principle and goal of face-to-face communication*, with *necessity* in actual discourse or as a semantic condition/feature. Otherwise, text messages (“Burn this after reading”) with absent writer/speaker, or telephone conversations without the possibility of shared perception (“It´s nice here”) would be nonfunctional, unless the notion ‘joint attention’ were weakened accordingly (which would blur the notion). Interestingly, it has been argued (Küntay and Özyürek, 2006) that the use of the Turkish medial deictic term *şu* requires initial *absence* of addressee´s attention to be directed to the referent. Hirata (2017), on the contrary, argues that Japanese *so-* has a ‘*presence* of addressee´s attention’-meaning (my emphasis).

The alternative is to acknowledge the role of joint attention for language learning and as pragmatic ideal case in communicative reference, while denying the *necessity* of joint attention for the semantics of deictics. Speaker and hearer, knowing what it means to refer

[12] Even the general relevance for word learning has been questioned, however: “Typically developing children can learn words without being directly addressed, much less being explicitly engaged in conventional joint attention” (Akhtar and Gernsbacher, 2007:204).

based on their acquired theories of mind, would then rely on the inferential abilities of the other in non-prototypical situations (that is, providing just a sufficiently complex description given the common ground, on the one hand, and exploiting all information for inferring the intended referent on the other hand). In Fuchs' words: "What an interlocutor needs for adequate interpretation of the deictics goes far beyond knowledge of literal utterance time and place. Much inferential activity is needed." (Fuchs, 1992:6).

2.6 Two-level semantics

There are various versions of "cognitive" semantics, especially those originating in the works of Bierwisch, Fillmore, Jackendoff, Langacker, Lakoff, and Talmy (see also the general overview of spatial semantics in Carstensen, 2015). They share the general idea that language is not only a cognitive phenomenon but also relates to the world only indirectly, through perceptuo-motoric interaction and via conceptual processes and representations. This includes the conception of semantics as a bidirectional mapping onto mentally represented sceneries in some format (imagery, spatial or conceptual structures). As part of a cognitive architecture, semantics is sometimes understood as the whole mapping, sometimes only as the narrow interface of linguistic and non-linguistic information. In the latter case, rather than being conceived as only providing pointers into conceptual content for a linguistic item, this interface may be viewed as a separate level whose elements "frame" the content for the item of a certain language (as *give* and *get/take* do for a scenery of exchange). Let me demonstrate some points of such a "two-level semantics" (Lang and Maienborn, 2011) relevant for the purposes of this paper with a classical example.

Consider the dimensional adjective *wide* and its German counterparts *weit(/eng)* (designating internal extents of objects like holes) and *breit(/schmal)* (designating a certain external extent of objects like streets or pictures). It is immediately obvious that pointers to concepts (like WIDE, WEIT, BREIT) are not helpful due to such more or less subtle cross-linguistic differences (see Goddard, 1997, for a corroborating analysis with *come* and *go*, contra Wierzbicka's Natural Language Metalanguage consisting of a restricted set of universal primes). Instead, semantic elements reflecting these differences should be "grounded" in cognitive representations (see Bierwisch, 2011, on recent views of primes). What is required for a semantic entry of a word, therefore, is the specification of its content's range given in *maximally general, but distinctive* semantic form.

In his classic paper, Bierwisch (1967) tried to provide such forms for the set of dimensional adjectives in the then popular format of (binary) semantic features (e.g., "[+lateral]" for *breit/schmal*). It turned out (with elaborate justifications given in Bierwisch and Lang, 1989) that this is not possible in principle. In general, dimensional designation depends both on the

spatial gestalt schema of an object´s type, and on the actual contextual positioning and perspectivation (see Lang et al., 1991, for a systematic computation of such variation). Compare, for example, the "width" of landscape posters and streets: it is the longest extent for the former, but never for the latter. Also, the "length" of a brick turns into a "height" when placed upright on a table. Laterality, in particular, is *relative* ("a dimensional extent e' that is orthogonal to some other extent e") and must be represented accordingly. Instead of features, elements of the semantic level must therefore be concise linguistically determined context-invariant coarse descriptions of linguistic meaning to be systematically distinguished from non-linguistic information-rich conceptual content. Not being mere uninterpreted labels, they also have to be a subset of the elements of conceptual structure. The hallmark of the two-level semantics developed by Bierwisch and Lang (1989), then, is devising semantics as the systematic interplay of semantic level parameters and conceptual level values.

2.7 Levelling approaches to spatial deictics

These latter two-level requirements should apply to all deictics accordingly. As for the Bühler model, this is roughly the case, but only metaphorically. That is, it presents a unique spatial plane in which distance distinctions can be made, and abstracts both from modes and categories as well as from contextually specified values in that multidimensional system. However, by comparing non-spatial entities spatially, it rather resembles an impossible Escher figure than a valid scientific explanation.

Correspondingly, the ample use of spatial distinctions in theories of deixis must be considered problematic from the outset. And again, using "proximal" and "distal" both in binary or ternary systems leads inevitably to ambiguity and unclear meaning of the primes. As to the binary contrast, Diessel and Coventry (2020) discuss the hypothesis that it might be rooted in the distinction between peripersonal and extrapersonal space represented in the mind. While this is certainly plausible for prototypical situations ("take that there and bring it here"), it does not apply to many others ("it hurts here and also there [twice pointing to own body]"). Given this lack of clarity, (quasi-)objectivist specifications based on these distinctions (see (2)) should be reassessed and replaced.

The use of semantic features is still common in semantic theories of deixis. Takubo (2020), for example, assumes [+PROX] and [-PROX] on the semantic level, and that they are mapped to the conceptual values *proximal* and *distal*, respectively. Regarding non-prototypical uses he remarks "whether an object is to be considered proximal or distal, being cognitive in nature, depends partly on the subjective choice of the cognitive agent" (Takubo, 2020:720). Hence, not only does Takubo distinguish different formats, but his conceptual values are also

subjective (i.e., somehow arbitrary distinctions). Both aspects undermine a clear specification of the semantic distinction.

Unlike Ehrich, who applies distance contrasts to different source objects (as do territory models in general), Bühler models often work with the features [+/-origo-including], which complicates matters: "As the distal demonstratives are always origo-excluding, the distinction between *hier* 'here' in [some previous examples] and *da/dort* 'there' is properly speaking not one of distance (proximal vs. distal), but one between origo-including and origo-excluding uses of the adverb" (Auer and Stukenbrock, 2022:38). Unfortunately, there is probably no unanimity with respect to what an origo exactly is, how it can be modelled, and how this figures in a semantic form. This holds true especially for recent descriptive, pragmatic approaches to deixis favoring a one-level semantics. Note that 'origo' could well be a paradigm case of a semantic parameter/variable that gets instantiated by a certain source in some context (as with L_y in (5)), albeit in a space-based approach.

Like Takubo, some authors, however, "reject the a priori primacy of space, and substitute for it something closer to accessibility, that is, how the participants have or gain access to the object" (Hanks, 2011:320). This is motivated by cases in which a deictic term does not seem to be applicable according to its typical range. In an investigation of Bosnian/Croatian/Serbian deictics (those languages having a territory system) in comics, Fulir and Raecke (2002:169) present a picture where an individual clearly points to an object near the addressee but uses the proximal term. An even more striking example is given by Takubo (2020:721): For a situation in which a speaker is "[p]ointing to a tall tree 20 meters away standing all by itself in a large field" *both* the distal and proximal (*a-/ko-*) Japanese terms can be used. However, he states that *ko-* is much less acceptable if the tree is surrounded by many others. He also reports that for an Independence-Day-UFO filling the entire sky (yet dozens of kilometers away) *ko-* (but not *a-*) terms can be used. Besides accessibility, Cooperrider (2016) names *control* and *deictic force* as further candidates for a non-spatial, subjective parameter yet-to-be-investigated (see Peeters et al., 2014, for a more differentiated account). In specific psycholinguistic experiments with prototypical settings, Peeters and Özyürek (2016) distinguish the proximal linguistic term from the distal one by the former´s referring to an object in a psychologically shared space (via joint attention).

3. From spatial relations to spatial locative deictics: the attentional approach

In general, spatial deictics like *here* and *there* are locatives (i.e., answer the (implicit) question "Where is x?"). As such, they characterize the place of an entity, either predicatively ("Your iPhone is here") or attributively ("The iPhone here looks nice"). Other locatives do this by expressing a certain spatial relation to another –reference– object (a vertical one in *above,*

below, over, under, a proximal one in *at, near, by* etc.). Carstensen (2015) argues that conceptual spatial relations must not be grounded in naïve, objectivist representations of space, using set inclusion of spatial points, as in (2), nor in cognitive holistic elements like image schemata. He shows that they should rather be based on representations of *selective attention* and its changes in the spatial domain.

"Selective attention" refers to the process of sequentially addressing pieces of the information-rich perceptual input and relaying it for further (higher) processing (see Carrasco, 2011, for an overview of the most-studied field of visual selective attention), which is only one of at least three different neuropsychological mechanisms of attention (beside regulating alertness and directing/orienting the locus of attention, see Petersen and Posner, 2012). It is a necessary ingredient of effective information processing, as documented by examples of impairment (e.g., neglect phenomena) or distraction (inattentional blindness), see Rensink (2013). It is also a prerequisite for language, as talking about the world is impossible without cognitive attentional selection of the referents involved. Therefore, selective attention is different from, and only indirectly related to higher-level notions of joint attention, focused attention, attention state, focality, or focus typically used in linguistics. While in behavioral cases of "joint attention" or "directing someone´s attention to something" probably all neuropsychological mechanisms are involved, the selective aspect is the one required for non-objectivist cognitive representations of the world (Carstensen, 2011) and also for theories of reference (Campbell, 1997) in general, and (linguistic) cognitive spatial relations in particular (Logan, 1995; Carstensen, 2007, 2013, 2015).

Figure 2 (adapted from Carstensen, 2015:106) schematically displays the attentional core of spatial relations representing successive selective attention to two distinct elements (located object and reference object as arguments of spatial prepositions) within a spatio-temporally restricted frame of cognitive processing. While there are two possible (directions of) attentional changes symbolized by the arrows, only one of them is relevant for a certain linguistic relation. Direction is one of several parameters involved in conceptually categorizing these changes, whose different instantiations sub-classify these relations and correspondingly explain (cross-)linguistic variance of spatial expressions, as spelled out in Carstensen (2015).

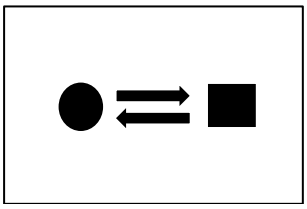

Figure 2: Spatial attentional relations

According to this view, spatial relations are *necessarily* binary, mainly because they can be qualified by a distance expression (*close, very far*), which requires a certain linear extent for measurement—even if the reference object sometimes is non-overt and remains implicit (as in "don´t stay too far behind", "deep below in the sea").[13] Stripped of all descriptive information, the attentional relations in Figure 2 evidently display the bare aspect of reference ("attentional reference") to space in the sense expressed by Landau: "It is at least tempting to think that the kinds of spatial relationships whose construction requires either visual routines, or focused attention, might provide candidate primitive spatial relationships from which language could draw" (Landau 2019:348). In more general terms, such attention-based reference can be seen as realizing the relation "between the mental structure encoding the linguistic expression and the language user's *conceptualization* of the world – all inside the mind" (Jackendoff, 2019:88, his emphasis).

Although the schematic picture of attentional relations in Figure 2 could be taken as a kindred variant of the deictic relation in Figure 1, differing only marginally in presentation, both are in fact incomparable. Whereas attentional relations are representations of actual shifts of attentional engagement in some cognitive domain, deictic relations are pseudo-cognitive objectivist abstractions of speakers pointing to objects. Correspondingly, the former typically provide a spatial extent to be measured ("near by", "10ms high above", with some exceptions discussed in Carstensen, 2015), which is impossible for the latter (*"50cms here", *"some meters there"). Given the previous argumentation, the relevance of the deictic relation for the semantics of spatial deixis must therefore be rejected because pointing (even in abstract form) is irrelevant, the concept 'origo' (or, the hypothesized indexical ground) is unclear[14], the distance concepts are unfounded, and the relation itself is explanatorily dubious.

Furthermore, proposals based on selective attention are not directly comparable to joint/directed attention approaches: while attentional relations only reflect perception-based cognitive processing of the speaker, joint attention involves higher-level assumptions about what the addressee is looking at or attending to (corresponding to the notion of *cognitive status* concisely described by Gundel: "Cognitive status involves assumptions that a cooperative speaker can reasonably make regarding the addressee's knowledge and attention state in the context in which an expression is used", Gundel et al., 1993:290).

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[13] Correspondingly, this is also at variance with those who postulate ternary/triadic relations to capture the deictic/extrinsic interpretations for the semantics of projective prepositions (*in front of, behind* etc.).

[14] „There are several reasons that it is challenging to actually demonstrate these different values for the indexical ground. Detailed observation of ordinary usage is requisite, and most of the published literature simply fails to provide the necessary evidence" (Hanks, 2011:332).

The fact that both locative prepositions and adverbs share the argument of the referent to be located suggests that in the semantics of deictic locatives, there must necessarily be one attended entity, but due to the lack of a reference object, not more than one. Because of that, deictics should be modelled as unary relations (i.e., as predicates). Given that the absence of descriptive aspects is characteristic, even definitory, for deictics, and with proximity/distality concepts disavowed and excluded, there is obviously manifest need for new semantic criteria.

Two considerations are helpful for their identification. First, a single attentional relation is characterized by the fact that it represents the *immediacy* of first attending to one element followed by attending to the other (in some time frame on some level of processing in some domain), thus representing *(micro-)succession*, not merely association. Second, the binary contrast of the SPUT model is characterized by an asymmetry: for every specific *there*, there must be a *here*, but not vice versa. This is at the heart of the acceptability differences in "It´s nice here/#there" for 'nice where the speaker is' ('#' marks communicative inadequacy). Interestingly, while there is some leeway for the use of the *unspecific* term, the *proximal specific* deictics have a wide range of use, too (which made the assumption of origo shifts and allocations necessary). Altogether, then, attentional relations always have a *primary* and a *secondary* element, and the same is true for the specific deictic contrast.

The proposal sketched here is to regard primary deictics as linguistically coding/representing primary attentional elements (but without a secondary one), and secondary deictics as linguistically coding/representing secondary attentional elements (but without an explicit primary one). For the specific term pairs, this implies an important difference (shown schematically in Figure 3 and Figure 4): while primary deictics merely involve singular reference within the corresponding specific frame, secondary deictics *presuppose* (but do not assert/express; hence the grey coloring) a change from the primary referent. As to specificity of reference, it is well known that there are gradients from specific to abstract representation in the cortex, e.g., one ranging from the occipital to the frontotemporal areas for visual information (Margulies et al., 2016). Therefore, categorical situational specificity is assumed here to be represented accordingly, which is reflected in the solid lines of the frames. Likewise, there are various known pathways for projecting different types of information, and convergence zones that correspond to semantic types/domains of some granularity (Kemmerer, 2010). "Spatial" in the figures marks attentional reference in the corresponding domain.

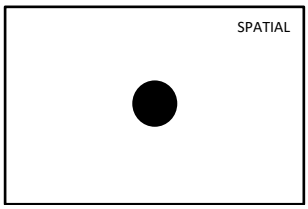

Figure 3: Primary specific spatial attentional reference

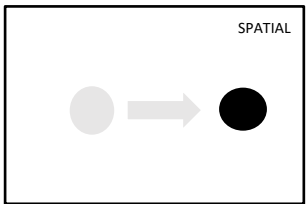

Figure 4: Secondary specific spatial attentional reference

Formally, the semantics of these term types expressing specific attentional reference to space can provisionally be specified as in (8) and (9). Both types are characterized as predicates of attention to the argument x (but note the referential variable s), where attentional selection is conceived as a cognitive micro-state s qualified by domain and specificity information. They differ in that the secondary term type involves a change from a state s', which is marked as presuppositional by underlining.[15]

(8) Primary spatial deictic term
λx [att(s,x) & spatial(s) & spec(s)]

(9) Secondary spatial deictic term
λx [att(s,x) & spatial(s) & spec(s) & change(s',s)]

As to the seemingly simpler weak term of a ternary system, its typical use appears to represent a fallback, "last resort" option and involves pragmatic, higher-level reasoning. Especially in non-aligned cases where the referent is near to the addressee, use of the primary term would be misleading (suggesting closeness to the speaker), as would be use of the secondary term (where the addressee might ignore his/her vicinity). Hence the apparent addressee-anchored use of the weak term. In situations with aligned perspectives, use of the term is based solely on distance aspects (non-choice of specific terms due to medium distance).

For several reasons, such a characterization of the weak term is misleading, however. In Japanese, the weak term apparently had an independent meaning in medieval times (see

[15] Things are actually much more complex. For example, it must be ensured that s' denotes a corresponding previous attentional state to a referent of that domain. Also, s and s' must be characterized as being in the same micro-temporal frame. I doubt that such logically necessary aspects have been sufficiently investigated (see Poeppel, 2004), therefore I simply assume here that this can be added correspondingly.

above). Then there are uses of the weak term where the allegedly medial term definitely has proximal meaning: at least in standard German, when coming home or reaching a goal, one has to use *da* ("ich bin da/#hier!" 'I am there/#here', see also the above hedgehog example). Also, there is the use as a variable with no meaning at all. Finally, at least German small children typically use the weak term *da* as single independent deictic (probably because parents usually point non-contrastively to non-proximal salient objects) and only later learn the specific contrasts (see also Clark, 1978).

Taken together, the locative weak term should be primarily characterized by non-specified specificity. The corresponding semantic entry for unspecific attentional engagement to a referent is shown schematically in Figure 5, where non-specificity is indicated by a dashed line of the frame. Formally, the entry is identical to (8), except for the omitted 'spec'-predicate.

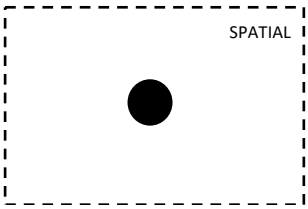

Figure 5: Unspecific spatial attentional reference

This view (called "attentional SPUT", or "ASPUT", approach) rests upon the assumption that linguistic deixis is basically the mere expression of attentional selection (~attentional direct reference) of a referent in some domain, given the lack of descriptive aspects. Using attentional aspects in semantic specifications, the two-level semantic approach allows to do without the notions of the Bühler model or the deictic relation as its abstraction, replacing the notoriously unclear origo with the primary element focused, ruled-out pointing with attentional reference, and the hard-to-specify proximal/distal contrast with the structural primary/secondary distinction. Linguistic deictic categorization is therefore straightforward: For specifically conceptualized referents, either there has been a change to it in the current frame (marking it as the secondary, "distal"), or it is the primary, "proximal" one. For non-specifically conceptualized referents, the weak term is selected correspondingly.

In such a two-level attentional conception of linguistic deixis, both the deictic-relation-as-selective-attention and the referent can be established in the modes of imagination or actual perception, and many aspects and alleged problems of deictic reference can be explained by contextual specification and variation on the conceptual level. For example, *here* as primary deictic can be used to signify a place near the speaker, in some distance from the speaker (Takubo´s examples), on the speaker or addressee, on a map, or of a linguistic spatial description ("… in Rome. Here…"). Likewise, the scope of the corresponding region varies with the type of the referent to be located and the conception of the speaker. This will continue to

be a problem for the hearer in interpreting deictics (Klein, 1978,'s *Raumproblem* 'space problem'), and therefore in delimiting regions of contrasting terms (Klein, 1978,'s *Abgrenzungsproblem* 'delimitation problem'), but none of semantics (as regions are not explicitly referred to).

In general, such attentional direct reference is certainly influenced by several "subjective" factors like salience, relevance, and ease of accessibility, without anyone of these having a semantic role. This view provides a solution to some riddles of deixis discussed in Fretheim et al. (2011). For example, the authors distinguish between deictic (~pointing, see (10)) and token-reflexive (~non-pointing, see (11)) functions of *here*. For (10), they assume a 'speaker-activation constraint' that requires anaphoric deictic *here* to be uttered by the same person. In contrast to that, they explain the acceptability of the proximal anaphor in (11) with its token-reflexivity. For the variance of the anaphors in (12), they refer to the speaker´s vantage point, salience of the place in question, and the speaker´s referential concern for it as relevant factors. Finally, the variation of adverbs in (13) is analyzed as differential *psychological proximity* so that in each case, the "destination occupies a privileged place in their minds" (Fretheim et al., 2011:286).[16] Thus, while the authors offer a number of agreeable explanations for distinctions of deictics´ uses, they do not present a concise set of semantic features for deictic distinctions.

(10) Doctor: Does it hurt here?
Patient: Yes, there/#here [no touching/pointing of patient].

(11) A: Do you like it here?
B: Yes, I like it here/#there.

(12) Fred arrived in Montreal. His parents had long been awaiting him here.
Fred went to Montreal. He had to attend a business meeting there.

(13) We´re here/there. [to a sleeping friend in the bus, arriving at the goal]

In the attentional approach, factors and influences are regarded as conceptual-level phenomena determining the semantic-level primary/secondary choice, which gives rise to different explanations for the examples. In (10), the place of the pain referenced by the doctor, primary for him/her because of salience or relevance, is so small that the patient has to change his focus of attention to it (making it secondary). According to Fretheim et al.´s cross-linguistic comparison, only the patient´s touching the spot would make it primary for him/her in most

[16] In my intuition, choice is even dependent on emotions at least in German. For "Sie sind hier/da" 'They´re here/there', the proximal term would typically be used for intruders, the medial for guests.

languages.[17] This is different in (11), where reference is primary for both A and B, due to the bigger spatial scope of the liking-situation (this corresponds to token-reflexivity and origo-inclusivity in other models). Both (12) and (13) show that although subtle subjective aspects influence the relevance of the spatial referent (determining its semantic status), the same scheme applies. This is even more different to the Bühlerian models, which assume non-subtle distinctions in (12) due to hypothesized shifts of origo or allocations of secondary origos for the use of *here*. The ASPUT approach rather dispenses with 'origo' as concept relevant for theories of deixis: while the (Bühlerian) multimodal egocentric self-model of the speaker certainly functions as a conceptual origo determining primary choice, the abstract origo needed in theories of deixis simply corresponds to semantic primary attentional reference.

4. Discussion

The foregoing argumentation for the ASPUT model has been deliberately based on languages as different as Japanese and, e.g., German. For various reasons, however, it cannot yet be taken as a *general* model of linguistic deixis. First and foremost, given the enormous cross-linguistic diversity of spatial expressions in general, and of linguistic deixis in particular, it seems to be futile and even wrong to assume simple semantic *universals* of deixis in language. As Levinson concludes in his overview of selected recent field work, "current typologies of demonstratives are inadequate, and we are far from being able to formulate tight 'universals' of demonstratives" (Levinson, 2018:34). Rather than supporting counts of terms or distinctions for comparisons of deictic systems, he presents a set of semantic parameters beyond anchoring and distance from whom languages may select certain values. The present approach agrees with such a view of individual languages' semantic specifications of a general semantic scheme, and with the procedure of identifying parameters and their instantiation´s variation (see also Carstensen, 2013, 2015). With its abstract parameters of attentional reference, it may come closer to the universally applicable model of deixis Bühler had in mind, however.

Applicability of the ASPUT model (and its "fitting" to the data) is *hard to judge* in principle (see the overview of the vast crosslinguistic variation in deixis in Fortis and Fagard, 2010). This is especially true for the four- or more term deictic systems mentioned in Hanks (2011), Diessel (2019) and Levinson (2006, 2018). Unfortunately, Japanese deixis research shows that it may need a native speaker with long-term experience in the field, in-depth analyses and

[17] This cognition-based principle may be overruled in some languages by linguistic echoing principles, as seems to be the case in Slavic languages (Fretheim et al., 2011:275), where the proximal term would be acceptable. General evidence for such echoing can be found in the fact that the question "Where you´re at?" 'How do you do?' can be answered by "Yeah, where you´re at." in southern regions of the United States of America.

comparisons of all use types of deictics, considerations of diachronic developments, and openness to new interpretations of the data, to arrive at a sufficiently adequate theory. This contrasts with the limited interactions in current field work (or experiments), whose interpretations are potentially affected by misunderstandings, incomplete data, and biased assumptions. Accordingly, it would be necessary to test whether the deictic system of a language satisfies the assumptions of the ASPUT model (despite, and possibly against, its current typological classification), whether the model has to be adapted, or whether the system is genuinely different and not compatible with the model at all.

It is also possible that the ASPUT model is *not complete*, in the sense that it lacks a necessary parameter. This actually seems to be the case regarding the prominent distinction between attention on the *global and local level* of processing made in Carstensen (2011), which has been shown to be essential for semantics and cognitivist ontology (see also Carstensen, 2019). In deixis, such a distinction might be found in variations of the indexical ground, i.e., in the contrast between 'Spr'/'Adr' vs. 'Spr+Adr' (see Hanks, 2011:332). For example, Diessel (2019:479) discusses Hausa with its four-term system *nân* (near speaker), *nan* (near hearer), *cân* (away from speaker and hearer), and *can* (far away from speaker and hearer). He proposes "two different ways of conceptualizing the deictic center" according to which the proximal terms are relative to the *speaker* as origo (~local level) whereas the distal terms are relative to "the common domain of the speech participants" (~global level). In an extended ASPUT approach, *nân* and *nan* would figure as the local-level primary and secondary terms, and *cân* and *can* as the corresponding global-level ones, respectively.

According to Hanks, the language Bisaya "marks a six-way distinction between Distal and Proximal relative to three distinct origos: Spr, Adr and Spr+Adr" (Hanks, 2011:332). It therefore does *not seem to be compatible* with the ASPUT model at all (note also the missing weak term). For such cases, it might be interesting to consider the implicit use of spatial relations in the semantics of such deictic terms. As Carstensen (2015) shows, the typical division of topological and projective relations correlates with the proximal/distal distinction (see, e.g., *near by/*away, close to/*from, *near/far above*) and can be modelled as so-called *reference-polarity* of the relation (in short: its direction, determined by the order of the attended elements). Bisaya-like deictics could then be modelled as attentional reference to an argument of a *presupposed* spatial relation (where the other argument is one of the origos/anchors), as in the simplified (14). Given the range of different deictic use types discussed here, this analysis would likewise necessitate a thorough evaluation of the data and their interpretation (options), however.

(14) Hypothetical deictic semantics analogous to spatial relations

a. λx [att(s,x) & att(s', Spr/Adr/Spr+Adr) & change(s',s)] (distal)
b. λx [att(s,x) & att(s', Spr/Adr/Spr+Adr) & change(s,s')] (proximal)

Whether and how context elements like Spr and Adr figure in semantics leads back to the basic questions of what linguistic deixis is, how deictics and anaphora are to be distinguished, and what this tells us about the semantics of deictics. Recall that Bühler defined deictics as non-naming expressions (including, for example, pronominal anaphora), corresponding to Kaplan´s indexicals as context-dependent linguistic elements. Others treat deictics as demonstratives with (implicit) associated pointing, factually a subset of indexicals. For Kaplan, reference to Spr and Adr (*I, you*) is non-deictic (although classification of a term in principle is use-dependent in his scheme, see the uses of *here* in Fretheim et al., 2011).[18]

The line between deixis and anaphora is drawn differently, if at all (see Cornish, 2009, for a scalar, non-categorical conception of indexicality terms). Most distinguish corresponding modes, procedures or use types of terms referring to context elements. However, not every use fits one of these types (see the token-reflexive use of *here* in (3)). Rather than trying to draw a clear line between deixis and anaphora, it therefore seems more appropriate to treat them as *linguistic prototype concepts* (Hampton, 2006), which instead of clear definitions covering all uses only have more or less representative members (sometimes even unclear membership). Despite the intimate relationship of deixis and anaphora, this diversification of use types is of little help for the semantics of deictics, however.

The ASPUT approach does not define deixis in terms of either non-naming (Bühler), demonstrating intentions (Kaplan), or orientation of attention (Ehlich), but as description-lean expressions for attentional reference in some domain, *typically, but not necessarily, cooccurring* with demonstrating intentions and reorientation of attention. It draws a clear line between deixis and anaphora, but on the level of language use. For unspecific terms, this means that they can be used in both ways, best exemplified with anaphoric/medial Japanese *so-*. The same is true for pronouns like *he/she/it*, which are prototypical anaphora but can be used deictically ("He/She's the one"). Conversely, specific terms are assumed to be always

[18] This could be questioned with the following anecdotal example. In the famous epic *Game of Thrones*, the Unsullied, a warrior caste, are raised to become relentless fighters, which includes depriving them of their sense of individuality (for example, by letting them choose arbitrary, temporary names for themselves). Their leader, when referring to himself, always says "this one" instead of "I". Having the same functionality (direct reference to Spr by Spr), these expressions would according to Kaplan be either categorized differently, or "this one" would be non-deictic (see Borghi and Penco, 2018, on the demonstrative origins of indexicals). Both analyses are unsatisfactory.

used deictically, despite apparent actual co-referentiality. This holds for *here* and *now* (primary specific reference), but also for *I* and *you* (specific reference to Spr and Adr).

Overall, the ASPUT approach offers both the basic ingredients of, and an abstract model for, typical deictic reference. There might, for example, be languages with only one context-dependent term in each dimension (compare the grade expression *so* in English/German), which would leave the deictic/anaphor distinction as a conceptual choice, and the primary/secondary distinction obsolete. Yet most languages, as a matter of fact, are built to systematically express *contrasts in direct reference* with closed-class terms, which is reflected in their deictic system.[19] For this, the coarse semantic parameters of the ASPUT model can be used, as in Japanese or German spatial deixis. They involve two central aspects: first the distinction of specific and unspecific terms (with the unspecific term typically having a range of different functionalities); second the attentional primary/secondary distinction (which allows to capture deictic contrasts without recourse to distance distinctions). It will be interesting to see whether potential semantic adaptations/specifications necessary for other languages (e.g., explicit anchoring to Spr and Adr) are still covered by some version of the model.

5. Conclusion

Bühler´s spatial metaphor of pointing from an origo to the referent as a model for linguistic deixis was highly influential in the field of (spatial) deixis and is still praised for its integrative account of highly diverse deictic phenomena with vast cross-linguistic variation. However, his model has in part been specialized (to only involve intended demonstrations), generalized (to a context-dependent relation between some ground and the referent), extended (with concepts of origo shifts/projections/transpositions and multiple origos) and differentiated or modified (e.g., with respect to other/further modes/use types) to account for the data. It has also been criticized for its spatial core, in not respecting aspects of communicative interaction (joint focused attention) or subjective deictic distinctions (e.g., of accessibility). In this article, it was further shown that none of its ingredients (origo, pointing, anchoring, distance distinctions) are explanatory or essential for the semantics of deictic expressions.

A comparison of Japanese and some European languages revealed that despite the apparently ternary deictic systems, Takubo´s semantic proposal of a binary system involving a specific pair of contrast (SP) plus an unspecific term (UT) seems to account for a good portion of the deictic and anaphoric use cases, although it still involves problematic assumptions (use

[19] Compare, however, Japanese, where contrasts in direct personal reference are *deliberately not* conventionally expressed with such terms.

of the proximal/distal distinction, different formats for semantic and conceptual aspects). In the following, the SPUT ideas were combined with the cognitivist, attentional approach of Carstensen (2011, 2015). Selective attention as a basic cognitive mechanism was shown to be as relevant for deictics as it is for spatial relation expressions, with singular attentional reference replacing pointing or the deictic relation in general. According to that stance, deictics are characterized negatively by the lack of descriptive content rather than by some distinctive aspect (pointing, joint focus), and the semantics of deictic locatives is basically a one-place predication of spatial attentional reference (where use of the deictic is typically accompanied by gestures that direct the attention of the addressee). The semantic contrast of the attentional SPUT (ASPUT) approach was defined via primary or secondary attentional selection of a specific referent in a temporal frame (eschewing distance characterizations relative to origo or anchor). The primary/secondary distinction supports two-level semantics by showing that semantics plays a language-specific role and abstracts from certain distinctions (e.g., between real and imagined reference), but does not differ in format from conceptual-level representations. Finally, some further aspects of ASPUT were discussed, all relating to the open question whether ASPUT is a model of linguistic deixis, or just a (core) set of assumptions that may not apply to all languages.

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