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Towards a dialogic syntax

Abstract: This paper argues for the need to recognize a new order of syntactic phenomena, and for a theory of syntax capable of addressing it. Dialogic syntax encompasses the linguistic, cognitive, and interactional processes involved when speakers selectively reproduce aspects of prior utterances, and when recipients recognize the resulting parallelisms and draw inferences from them. Its most visible reflex occurs when one speaker constructs an utterance based on the immediately co-present utterance of a dialogic partner. Words, structures, and other linguistic resources invoked by the first speaker are selectively reproduced by the second. The alignment of utterances yields a pairing of patterns at varying levels of abstraction, ranging from identity of words and affixes, to parallelism of syntactic structures, to equivalence of grammatical categories and abstract features of form, meaning, and function. This mapping generates dialogic resonance, defined as the catalytic activation of affinities across utterances. The key unit of analysis is the diagraph, recognized as a higher-order, supra-sentential syntactic structure that emerges from the structural coupling of two or more utterances. Dialogic syntax goes beyond traditional linear syntax to recognize as integral to the task of syntactic analysis a new kind of structural relation that arises between otherwise independent sentences.

Keywords: dialogic syntax, resonance, parallelism, structure-mapping, structure-coupling, priming, analogy, diagraph, dialogicality, prior text

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1 What is dialogic syntax?

It takes language to make language. The patterns that define language emerge from the interaction of particulars, as one utterance follows another, reproducing its pattern in part. The resulting parallelism invites a perception of pairing, generating something new in the event: a specific resonance of forms and meanings. This is the phenomenon of dialogic syntax. It finds its most concrete embodiment

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in the actual words and structures produced – and reproduced – by conversational co-participants. Syntax is deployed in parallel structures, inviting a mapping from one utterance to another. Utterances so linked may be immediately adjacent or displaced across time, within or across interlocutors' turns. The resonance that arises between parallel utterances defines a matrix of relational affinities, triggering analogies which generate an increment of inferred significance in the moment. As one utterance is juxtaposed to another, the structural coupling that results creates a new, higher-order linguistic structure. Within this structure, the coupled components recontextualize each other, generating new affordances for meaning.

Viewed from the perspective of a dialogic syntax, the structural organization of language serves not only to communicate or to reason, but to engage. In the dynamic environment where utterance meets utterance, the situated use of language is canonically dialogic, embodying the speaker's active engagement with the words of those who have spoken before (Bakhtin 1981 [1934]; Becker 1995; Linell 2009; Voloshinov 1973 [1929]). It is in the dialogic environment that grammar connects, functions, adapts, reproduces, and evolves (Du Bois, 2014; MacWhinney, 1999). To understand the relation between language, cognition, and use, dialogic syntax explores the dynamics of structural coupling (De Jaegher et al. 2010; Fuchs and De Jaegher 2009; Stephens et al. 2010; Varela et al. 1991) between utterances in communicative interaction. In structural terms, the theory of dialogic syntax looks at how grammar organizes mappings between utterances, offering an analytical framework for representing the linguistic structure of engagement. In functional terms, it looks at how the dynamic emergence of structural resonance in discourse serves the communicative, cognitive, and collaborative goals of its users.

The most visible reflex of dialogic syntax occurs when one speaker constructs an utterance based on the immediately co-present utterance of a dialogic partner. Words, structures, and other linguistic resources invoked by the first speaker are selectively reproduced by the second. This strategy can be applied whether the second speaker's meaning is parallel, opposed, or even orthogonal to that of the first (Du Bois 2007). The alignment of utterances yields a pairing of patterns at varying levels of abstraction, ranging from identity of words and affixes, to parallelism of syntactic structures, to equivalence of grammatical categories and abstract features of form, meaning, and function. This mapping generates dialogic resonance, defined as the catalytic activation of affinities across utterances. Affinities – both similarities and differences – link the paired utterances along multiple dimensions of linguistic form and meaning. The activation of affinities exploits the full potential of the linguistic system to assign value to novel analogies between paired words and structures.

The following exchange provides an illustration. Joanne turns to her husband and says (having just made a critical remark about her mother):¹

(1) (*Deadly Diseases* SBC015: 870.750–874.220)

1 JOANNE; (H) It's kind of like ^you Ken.

2 (0.8)

3 KEN; That's not at ^all like me Joanne.

One's first impression is that the two interlocutors are saying almost the same thing, with the sole difference being that the second utterance negates the assertion expressed in the first. But closer inspection reveals just two points of overt

¹ The examples in this paper, unless otherwise noted, are taken from the Santa Barbara Corpus of Spoken American English (Du Bois et al. 2000–2005), available for free download at <http://www.linguistics.ucsb.edu/research/santa-barbara-corpus>. Excerpts are cited using a standard format: discourse segment title (in italics), segment ID, start time, end time (in seconds).

The transcription symbols and conventions used in this paper follow the system known as “Discourse Transcription” (Du Bois et al. 1993), as updated to the current (“DT2”) version (Du Bois 2013); see also <http://www.linguistics.ucsb.edu/projects/transcription/representing>. All examples have been retranscribed by the author, adding prosodic information such as primary accents and pause timings, and checking and revising intonation unit boundaries. The examples have been slightly simplified for clarity and simplicity of presentation; for example, by leaving out overlap brackets when the overlapping utterance is not included in the excerpt, as well as some details of prosody. The symbol conventions used in this paper are given below.

Symbol	Meaning	Description
<u>LINE</u>	intonation unit	one new line for each intonation unit
JOANNE;	speaker attribution	semicolon follows name written in CAPS
(1.2)	pause, timed	pause duration in seconds (>0.15 sec.)
.	final intonation	canonically: low fall in pitch
,	continuing intonation	slight rise, slight fall, or level pitch
?	appeal intonation	canonically: high plateau plus final rise
¿	appeal onset	beginning of recognizable appeal contour
—	truncated intonation unit	intonation unit abandoned before completion
–	truncated word	word is abandoned: audible cut-off, false start
[]	simultaneous speech	brackets mark start and end of overlap
[₂]	simultaneous speech (2nd set)	disambiguates from other nearby overlaps
^	primary accent	prosodic prominence, nuclear accent
(H)	in-breath	audible inhalation
(Hx)	out-breath	audible exhalation
@	laugh	one symbol for each pulse of laughter
@okay	laughing words	laughing while speaking
<@> </@>	laughing words	laughing while speaking (alternate notation)
###	unintelligible word	one symbol per unintelligible syllable
#okay	uncertain hearing	transcribed words are uncertain

morphological identity linking the two utterances: the adverb *like* and the reduced copula 's. Still, the perception of parallelism is strong. Reformatting the transcription to display a two-dimensional alignment in rows and columns helps to selectively highlight the parallelism:

(2)

1 JOANNE; it 's kind of like ^you Ken .
3 KEN; that 's not at ^all like me Joanne .

This is a representation of what I call a diagraph (Du Bois 2007: 160–161). A diagraph is a structure that emerges from the mapping of resonance relations between counterpart structures across parallel utterances produced in dialogic juxtaposition. Strictly speaking, the term diagraph refers to the emergent structure created by language users. Thus the diagraph is a kind of graph (Edelman, 2008; Gross and Yellen 1999; Solan et al. 2005) made from language, constructed dynamically by participants in real time. Informally, the term is sometimes used to refer to the analyst's representation of this structure, as in (2). (The nature of the diagraph will be examined further in §3.3.)

In this diagraph, the dialogic resonance between utterances builds on parallels between participants' selection of pronouns (*it* : *that*, *you* : *me*), proper names (*Ken* : *Joanne*), and adverbial modifiers (*kind of* : *not at all*), in addition to the morphologically identical matches (*like* : *like*, 's' : 's').² Meaning enters into the equation via co-reference: *you* and *me* refer to the same referent ('Ken'), and similarly for the co-reference of *it* and *that*. The two proper names, though distinct in reference, are linked through their common pragmatic function as vocative terms of address. At the phrasal level there are parallels in the copular predicative construction (*X is Y*), in adverbial phrases, and so on. Prosody also provides an important source of structural parallels. Each of the utterances that participates in this parallelism corresponds to a single intonation unit (Chafe 1994). (In this transcription system, each line of the transcription represents a single intonation unit (Du Bois 2013).) The parallelism of intonation unit structure brings out further affinities, including prosodic similarities (e.g. in the use of final intonation) as well as differences (e.g. in the placement of primary accent).

Even with all these parallels in syntactic and prosodic form, the interlocutors in (2) manage to express diametrically opposed meanings. Obviously the intro-

² In diagraphs, words containing contractions (*it's*, *I'm*, *don't*, *won't*) are written as two separate words (*it 's*, *I 'm*, *do n't*, *wo n't*), to facilitate the vertical alignment of resonating units. A similar practice has been adopted for independent reasons in representations of syntactic structure in standard treebank corpora (Marcus et al. 1993: 317, fn. 318).

duction of negation by the second speaker differentiates his meaning from his partner's, but this is only one way among many to frame distinct meanings in parallel form. Dialogic syntax is not about mimicry, repetition, or agreement, but engagement – and engagement may serve equally to concur or to contest. When Ken utters the word *Joanne*, his use of a proper name in vocative function would appear at first glance to precisely parallel Joanne's prior utterance of the word *Ken*. But even though the two vocatives occur in equivalent structural positions in their respective sentences, their pragmatic force differs dramatically. Joanne's utterance of *Ken* is needed to specify the addressee (since this conversation includes a third participant, who though present is silent during this exchange). But in Ken's utterance of *Joanne* there is no comparable requirement for him to clarify who his utterance is addressed to, given that it represents a direct response to an utterance that she has addressed to him. The immediate reuse of a vocative in final position exploits the potential for parallelism, evoking resonance. Such resonance may serve any number of functions. Here vocative *Joanne* takes cover as tit for tat, while actually dripping with irony (Giora 2003; Haiman 1998). Thus, parallelism frames difference as well as similarity. It may seem paradoxical that divergence from another's meaning is most readily expressed by adopting the other's words and structures. But formal collaboration and pragmatic subversion go hand in hand so often that we can only conclude they feed off each other.

Dialogic syntax is inherently interdisciplinary, drawing on a range of theoretical resources from linguistics, psychology, cognitive science, literary theory, anthropology, sociology, communication, philosophy, and more. Of the seminal ideas that have been foundational for dialogic syntax, four pillars stand out: parallelism, analogy, priming, and dialogicality.

Parallelism plays a key role in dialogic syntax, serving to articulate local, ad hoc mappings between dialogically juxtaposed pairings of internally structured utterances. It is at once fluid in its application and systematic in its consequences. Language users dynamically construct new structural relationships between linguistic elements by placing them in parallel environments, thereby inviting the perception of affinity between the corresponding items. The study of parallelism has a long and rich history in linguistics and related fields (Blanche-Benveniste 1990; Harris 1952a, 1952b, 1991; Jakobson 1966; Lowth 1815 [1753]: 258–267; Norman 1980; Rubin 1995; Silverstein 1984). Related concepts include repetition (Johnstone 1994; Keenan 1977; Tannen 1987), variation sets (Küntay and Slobin 1996; Onnis et al. 2008), format tying (Goodwin 1990), and cohesion (Halliday and Hasan 1976).

Analogy builds on structural parallelism but goes a step further by developing its consequences for meaning and form. Its special importance for dialogic syntax is twofold. First, analogy works bottom-up, building structural and

functional equations between linguistic units on a peer-to-peer basis. Based on malleable perceptions of similarity between entities at the same ontological level, analogical processes can be triggered without recourse to top-down rules. Second, analogic processes yield a broad range of impacts on inference, interpretation, reanalysis, creativity, and grammaticization, ultimately contributing to the self-organization of new linguistic structure. Long recognized as a critical factor in language change and grammatical emergence (Anttila 1977, 2003; Blevins and Blevins 2009; Itkonen 2005), analogy demonstrably reflects general cognitive capacities (Gentner 1983; Gentner et al. 2001; Gentner and Markman 1997; Medina et al. 1993). From a functional perspective, analogy offers an essential bridge between language and cognition (Gentner and Christie 2010; Gentner and Medina 1997).

Priming sets the stage for dialogic syntax by creating cognitive conditions that facilitate the selective reproduction of recently used linguistic forms and structures. Lexical and structural priming jointly contribute to a critical phase of enhanced activation, catalyzing further processes that make up the resonance cycle (priming – reproduction – resonance). While priming increases the probability of reproduction, and hence of resonance, these processes are distinct, and none is reducible to the others. (The complex cyclical interaction between priming, reproduction, and resonance is beyond the scope of this paper; for some initial observations, see Du Bois et al., this issue.) Research relevant to dialogic syntax includes both lexical priming (Cutler 2012; Hoey 2012; Neely 1991) and structural priming (Bock 1986; Bock and Griffin 2000; Branigan et al. 2000; Garrod and Pickering 2004; Giora 2003; Gries 2005; Hare and Goldberg 2000; Levelt and Kelter 1982; Pickering and Ferreira 2008; Weiner and Labov 1983).

Dialogicality concerns the processes that link the emerging utterance to a horizon of shared prior texts, which define a network of potential associations within a community of discourse. Any new utterance thus takes its place in a discursive field already richly inhabited by the words and voices of others, which may be more or less distant in time and space. Dialogicality is at once retrospective and prospective, evoking interpretive links to prior utterances while creating new affordances for meaning in the next utterance. Originating in the seminal writings of Bakhtin (1981 [1934]) and Voloshinov, (1973 [1929], 2010) on literature and philosophy, dialogicality has since extended its influence to linguistics, psychology, anthropology, and related fields (Attinasi and Friedrich 1995; Becker 1995; Du Bois 2007, 2009, 2011; Friedrich 1997; Günthner 1999; Günthner et al. 2014; Kotthoff 2000; Linell 2009; Plett 1991; Tedlock and Mannheim 1995; Wertsch 1998). Related concepts include common ground (Brennan and Clark 1996; Clark 1996), accommodation (Giles et al. 1991), co-construction (Lerner 1996), and distributed cognition (Hutchins 1995).

Dialogic syntax already has a brief history of its own, building on earlier versions of the present work. Dialogic syntax has been applied in studies of stance (Du Bois 2007; Haddington 2006, 2007; Kärkkäinen 2006; Laury, 2012; Nir et al. 2014; Sakita 2013); parallelism (Sakita, 2006, 2008); syntactic complementation (Köymen and Kyratzis 2014; Laury 2012; Maschler and Nir 2014); adversarial talk in family arguments (Maschler and Nir, this issue), parliamentary debates (Zima 2013b, Zima et al. 2010; Zima et al. 2009), and monastic debates (Lempert 2008); child language (Clancy 2009; Köymen and Kyratzis, this issue); resonance in autism (Du Bois et al., this issue; Hobson et al. 2012); dialogic gesture in instructional interaction (Arnold 2012); storytelling in conversation (Siromaa 2012); ritual discourse (Du Bois 2009, 2011); and non-literal uses of language including irony (Giora et al., this issue), play (Takanashi 2011), and joking (Oropeza-Escobar 2011), as well as in theoretical explorations of the relation of dialogic syntax to construction grammar (Brône and Zima, this issue) and cognitive grammar (Zima 2013a). Languages studied include Japanese (Sakita 2006, 2008, 2013; Takanashi 2011), German (Brône and Zima, this issue; Zima 2013b; Zima et al. 2010), French (Zima et al. 2009), Spanish (Oropeza-Escobar 2011), Finnish (Laury 2012), Hebrew (Giora et al., this issue; Maschler and Nir, this issue; Nir et al. 2014), Tibetan (Lempert 2008), and English (in several of the articles listed above).³

Having introduced the basic picture of dialogic syntax, I now undertake a more detailed presentation of the fundamentals of the theory. My presentation is resolutely qualitative, reflecting the importance in scientific inquiry of conceptual clarification (Itkonen 2003; Mayr 1982). (For some initial observations from a quantitative perspective, see Du Bois et al., this issue; Hobson et al. 2012.) In the next section, I propose four reasons to study dialogic syntax (§2). I then present the basic concepts of the theory, including parallelism, resonance, diagraphs, and more (§3). Section §4 looks at how dialogic syntax builds “real abstractions” out of the juxtaposition of specific utterance tokens. Next I address the burning question of whether dialogic syntax should be considered syntax at all (§5). I conclude (§6) with a look at directions for future research, and an assessment of what is to be gained from a dialogic syntax.

2 Why a dialogic syntax?

Structural recurrence is empirically observable in naturally occurring discourse (Harris, 1952a, 1952b). Still, the question remains as to what to make of this fact.

³ See also (Anward 2003, 2005; Ariel 2008; Edelman 2009; Joaquin 2005).

Does the presence of syntactic parallelism carry any deeper implications for what language users are doing when they make syntactic decisions in using language, or for what they know about the grammar of their language? Does it change how a linguist should go about describing the system of grammar itself? Dialogic syntax encompasses the linguistic, cognitive, and interactional processes involved when speakers selectively reproduce aspects of prior utterances, and when recipients recognize the resulting parallelisms and draw inferences from them. But why should this seemingly specialized phenomenon be of general interest? Dialogic syntax offers an opportunity to reimagine syntax as a dynamic and interactive practice, in order to gain new insights about language, cognition, and function. Here I present just four among many motivations – some familiar, and some less so – for working towards a dialogic syntax.

First, dialogic syntax has consequences for meaning. When one speaker's words are arrayed in parallel to the words of another, a resonance is created between the two utterances, generating a level of formal engagement. Structural parallels invite functional inferences, influencing the situated interpretation of both utterances (Ariel 2008; Fauconnier 1997; Gentner 2003; Gentner and Christie 2010). While the influence of contextual effects on meaning has long been recognized, dialogic syntax goes beyond generalized appeals to "context" to articulate a specific method for identifying the precise shape of the relevant discourse environment. Through close attention to detailed mappings between otherwise independent syntactic structures (e.g. separate sentences), dialogic syntax provides a common framework for analyzing both inter-sentential and intra-sentential resonances. The key unit of analysis is the diagraph (§3.3), a unit which has gone largely unrecognized, remaining invisible to standard methods of syntactic, semantic, and pragmatic investigation. The theory of dialogic syntax, in contrast, invests the diagraph with broad theoretical scope and significance. The diagraph is recognized as a higher-order structural unit, with implications for syntactic structure, pragmatic meaning, and cognitive processing. By theorizing a new order of structural relations, dialogic syntax is well positioned to show how the process of mapping between two internally structured utterances can systematically impact the structure and meaning of each.

Second, dialogic syntax brings vast new territories of spoken language phenomena into effective range of direct description and efficient theorization. Normative monologic grammar tends to leave the complexities of naturally occurring spoken (and other informal) language use outside the scope of inquiry, fit for analysis only after the data are cleansed of variation, disfluencies, and other inconveniences. In contrast, dialogic syntax handles all such phenomena directly, without needing to clean up the data before analyzing it. It is robust enough to operate without partitioning the attested evidence of language use into the (nor-

matively) acceptable versus the supposedly unacceptable. Rather than invoking the prescriptive dichotomy of grammatical vs. ungrammatical – which shields a fragile grammar incapable of handling the full scope of language use – dialogic syntax embraces the realities of spoken language on its own terms. The dialogic approach extends the reach and robustness of syntax, recognizing a higher-order construction that encompasses sequences of multiple parallel but independent sentences, even across more than one interlocutor. Viewed from the dialogic perspective, the entire scope of spoken, signed, and spontaneous language use becomes amenable to direct description and interpretation within a unified theory of grammar.

Third, dialogic syntax introduces new evidence for the psychological reality of linguistic structure. Dialogic syntax can potentially provide support for many of the consensus analyses of modern structural linguistics, including abstract structures and theoretical constructs from phonology to morphology to syntax and beyond. This may seem surprising, given that dialogic syntax is grounded in the concrete particularities of naturally occurring language use, and is theoretically driven by a cognitive-functional perspective on grammar (Du Bois 2003, 2014) and interaction (Du Bois 2007). But it is hard to overlook the fact that early results from dialogic syntax uncover evidence that may validate selected claims about abstract linguistic structures. Even in the heat of conversation, participants seem to respond to the challenges of a dynamically shifting utterance environment by invoking abstract categories and structures, adapted in real time to construct engagement with the partner's utterances. This is not to say that structural analyses are indiscriminately confirmed *en masse* by dialogic syntax – far from it. Rather, dialogic syntax may serve to distinguish between competing analyses, casting doubt on some while supporting others as viable. The linguistic analyses that gain support from dialogic syntax tend to coincide, it seems, with those toward which the various traditional syntactic theories have tended to converge.

Fourth, dialogic syntax creates a rich environment for what we may call dialogic bootstrapping. Dialogic bootstrapping is a powerful strategy for learning language by exploiting the affordances of dialogic resonance. Evidence from adult conversation suggests that, in the process of dialogic engagement, participants naturally produce parallelisms, paradigms, and other patterns in discourse with implications for linguistic structure. Whether intentionally or not, in acting for their own reasons in response to the local exigencies of real-time interaction, co-participants collaboratively enact a dialogic process that yields highly suggestive sequences of resonating utterances. Dialogic resonance offers affordances (Du Bois, in progress; Gibson 1979), which implicitly invite the perception of structural and functional analogies, supporting recognition of the linguistic categories and abstractions they presuppose. Moreover, dialogic engagement tends

to concentrate resonance within a short time span, just the few seconds it takes to respond to a prior utterance. This allows the necessary cognitive operations to take place within the scope of the language learner's working memory. Enriched by the affordances of locally implicated mappings, the dialogic moment yields a combinatorial explosion of information about the structure of the language at hand. For young children (Küntay and Slobin 1996), or indeed for learners of any age, a dialogic bootstrapping strategy can facilitate the targeted learning of patterns rendered locally salient, which emerge grammaticized as linguistic categories, structures, and rules.

The following example illustrates the relevance of dialogic syntax to these issues. (In this conversation, Joanne and Lenore have been talking about a mutual acquaintance who is a recovering alcoholic.)

(3) (*Deadly Diseases* SBC015: 703.380–708.860)

- 1 JOANNE; yet he's still ^healthy.
- 2 He reminds me [of my ^brother].
- 3 LENORE; [He's still walking] ^around,
- 4 I don't know how ^healthy he is.

Following Joanne's utterance in line 1 (*yet he's still healthy*), Lenore in line 3 begins almost identically (*he's still*), but in place of the single word *healthy* she substitutes the phrase *walking around*. The mapping relation is made clear in the following diagram representation:

(4)

- 1 JOANNE; yet he 's still ^healthy .
- 3 LENORE; he 's still walking ^around ,

Out of context, the phrase *walking around* might be taken as relating to other verb particles (*around : back : over*), as in *walking around : walking back : walking over*; or to other verbs, as in *walking around : running around : joking around*. But in this dialogic context, the second speaker's substitution of verbal *walking around* for the first speaker's adjectival *healthy* invites the inference that it is an alternative to *healthy*. Through dialogic juxtaposition, an otherwise obscure grammatical equivalence (adjective : verb) is made salient, and the equation *healthy : walking around* is implicated. Resonance carries analogical affordances, facilitating the perception of the second alternative as categorically equivalent to the first. This equivalence is available not just to analysts, but to participants. Moreover, for any child who might be listening, such resonance represents a rich opportunity for dialogic bootstrapping. Resonance affords learning, not only of the func-

tional equivalence immediately at hand, but of the linguistic abstraction needed to make sense of it (i.e. that adjective and verb may be interchangeable as predicates).

Turning from grammar to meaning, *walking around* seems to have little in common semantically with being *healthy*, at least from the perspective of a decontextualized, dictionary-based assessment of their lexical semantics. But in context, parallelism affords a perception of the two words as analogous (though not necessarily identical). Placed in a position of structural alignment, *healthy* and *walking around* are understood to be in a relation of contrast or opposition (in the Prague School sense, reinterpreted dynamically). The dynamic opposition invites a situated interpretation of *healthy* and *walking around* as two contrasting values on an ad hoc scale of health. Thus *walking around* dialogically implicates less than full health. The analogical inference is invoked: What is parallel in form is likely parallel in meaning. Dialogic syntax thus recruits the general cognitive processes of structure-mapping (Gentner 1983), similarity (Medin et al. 1993), and analogy (Gentner 2003; Gentner and Christie 2010; Gentner and Markman 1997). Yet in most cases of dialogic resonance, the precise nature of the meaning to be inferred remains implicit. Either similarity or difference, for example, may be inferred from a given resonance. It may become necessary to operate at a higher level of abstraction (e.g. degrees of health) to recognize the relevant functional analogy. In sum: Dialogic syntax articulates formal relevance, and thereby implicates functional equivalence.

Taking stock, this brief example illustrates each of the four aspects of dialogic syntax introduced above:

- (1) **Real abstractions.** The phrasal verb *walking around* is mapped to the adjective *healthy* in a local, ad hoc equation that establishes their abstract equivalence as predicates.
- (2) **Consequences for pragmatic meaning.** The situated interpretation of *walking around*, when framed in relation to *healthy*, represents a point along a scale of degrees of health; it conveys a skeptical ‘not necessarily healthy’ interpretation as an ad hoc scalar implicature.
- (3) **Dialogic bootstrapping.** Attending to local mappings of dialogic resonances and the analogies they imply affords the child an enriched environment for learning new structural and functional equivalences.
- (4) **Spoken language constructions.** Dialogic syntax recognizes multi-sentential constructions extending across the utterances of multiple interlocutors. Such higher-order constructions are realized in the diagraph, which is necessary to account for the various linguistic consequences noted above, influencing structure (1), meaning (2), and learning (3).

But is this enough to motivate a dialogic syntax? True, language users produce utterances that resonate with prior utterances, with consequences for meaning and grammar. But they don't do it all the time. Dialogic resonance is optional; it represents a common but not constant feature of language use. Nevertheless, it remains important for what it can tell us about the possibilities. In reframing basic functional questions about how grammar works, dialogic syntax opens up a broad panorama of new perspectives on language. There are many reasons to study dialogic syntax, but the four just illustrated should be enough to prime the pump. The four criteria can also serve as a rough metric by which to judge the success of dialogic syntax as theory and analysis. In the end, though, only one question is needed to motivate our inquiry. Why do language users create dialogic syntax? In other words: What's in it for the users? This question must remain front and center in working towards a dialogic syntax.

3 Basic concepts

In this section I introduce the key analytical tools and concepts that define the theory of dialogic syntax. Dialogic syntax addresses a network of interrelated phenomena, including parallelism, resonance, reproduction, diagraphs, analogy, and more. The inherent complexity of dialogic syntax means that most naturally occurring instances simultaneously exhibit more than one such factor. Thus, an example cited to illustrate parallelism is likely to contain resonance, and vice versa. In the following discussion, each concept is illustrated with an example drawn from naturally occurring language use, mostly from conversations in the Santa Barbara Corpus of Spoken American English (Du Bois et al. 2000–2005).

3.1 Parallelism

Parallelism articulates a mapping between pairs of dialogically juxtaposed utterances, evoking perceptions of similarity between their corresponding components. The mapping is facilitated by parallels in the internal structure of each utterance, contributing to the recognition of analogical affinities between matching elements. Though it can be difficult to define, parallelism is often easy to recognize. Parallelism shows up most clearly when there is a contrast between one pair of utterances with a relatively high degree of structural similarity, and another pair with a comparatively low degree. Such a contrast is on display in the next example. (On a long-distance call with her boyfriend, Jill has dramatic news to tell him.)

(5) (*Hey Cutie Pie* SBC028: 70.075–80.730)

- 1 JILL; You ^missed like all the ^drama here.
 2 (H)
 3 JEFF; ^No drama.
 4 JILL; ^Yeah,
 5 there was ^such ^drama.
 6 There was ^drama,
 7 and there was ^suspense.
 8 (H) And then there was ^relief,
 9 (H) and then there was ^ecstasy.

If we look at just the first three lines, the parallelism seems relatively limited:

(6)

- 1 JILL; you ^missed like all the ^drama here .
 3 JEFF; ^no drama .

Jeff reuses the word *drama*, preceding it with the quantifier *no*, which contrasts with Jill's *all*. The combination of similarity and contrast creates a double pairing (*all* : *no*, *drama* : *drama*) which can indeed be considered syntactic parallelism. But its impact is modest compared with what comes next:

(7)

- 5 JILL; there was ^such ^drama .
 6 JILL; there was ^drama ,
 7 JILL; and there was ^suspense .
 8 JILL; and then there was ^relief ,
 9 JILL; and then there was ^ecstasy .

Jill reproduces the phrase *there was* five times, prefaced three times with *and* and twice with *then*. She uses this existential construction to frame a succession of four nouns – *drama* (twice), *suspense*, *relief*, and *ecstasy*. The framing elements are high frequency, monosyllabic function words (*and then there was*), while the focal elements are polysyllabic, lower frequency, high entropy, more informative content words (*drama*, *suspense*, *relief*, *ecstasy*). The four content words seem to reveal some conceptual affinity, a perception which is no doubt heightened by their placement in the same slot in a structural frame or schema (Harris 1946). Where the parallelism in (6) involves just two columns of resonance, the last pair of lines in (7) involves five columns. What makes parallelism parallel is the presence of multiple columns of resonance, arrayed within a systematic unifying

structure, resulting in a series of resonant mappings with elements appearing in the same order and filling the same structural role. Other things being equal, the more columns of resonance, the more salient the parallelism. (There is more to dialogic syntax than just counting columns, of course; for example, the number of times the pattern is reproduced is a further factor enhancing resonance. Here again, (7) shows greater resonance than (6), five rows to two.)

The objection may be raised: Isn't parallelism just a side effect of topic continuity, given what the speaker wanted to talk about? True, if the word *drama* is used and you wish to respond on topic, there may be few options but to reuse the word. This may go some way toward explaining the minimal parallelism of Jeff's *no drama* response in (6). But this would be less plausible as an account for Jill's verbalization choices in (7). The same referential content could easily have been expressed far more compactly (~*There was drama, suspense, relief, and ecstasy*), implementing Grice's injunction to "Be informative" with maximum efficiency (Du Bois, in progress). In this light, the quintuple parallelism in (7) cannot be so lightly dismissed. We must conclude that at least some cases of parallelism represent a decision, whether conscious or not, to choose this form of expression over a simpler alternative.

This example illustrates another key point. While dialogic syntax is canonically realized in dialogic exchanges between two speakers, this is by no means necessary for the production of parallelism and resonance. Dialogic syntax is not limited to cross-turn productions; it can, and often does, arise within the utterances of a single speaker. What is essential to dialogicality is not dialogue in the narrow sense, but engagement with prior words and structures.

3.2 Resonance

The term resonance has so far been used informally; now it is time for a proper introduction. Resonance is defined as the catalytic activation of affinities across utterances. Resonance is a property of relations between elements in discourse; as such it cannot be attributed to any element in isolation. It represents a developing process of activation and elaboration of certain aspects of the perceived relationship between comparable linguistic elements. Resonance can arise between paired elements at any level of language: signs, words, morphemes, constructions, phonemes, prosodic structures, features, meanings, referents, illocutionary forces, pragmatic functions, interactional moves, and so on. Resonance can be systemic or dynamic. In the first case, it draws on linguistic affinities involving well-established aspects of language, activating relationships that are already available to most members of a speech community, such as the linguistic categories and paradigms identified by standard linguistic analysis. In the sec-

ond case, resonance results from the emergence of new affinities and/or changes in the weighting and configuration of existing affinities. This is the meaning of the catalytic, or change-inducing, aspect of resonance. Given its versatility in dynamically reshaping the significance of elements in a dialogic exchange, resonance can be thought of as the basic currency of dialogic engagement.

In the following example, resonance is pervasive, yet subtle: The exchange seems quite ordinary. (Kathy is tutoring her boyfriend Nathan in math, as he practices math problems for an upcoming test.)

(8) (*Zero Equals Zero* SBC009: 731.70–744.11)

- 1 KATHY; ^I don't know this one so,
 2 NATHAN; You don't know how to ζ^do this one?
 3 (1.1)
 4 So ^we in ^trouble.
 5 (1.4)
 6 KATHY; Well ^you apparently knew how to do it.
 7 (0.2)
 8 NATHAN; Did I get it ζ^right?
 9 (0.3)
 10 KATHY; (H) Well you didn't (0.3) get the ^whole thing right.
 11 (0.2)
 12 NATHAN; @@[@ (H) ##]
 13 KATHY; [(H)
 14 But you–] –
 15 Well you just ^missed one ^part of it.
 16 (0.4)
 17 NATHAN; So what's that ^problem.

While this interaction lacks the heightened poetic qualities of example (5), it nevertheless exhibits pervasive resonance. The resonance comes across as ordinary and unselfconscious; there's no sense that the participants feel that anything special is going on. Such resonance can be easy to overlook in a casual reading of a transcription. But a close analysis, rendered in a carefully constructed diagram representation, reveals an impressive degree of structural resonance:⁴

⁴ An alternative analysis would recognize two diagrams rather than one, one for lines 1–6 and another for lines 8–15. The plus is that each diagram gains a tighter, denser structure; the minus is that resonance between the two resonance clusters would not be represented. Often there is more than one way to represent a diagram, and something can be learned from each of the representations.

(9)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	KATHY;	^I	do	n't		know				this		one		so	,
2	NATHAN;	you	do	n't		know how to	^do			this		one			?
6	KATHY;	well	^you		apparently	knew how to	do					it			.
8	NATHAN;	I	{did} ⁵						get			it	^right		?
10	KATHY;	well	you	did	n't				get	the	^whole	thing	right		.
14	KATHY;	but	you												—
15	KATHY;	well	you		just				^missed	one	^part	of	it		.

This example illustrates the rich array of structural affordances for dialogic resonance provided by the grammar of a given language. Over a dozen distinct types of resonance affordance can be identified in the brief exchange in (9); the most prominent are summarized in Table 1. Resonance affordances like these draw on multiple levels of morphosyntactic, semantic, pragmatic, and prosodic organization of language.

Resonance is both source and product of parallelism. As a source, it draws on existing similarities between two linguistic elements, deploying them to create connections between pairs of utterances. When resonance resources are deployed effectively, the utterances that are dialogically juxtaposed are more likely to be perceived as parallel. By activating potential connections, resonance enhances parallelism, contributing to structural engagement. In return, parallelism enhances the perception of resonance, facilitating the perception of similarity between structurally aligned elements. It invites selective attention to some aspects of potentially similar elements (Gentner and Markman 1997; Medin et al. 1993), while ignoring other aspects (which might have emerged as resonant given a different parallelism). Thus the relation between resonance and parallelism evokes a feedback loop, which can be exploited to influence both which potential affinities will be perceived as resonating, and which sequences will be perceived as parallel. A similar relation of reciprocal influence arises between resonance and structural priming (as recognized in the resonance cycle, cf. Du Bois, in progress).

While resonance and parallelism are closely linked, they remain distinct both in concept and in practice. Resonance may arise without parallelism, for example, when a word is reused in two successive sentences, but in two distinct

⁵ Curly brackets { } are used in a diagraph to indicate that a word has been moved, relative to its sequential position in the original utterance. This is done to capture the perceived resonance, based on the assumption that interlocutors are able to recognize resonance despite (predictable) variations in word order, such as those arising from auxiliary inversion (e.g. resonance between {*did*} : *did* and {*did*} : *do* in column C).

Table 1: Linguistic affordances for dialogic resonance

Column	Mapping	Relation	Description
F	<i>know : know : knew</i>	inflection	tense opposition
F	<i>know : know</i>	morph	co-tokens of a single type (in lines 1 & 2)
C	<i>do : do : did : did</i>	auxiliary	tense inflections of auxiliary verb
B	<i>I : you</i>	coreference	different forms, same referent (in lines 1 & 2)
B	<i>I : you : you : I : you : you : you</i>	paradigm	personal pronouns, not all co-referential
J-L	<i>it : this one : the whole thing</i>	constituency	equivalence of single word and phrasal expansion
F-I	<i>know : know how to do</i>	embedding	clause complement paraphrase, hidden question
B-C	<i>did I : you did</i>	inversion	auxiliary inversion as Harris transformation
C-D	<i>did : did n't</i>	negation	cliticization of negative particle
I-M	<i>do it : get it right</i>	synonymy	resultative complement construction vs. transitive
I-M	<i>get it right : missed . . . it</i>	antonymy	resultative complement construction vs. transitive
E	<i>apparently : Ø</i>	markedness	adverbial modification vs. its absence
B	<i>you : ^you</i>	contrast	contrastive accent vs. unaccented form (lines 2, 6)
O	? : ,	end tone	intonation contour contrast marks question (1, 2)

syntactic positions. To be sure, for such resonance to become salient the word in question must be sufficiently distinctive (informative, high entropy) that its recurrence will be noteworthy, even without the support of syntactic framing. But an exclusive focus on resonance between individual words can yield a welter of criss-crossing lines (Halliday and Hasan 1976), overlooking the role of structural parallelism in organizing the framing of dialogic resonance.

For some purposes it may prove useful to extend the definition of resonance to ‘the catalytic activation of affinities across **representations**’. Such a formulation would at once encompass utterances (as overt representations in discourse) and their mental representations (in cognitive processing and memory). Whether to pursue the link between the two kinds of representations (verbalized vs. mental) raises important issues which are subtly intertwined with the analysis presented in this paper, and call for attention in future research. For the present I will ignore these complexities, focusing on the relation between overt utterances.

3.3 Diagraph

In dialogic syntax, the importance of the diagraph is twofold. It is recognized as a fundamental unit of linguistic structure, and serves as a key analytical tool. Examples of diagraph representations have been presented in (2), (4), (6), (7), and (9), offering some sense of what a diagraph is; here I take a deeper look at the concept.

A *diagraph* is a higher-order, supra-sentential syntactic structure that emerges from the structural coupling of two or more utterances (or utterance portions), through the mapping of a structured array of resonance relations between them. *Diagraph* (from *dia-* ‘across’ plus *graph* ‘mapping’) means essentially ‘mapping across,’ implying a mapping between parallel structures across two or more utterances. As its name suggests, a diagraph is indeed a kind of graph (Edelman 2008; Gross and Yellen 1999; Solan et al. 2005), but it is not a graph on paper. It is an emergent graph structure built from the mapping (Fauconnier 1997; Gentner and Markman 1997) of actual words and structures produced in real time by dialogic co-participants. Their linguistic actions construct the graph relation by iconically mapping an array of linguistic elements in one internally structured utterance to their counterpart elements in a parallel utterance. The term diagraph can be thought of as applying to the embodied realization in actual utterances, or to the interlocutors’ mental representations of the structural coupling as experienced. As noted earlier, the term is also applied informally to denote the analyst’s representation.

The parallel utterances in a diagraph may be free-standing sentences that are otherwise completely independent of each other, at least from the perspective of traditional syntax. Each of the utterances making up a diagraph has its own internal structure, which we can take to be, as a first approximation, the standard constituent structure that would be assigned to it by traditional linear syntax. Each participating utterance, then, brings something of its own to the diagraph that it jointly constitutes. When two or more such internally structured utterances are dialogically juxtaposed in discourse, the perception of parallelism between them brings the diagraph relation into existence. The diagraph thus builds on sentence-internal structure, but goes beyond it to articulate further structural relations between the paired sentences, yielding a higher-order unit tied together by mappings between corresponding linguistic elements. As an example, consider the exchange in (1), repeated here for convenience:

(10) (*Deadly Diseases* SBC015: 870.750–874.220)

- 1 JOANNE; (H) It’s kind of like ^you Ken.
- 2 (0.8)
- 3 KEN; That’s not at ^all like me Joanne.

In responding to Joanne, Ken produces an utterance that parallels hers along multiple dimensions of form and meaning. His words resonate with hers, but so do the syntactic relationships between words. Each word, structure, and syntactic relation in his utterance can thus be seen as mapping to a corresponding element in her utterance, arrayed in more or less the same word order and syntactic structure. By producing a parallel utterance to hers, he in effect makes each of his words point indexically to its counterpart in her prior utterance. We can represent this pointing via an arrow directed from the later utterance (the so-called target) to the prior (base) utterance:

(11)

1	JOANNE;	It	's	kind of	like	^you	Ken	.
		↑	↑	↑	↑	↑	↑	↑
3	KEN;	That	's	not at ^all	like	me	Joanne	.

Thus the graph relation that constitutes the diagraph is grounded on an indexical link of contiguity between utterance tokens in discourse, which establishes the mapping relation necessary to constitute the diagraph as a diagrammatic icon (Peirce 1931–1958). The indexical relationship can be made notationally explicit with arrows, but ordinarily it is simply left implicit in the vertical alignment, as in the standard diagraph representation in (2). While sufficient to unambiguously display many mappings (*it : that; like : like; you : me; etc.*), this notation is vague about the details of other mappings (*kind of : not at all*). Does the vertical alignment between *kind* and *not* in (2) represent a claim that there is a mapping between them? This is unintended, and indeed undesirable. An alternative is the table notation, making explicit which mappings are intended:

(12)

1	JOANNE;	it	's	kind of	like	^you	Ken	.
3	KEN;	that	's	not at ^all	like	me	Joanne	.

The overtly marked columns specify the boundaries of linguistic units involved in the relevant mappings. Here this makes clear that *not at all* maps as a phrase onto the phrase *kind of*. (Further illustrations of diagraphs are found throughout this paper.)

In coming to terms with the diagraph as linguistic reality, it is important to remember what we ultimately hope to achieve: an understanding of what participants actually experience as they attend to the emergence of resonance in the unfolding discourse. This corresponds to what we may call the dynamic diagraph:

the real-time sociocognitive process of adaptively representing the structure of currently salient resonances as they are organized, and reorganized, in working memory. At this early stage it must be acknowledged that the dynamic diagraph remains elusive; much remains to be done to clarify its realization as a real-time, adaptive process.

3.4 Reproduction

Reproduction occurs when interlocutors produce again a word or structure that has been produced before, in a context that makes the relationship between base and target salient. The act of reproduction may seem simple, even effortless. But it is all too easy to overlook the work that is required, and the decisions that must be made. Interlocutors must choose whether or not to enact a reproduction, and if so, which aspects of which prior utterance they will select for reproduction. In all but the most slavish of repetitions (where the risk of mimicry looms large), the speaker is immediately confronted with further decisions, including how the reproduced elements will be coordinated with the introduction of new elements in the utterance. All of this is far from a mechanical act of repetition. To speak of re-production is to insist on the effort of producing again. By acknowledging that a new act of production must take place, the term invites recognition of the active decisions that are made in carrying it to fruition. As an example, consider the following. (The participants have been talking about putting lemon in ice tea.)

(13) (*Tastes Very Special* SBC031: 561.497–569.157)

- 1 BETH; So what about ^you,
 2 ^Sherry,
 3 are ζ^you gonna put lemon in your hot tea?
 4 (0.4)
 5 SHERRY; I ^don't [put lemon i]n my hot tea,
 6 BETH; [#You #ever #ζ^do]?
 7 (0.8)
 8 BETH; #Cause ^I only do when I have a sore throat.

In this exchange, both speakers respond to prior utterances by producing their own utterances, which reproduce some but not all aspects of the prior utterance:

stance from hers by introducing the additive particle *either*, marking his utterance as a stance follow, relative to her stance lead (Du Bois 2007):

(16)

1 J; I'm ^not going to be able to wipe this striped guy out yet .
 5 D; ^I'm not going to be able to ^either .

The use of *either* to mark the stance differential here may be virtually obligatory, but Dan still has choices to make, regarding how much of his partner's utterance to reproduce. Any of the following is possible in principle:

(17)

- a. ~I'm not going to be able to wipe this striped guy out yet either.
- b. ~I'm not going to be able to wipe the guy out yet either.
- c. ~I'm not going to be able to wipe him out yet either.
- d. ~I'm not going to be able to do it either.
- e. I'm not going to be able to either.
- f. ~I'm not going to be either.
- g. ~I'm not going to either.
- h. ~I'm not either.
- i. ~Me neither.

The one actually selected from these options on this occasion was e: *I'm not going to be able to either*. But there is nothing inevitable about this choice. What drives such selections is an interesting question, but one we need not resolve here. For present purposes the point is simply that speakers facing verbalization decisions have options, rather than simply responding automatically to an external stimulus (such as a priming utterance). Sometimes the choices are fairly neutral (17), while at other times the selection of some elements and not others carries significant consequences for the situated meaning (14).

In the long term, selective reproduction becomes a critical driving force that shapes the adaptation of the evolving linguistic system (Du Bois 2014; Pawley and Syder 1983). While the immediate effect of dialogic selection is to impose a filter on what gets reproduced within the current local discourse, the consequences extend well beyond it. By raising the cognitive activation levels of the words and structures selected, it enhances their learning (Bock and Griffin 2000), increasing the likelihood of their being used again in some future dialogic interaction. Selection becomes a factor in the dissemination of in-progress language change, impacting the circulation of grammatical innovations across populations of utter-

ances and their speakers in the community of discourse (Anward 2005). In contrast to the generational time scale of child language learning, selective reproduction in dialogic interaction is very fast. By accelerating the timescale for transmitting “heritable” (learnable) variation, the speed of reproduction and selection are accelerated by several orders of magnitude, with profound implications for functional adaptation and the culture-historical evolution of language as a complex adaptive system (Du Bois 2014).

3.6 Contrast

When interlocutors wish to frame two ideas as alternatives, they often choose to define the relationship as one of contrast (Bolinger 1961; Chafe 1976; Lambrecht 1994; Steedman 2000). One way to index contrast is via parallelism. In a diagram, parallelism sets up a structural frame for mapping between counterpart elements, inviting the activation of resonance based on affinities. Given the capacity of prosodic prominence to mark salience, it is often used to specify which element in the current utterance is to be taken as the primary focus of contrast, relative to its counterpart in a prior utterance.

Consider the following excerpt. (The participants have been talking about putting lemon in ice tea; this exchange comes 30 seconds earlier in the same conversation as (13).)

(18) (*Tastes Very Special* SBC031: 533.430–541.201)

- 1 SHERRY; @^I @don't even like ice ^tea.
- 2 BETH; (H) (0.7) Do you like ¿^hot tea?
- 3 (0.6)
- 4 SHERRY; ^Yeah,
- 5 I ^love hot tea.

This brief exchange contains at least two salient instances of contrast. The first arises when line 2 is interpreted against the background of line 1:

(19)

- 1 SHERRY; ^I do n't even like ice ^tea .
- 2 BETH; do you like ^hot tea ?

The parallelism of lines 1 and 2 sets up a structural frame, which enhances the prosodically marked contrast between *ice* and *^hot*. The speaker uses a primary accent to implicate that the affinity *ice* : *^hot* is not just difference, but is marked

as a contrast. The second contrast of interest arises in line 5, as the next speaker uses accent to shift attention to a different focus (*like* : [^]*love*). This is visible in the pairwise diagraph:

(20)

2 BETH; do you like [^]hot tea ?
5 SHERRY; I [^]love hot tea .

Where Beth's unaccented *like* in line 2 had simply reproduced Sherry's prior use of the same word (also unaccented), Sherry in line 5 upgrades (Pomerantz 1978) to [^]*love*, accenting it to index that its resonance defines a relation of contrast. Note that what had been prominent a moment ago in line 2 ([^]*hot*) now plays no special role, once the new focus of contrast is prosodically marked in line 5. No special prosody is needed to signal its loss of prominence. Displaced by a new focal resonance (*like* : [^]*love*), *hot* just fades into the background of framing resonance.

In discourse, effective contrast regularly builds on the juxtaposition of frame resonance and focal resonance. Frame resonance involves identical matches (*tea* : *tea*, *do* : *do*, *like* : *like*) or other straightforward or high frequency affinities (*I* : *you*). It provides the structural foundation for parallelism. On the other hand, focal resonance serves to articulate a focus of contrast (*ice* : [^]*hot*, *like* : [^]*love*). Deployed against a framing background of parallelism, prosodic prominence often indexes the intended focal element as contrastive. (For an analysis of frame resonance and focal resonance in an experimental context, see Du Bois et al., this issue.) Attested instances of contrast typically exhibit greater complexity than the invented examples used by many linguists, analyzed in isolation or at best in sentence pairs. Against a background of dialogic resonance, the focus of contrast becomes fluid, shifting multiple times within a dialogic sequence. Contrast is deployed dynamically, with prosody rapidly assigning and reassigning the focus of attention, even as the diagraph structure remains more or less constant.

3.7 Analogy

One of the most important things dialogic syntax does is to create certain affordances for generating new forms and meanings, which may be considered under the rubric of analogy. As activated through resonance in the diagraph, analogy introduces a powerful engine for inference, whether applied to language (Anttila 1977; Blevins and Blevins 2009; Fauconnier 1997; Itkonen 2005) or to general cognition (Gentner 2003; Gentner and Christie 2010; Hummel and Holyoak 1997).

Dialogic syntax constructs analogies at every level of language, including phonology, morphosyntax, semantics, and pragmatics, with significant implications for cognition.

Analogy can be deployed when an unknown word is encountered, as part of a cognitive process of interpreting its meaning. This interpretive process sometimes depends on the support of framing resonance in a diagraph structure. The need for dialogic support becomes clear if we first examine a sentence out of context, in the absence of any framing resonance:

(21) (*Deadly Diseases* SBC015: 957.828–959.085)

He saw them porking.

For many native speakers of English, this sentence comes across as somewhat mysterious. Grammatically, the use of *pork* as a verb is unexpected; semantically, its meaning is unclear. Lexicosemantic associations of the word *pork* offer one strategy for decoding, but the notion that it might relate to *pigging out*, with a meaning like ‘eat gluttonously’, turns out to be irrelevant. A better clue to meaning is that the following sentence occurs in the nearby discourse context:

(22) (*Deadly Diseases* SBC015: 959.985–961.060)

I saw em actually doing it.

Still, this sentence too is far from explicit. But once the full dialogic context is available, the resonance is clarified, and along with it the analogical implications for grammar and meaning:

(23) (*Deadly Diseases* SBC015: 957.828–964.450)

- 1 JOANNE; He saw them ^porking.
 2 (0.2)
 3 KEN; You know,
 4 I saw em,
 5 ^I [saw em actually] ^doing it.
 6 JOANNE; [@@]
 7 KEN; I'm one of [₂the very few] ^living human [₃^beings,
 8 JOANNE; [₂@@@]
 9 LENORE; [₃@@]
 10 JOANNE; [₃@@]
 11 KEN; who've₃] seen ^turtles having ^sex.

The analogical solution, already evident in the dialogic juxtaposition, is made explicit in the following diagram.

(24)

1	JOANNE;	he	saw	them		^pork-	-ing	.
5	KEN;	^I	saw	em	actually	^do-	-ing	it
11	KEN;	who 've	seen	^turtles		hav-	-ing	^sex

Although Joanne's *porking* may appear opaque at first, a participant for whom this word is novel could gain a clue, *ex post facto*, from Ken's subsequent resonance with the word. The diagram frame affords an analogy which is capable of resolving both grammar and meaning. Mapping backward between the three forms inflected with the suffix *-ing* (*pork*, *do*, *have*) allows the meaning of *porking* to be derived. Given the appropriate diagram mapping, resonance affords analogy. Analogy represents a powerful strategy for learning on the fly, whether by children or adults, and thus forms a key component of the dialogic bootstrapping strategy cited at the beginning of this paper.

Having introduced the fundamental concepts, I now turn to the question: How abstract is dialogic syntax? While some forms of cognitive-functional linguistics have tended to be skeptical of abstractions, new evidence for their linguistic relevance may come from a surprising quarter: dialogic resonance in conversational interaction.

4 Real abstractions

One puzzle for dialogic syntax, as for all current exemplar-based models of language (Bod 1998; Bybee 2006; Bybee 2007; Wedel 2006), is this: If grammar is said to emerge from the accumulation and interaction of particulars (Becker 1995), how does it come to have abstractions – if indeed it does? Structural approaches have typically described grammars in terms of abstract categories (e.g. noun, verb, adjective) and structures (e.g. noun phrase, adverbial adjunct, clausal complement). Indeed, abstractions are posited for every level of linguistic organization, from phonemes to phrases to constructions and beyond. But there is a potential conflict between the abstract system of language and the concrete particularity of utterances in discourse. The first question is, whether the posited abstractions of structural grammar can be justified as psychologically real. If so, the next question becomes: How does language bridge the gap between particularity and generalization? I address these questions from the perspective of dialogic syntax.

Among the most valuable things a system of signs can offer its users is a capacity for generalization. For this, according to Peirce, language needs arbitrariness and abstraction (1933[1885]). All languages are well endowed with the means for generalization, as is evident in the prevalence of arbitrary symbols (e.g. words), as well as in the critical role played by categories at all levels of language: phonemes, morphemes, parts of speech, grammatical meanings, clause types, and so on. For language users to apprehend and exploit the generality of any of these categories requires abstraction. This is not a matter of the linguist's sometimes obscure paraphernalia for representing abstraction, but an integral aspect of language in everyday use. The seemingly simple, but in fact remarkable, achievement of putting two entities into the same category depends on a capacity to override innumerable distracting details that would otherwise make every entity unique, and hence resistant to generalization. Without the capacity to formulate general observations, learn general categories, and communicate general predications, the species that depends on language would find it impossible to survive in the world it has made. In this vein, Roman Jakobson cites Borges' parable of Funes the Memorious, whose absolute memory allowed him, indeed forced him, to remember everything he ever saw in all its uniqueness – and also incapacitated him by overwhelming him with detail. Unless one can disregard all aspects of an experience except those selected as relevant, the capacity for general thinking will remain elusive.

How is this relevant to dialogic syntax? Assuming that (1) the value of language to its users depends in part on affordances for generalization, (2) generalization requires abstraction, and (3) exemplar-based models (such as dialogic syntax) are grounded in the particularities of language use, then it becomes crucial to note the potential disconnect between particularity and abstraction. How is the gap to be bridged? Formal models readily invoke idealized abstractions, but exemplar-based models – including dialogic syntax – can't afford such a strategy. If they are to embrace the particularity of language in use, yet transcend it, they must come to terms with the reality of abstractions.

For dialogic syntax, the problem comes to a head in the tension between the tangible reality of particular utterances and the need to transcend this particularity to arrive at a common ground. What might this transcendence look like? Consider the following playful exchange between a young couple:

(25) (*Risk* SBC024: 301.235–304.400)

- 1 DAN; I'm not ζ^smart?
- 2 (0.3)
- 3 JENNIFER; You're ^stupid.

The perception of parallelism is strong, despite the fact that not a single word is repeated verbatim:

(26)

5 DAN; I 'm not ^smart ?
7 JENNIFER; you 're ^stupid .

Even with all these differences, dialogic resonance is readily established, once the mediating power of grammatical abstraction is invoked to bridge them. The paradigm of personal pronouns aligns *I* : *you*, the suppletion of the copula aligns *'m* : *'re*, the shared semantic feature of intelligence aligns the antonyms *smart* : *stupid*, and the phrasal composition of negation aligns the synonyms *not smart* : *stupid*. (Though it is difficult to represent both resonances of *stupid* at once using just the two dimensions of the basic diagraph representation, the actual dynamic diagraph should have no such problem, given the human capacity to map complex analogical relations.) But abstraction runs deeper, even into the phonological system. The phonology of English is needed to allow recognition of the match between the different allophones of final /t/ in *smart* and post-sibilant /t/ in *stupid*, to align the alliteration of Dan's /s/ in *smart* with Jennifer's /s/ in *stupid*, and even to align Dan's and Jennifer's variant pronunciations of the first vowel in *stupid* (in 27). It is the linguistic system that bridges their differences, as it does between any two pronunciations of the "same" sound.

The level of abstraction needed for recognizing the parallelism of the two simplex sentences in (26) hardly pushes the boundaries of linguistic complexity. But a look at the larger discourse context reveals some more complex abstractions:

(27) (*Risk* SBC024: 299.283–306.456)

1 JENNIFER; Look at ^you being smart.
2 (1.0)
3 DAN; (H) @
4 (0.7)
5 I'm not ζ^smart?
6 (0.3)
7 JENNIFER; You're ^stupid.
8 (0.9)
9 DAN; Don't ^call me ^stupid.

The following diagraph gives an idea of the relevant mappings:

(28)

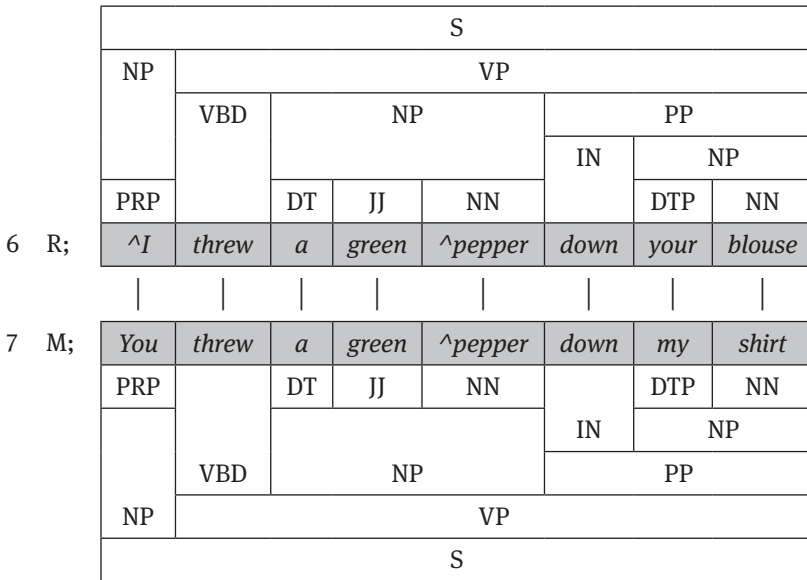
	A	B	C	D	E	F
1	JENNIFER; <i>look at</i>	^you	being		smart	.
5	DAN;	I	'm	not	^smart	?
7	JENNIFER;	you	're		^stupid	.
9	DAN; <i>do n't ^call</i>	me			^stupid	.

(Note that in column A, italics are used by convention to indicate that the italicized words are not being claimed to resonate.) The primary resonance occurs in columns B to E, where (in the first pair of lines) *I'm not smart* (line 5) is mapped to *you being smart* (line 1). As in (26), the equivalence of different inflections of copular *be* comes into play, but this time the resonance maps a morphologically finite inflection (*am*) to a non-finite inflection (*being*). Moreover, the morphological equation presupposes a higher level of syntactic abstraction at the clausal level, mapping the finite main clause *I'm not smart* to the non-finite embedded clause *you being smart*. A second abstract parallelism occurs in lines 7 and 9, equating the finite main clause *you're stupid* with the non-finite embedded clause *me stupid*. Moreover, what the participants achieve here goes beyond just formal structure and lexical semantics to shape the pragmatic meaning as well. When Dan resonates with the positive *you being smart* he offers the negative *I'm not smart* as its meaning equivalent. Nobody's fool, he processes the irony (Giora 2003 et al. 1998; Kotthoff 2000), reversing the ironic polarity of the base utterance (line 1) to construct his own “answering word” (Voloshinov 1973 [1929]: 102) as a literal target (line 5). The verbalization in swift succession of two pairs of resonating lines, each involving a complex clause-level mapping, suggests that participants readily handle the abstractions involved. The fact that the diagraph dynamically incorporates an ironic reversal makes it clear that what is being mapped is not merely a pair of formal structures, but a complex configuration of internally structured utterances, each fully invested with a specific situated interpretation.

How does this work, and when exactly does it happen? For dialogic syntax, the answer to the second question seems clear, and provides a clue to the first. Abstraction takes place in the dialogic moment, as one utterance meets another and resonates with it. The dialogic moment is the precise instant when abstraction is both necessary, to locate the common ground for engagement between two utterances, and possible, due to the ready availability of the ingredients for generalization. The timescale of dialogic resonance offers a plausible clue, as the scope of working memory readily accommodates the typical diagraph pair of matched intonation units. The availability in working memory of the essential ingredients – the two utterances that have been (re)produced – creates the

resemble a standard syntactic tree (but for a precursor, see Bird and Liberman 2001: 53, Fig. 14), a quick perusal will confirm that it incorporates the same information that is present in the more familiar branching tree diagram – and more. The more, of course, is dialogic resonance. I call this representation a *mirror diagraph*:

(31)



The way to read a mirror diagraph is as follows. Starting from the middle of the diagraph, two horizontal shaded bars appear, each containing the words (terminal nodes) of one strand of the diagraph (i.e. one intonation unit). The two strands are mapped to each other; in this way the mirror diagraph incorporates the same information about the mapping of resonating words as in the standard diagraph representation in (30). Thus the fact that *^pepper* is mapped to *^pepper* and *shirt* is mapped to *blouse* is represented by the vertical alignment of words in (31), augmented by lines connecting the words. Speaker labels (abbreviated as *R*; for Roy and *M*; for Marilyn) appear to the left of the words uttered, and line numbers indexing the location of the utterances in the original transcription (lines 6 and 7) appear to the left of the speaker labels.

More interesting for present purposes is that the mirror diagraph incorporates the same kind of syntactic parse information found in a standard syntactic

tree – or rather, in two trees, one for each interlocutor’s utterance. In this labeled graph, each syntactic constituent is categorized using standard category labels, based loosely on the conventions of the Penn Treebank (Marcus et al. 1993; Taylor et al. 2003). The second tree (representing Marilyn’s utterance) is inverted in order to allow its words to be mapped directly to those in the first tree (Roy’s). In addition to the vertical alignment, the mapping of words is shown by short connecting lines indicating the “weak bonds” of resonance between words (leaf nodes). In principle the weak bond notation can be used to index mappings between non-terminal nodes across the two trees as well (e.g. VP to VP, NP to NP, etc.), though this diagram representation does not exploit this possibility.

Note that this example presents a rather simple case, given that the two resonating sentences have exactly the same syntactic structure. But what is to be done when a more complex case arises? For example, sometimes the parallelism between utterances is partial, involving the alignment of one portion of a syntactic structure but not another. This kind of structural resonance is fairly common, and presents interesting challenges. Consider the following example. (Brett is making a drawing for a school assignment; he has asked his sister Melissa to move her pen away from it.)

(32) (*Doesn’t Work in this Household* SBC019: 107.013–111.881)

- 1 MELISSA; It’s ^erasable,
 2 and I am ^not marking on it.
 3 (0.7)
 4 BRETT; I don’t ^care if it’s erasable,
 5 don’t ^touch it.

The standard diagraph representation readily displays a mapping between the resonating words *it’s erasable*, used first by Melissa and reproduced by Brett:

(33)

- 1 MELISSA; it ’s ^erasable ,
 4 BRETT; I don’t ^care if it ’s erasable ,

But in the first utterance (line 1), *it’s erasable* represents a matrix clause, while in the second the same words realize an embedding (line 4). To map the complex syntactic resonance explicitly, a more elaborate notation is called for, as in the following:

(34)

1 M;

S		
NP	VP	
PRP	BEZ	JJ
<i>it</i>	<i>'s</i>	<i>^erasable</i>

4 B;

<i>I</i>	<i>do</i>	<i>n't</i>	<i>^care</i>	<i>if</i>	<i>it</i>	<i>'s</i>	<i>erasable</i>
PRP	AUX	NEG	VB	CS	PRP	BEZ	JJ
NP	VP				NP	VP	
	S						

It is important to stress that these syntactic analyses are for illustrative purposes only. For convenience I have presented a fairly conventional syntactic tree, but this does not imply a commitment to any particular syntactic analysis. How to represent dialogic syntax is a complex question, but the point I am making here is a simpler one. Observations of dialogic resonance in conversation seem to offer tantalizing evidence for what I call “real abstractions”, reflecting the interlocutors’ capacity for mobilizing abstract syntactic knowledge (including embedding) in the service of the local discourse task. Real abstractions may serve to transcend the particularities of specific paired utterances to support the recognition of dialogic resonance between them. If this is correct, the issues go well beyond merely notational ones. This is just the beginning of an exploration of how new forms of syntactic analysis might help to apprehend the cognitive implications of what interlocutors do in jointly constructing their diagraphs. Further research is needed to develop a structural analysis of the dynamic diagraph that is at once psychologically real, dialogically perspicuous, notationally practicable, and accessible to analysts. Realizing these goals is likely to require the use of more innovative syntactic models. Among the more intriguing possibilities are self-organizing graphs and statecharts (Edelman 2008; Solan et al. 2005); dependency grammars such as word grammar (Hudson 2007); the structure-mapping of blending analysis in cognitive grammar (Fauconnier 1997); or some as yet unrealized combination of these and other approaches.

The full human capacity for language is realized only when interlocutors engage with one another to articulate the relation between their respective

meanings. This places demands on the articulating medium of grammar to offer abstractions capable of transcending the particularities of each utterance. The system of grammar provides language users with rich affordances for structural engagement, via an array of categories, structures, rules, and other abstractions. But these abstractions don't come out of nowhere. Rather, I speculate that it is the very process of activating resonance in bridging the particularities of engaged utterances that leads to the emergence of at least some linguistic abstractions. From a cognitive-functional perspective, then, syntactic abstractions may represent grammaticized adaptations to the demands of structural coupling between interlocutors and their utterances. Adaptation to engagement yields a virtuous circle of reproduction, emergence, grammaticization, and affordance.

Traditional linear syntax, by celebrating the sentence as complete unto itself, achieved not only idealization but isolation. Once idealized, the abstract sentence becomes difficult to restore to a meaningful relationship with its linguistic context. In contrast, dialogic syntax proposes to give abstraction a name and a habitation – a natural environment of occurrence in the dialogic moment, in which the actual process of abstraction can be observed, described, and theorized. Real abstractions emerge from the engagement of particulars, and serve subsequently to bridge the differences between particulars in future dialogic encounters. What drives the adaptive cycle is a combination of the human motivation to engage and the human capacity for abstraction.

5 Is this syntax?

Not syntax as we know it, to be sure. Still, it is natural to ask whether the term syntax should be extended to include the kinds of structures and processes identified in the present paper, including syntactic parallelism, structure-mapping, diagraphs, dialogic resonance – in sum, dialogic syntax. And if so, a further question arises: How is the new (dialogic syntax) to relate to the old (syntax as traditionally understood)? These questions are more than just terminological. What gets treated as syntax will have important implications for how linguists approach the task of analyzing the structural organization of language. It bears noting that the eminent syntactician James McCawley saw no principled reason to limit syntax to single sentences:

While the sentence is the unit on which the greatest amount of attention will be lavished in this book, I (unlike most syntacticians) take syntax to include principles constraining the combination of sentences and/or other units into larger units of discourse. (McCawley 1998: 9)

The diagraph would surely qualify as one such structure, involving as it does “the combination of sentences and/or other units into larger units.” It remains to be seen what syntactic principles constrain the construction and interpretation of diagraphs. Other linguists as well have recognized syntax across sentences (Ariel 2010: 3.2.1.; Harris 1952a, 1952b; Sag and Hankamer 1984), if not on the scale envisioned by dialogic syntax.

Taking up the second question first: How do the phenomena targeted by dialogic syntax relate to those treated by traditional syntax? Throughout this paper I distinguish between dialogic syntax and what I call, for lack of a better term, linear syntax. As noted earlier, linear syntax refers to traditional (non-dialogic) syntax, which is generally known simply as syntax. I call it linear because it specifies a linearization of the sequence of words in the sentence (Givón 1979; Hudson 2007; Saussure 1916), as opposed to the mapping relation which is central to dialogic syntax. As commonly practiced over the last century by any number of distinct schools of grammar, linear syntax deals primarily with the study of sentences as independent units. Within this domain, linear syntax describes the structural relations which specify the internal organization of individual sentences, including relations of constituency, hierarchical inclusion, dependency, and linear sequence (of morphemes, words, and constituents). Despite the many theoretical differences between schools, a significant degree of consensus has emerged regarding the basic facts of surface syntactic structure and syntactic categories (parts of speech). This is often codified in standard reference works such as (for English) the *Cambridge Grammar of the English Language* (Huddleston and Pullum 2002), the Penn Treebank (Marcus et al. 1993; Taylor et al. 2003), and the International Corpus of English treebank (Nelson et al. 2002). Linear syntax manages to achieve its descriptive successes without reference to the kinds of dialogic mappings between sentences entertained here, and indeed has little to say about them. Nevertheless, the findings of traditional linear syntax, to the extent that they capture psychologically real descriptive statements about the internal structure of independent sentences, provide a valuable input to dialogic syntax. The discourse evidence suggests that the internal organization of the clause as described by linear syntax acts as a constraint on the production and interpretation of the diagraph as a higher-order syntactic structure in dialogic syntax. Thus linear syntax and dialogic syntax each bring something of their own to the task of defining constraints on diagraph structure and dialogic resonance.

Still, linear syntax has certain self-imposed limitations which come to light in the contrast with dialogic syntax. One way to think about the differences (and similarities) between linear and dialogic syntax is to consider what methodologies they typically invoke, and what counts as linguistic data. In practical terms,

we can ask how the data in this paper might appear if viewed through the lens of the isolated sentence model. In this approach, often associated with linear syntax, each sentence is treated as isolated and autonomous – a world unto itself:

(35) *He's still healthy.*

(36) *It's kind of like you Ken.*

(37) *So your mother's happy now.*

It bears remarking that each of these sentences is unremarkable on its own. Each is amenable to a standard syntactic analysis, in traditional syntax of one theoretical guise or another. If that's true, it's hard to see what all the fuss is about with dialogic syntax. The data adduced in this paper seem to lose their impact as a challenge to traditional syntax – when viewed as isolated sentences, that is. The first question that needs to be asked, then, is how the data are to be viewed. When traditional syntax isolates its sentences (whether attested or invented) as a prelude to analyzing them, this effectively imposes a limitation on what syntactic phenomena can be observed. Thus the “same” data come out looking very different, depending on how they are accessed. Viewed through the lens of the isolated sentence model, discourse data appear simply as an unordered set of isolated sentences. If so, the phenomena of dialogic syntax do not appear as a problem for linear syntax; they simply do not appear at all, having been rendered invisible by theory and method. (Sadly, much of current work in corpus and computational linguistics attains much the same effect, due to certain analytical methods that are routinely applied. In order to amass instances of syntactic units or fragments that are presumed to be relevant, computational processing is applied to the discourse data to isolate units of analysis that are deemed tractable – thus erasing the higher-order connectedness of discourse.)

It may be objected that linear syntax does have a tradition of analyzing paired sentences, in its own way. A familiar feature of papers in traditional syntax is that the example sentences are often arrayed in pairs (or larger sets). Each set is assigned its own example number, and the individual sentences in the set are distinguished as (a) vs. (b), etc. The implication is that the sentences bearing the same identifying number have something interesting in common. With this in mind we could revisit the data in question, seeking to extract pairs of sentences:

(38) a. *He's still healthy.*

b. *He's still walking around.*

- (39) a. *It's kind of like you Ken.*
 b. *That's not at all like me Joanne.*
- (40) a. *So your mother's happy now.*
 b. *My mother's never happy.*

One could go farther, of course. For an idealizing syntax, all variation should ideally be eliminated from the pairs of autonomous sentences, except for the one variable currently under analysis. With a few modifications one can create a kind of syntactic minimal pair:

- (41) a. *He's still healthy.*
 b. *He's still walking.*
- (42) a. *It's like you.*
 b. *It's not like you.*
- (43) a. *Your mother's now happy.*
 b. *Your mother's never happy.*

The data have instead been turned into “example sentences,” (re-)constructed to meet the needs of the grammarian. Though they may be used to illustrate some rule or principle of abstract grammar, what has been effectively erased is their nature as connected discourse, as supra-sentential syntactic structures (diagraphs), or even as individual syntactic sentences serving an actual speaker's immediate functional needs. Whatever lingering resemblance to a diagraph may remain, this must be considered an illusion. While intended to illustrate variations on a syntactic dimension of interest, in other respects the pairs remain, simply, unordered sets of isolated sentences. Still, is that so bad?

What was lost becomes visible again once the filters are removed:

- (44) (*Deadly Diseases* SBC015: 703.380–708.860) (= example (3))
- 1 JOANNE; yet he's still ^healthy.
 2 He reminds me [of my ^brother].
 3 LENORE; [He's still walking] ^around,
 4 I don't know how ^healthy he is.

The fully functional specificity of naturally occurring language use is re-established, in all its particularity, prosody, and purpose:

(45) (*Deadly Diseases* SBC015: 870.750–874.220) (= example (1))

- 1 JOANNE; (H) It's kind of like ^you Ken.
- 2 (0.8)
- 3 KEN; That's not at ^all like me Joanne.

And it becomes easier to see how the particularity of each utterance can co-exist with the generality and similarities that unite them into a single higher structure:

(46) (*Deadly Diseases* SBC015: 849.456–852.290)

- 1 LENORE; So your mother's ^happy now.
- 2 (0.2)
- 3 JOANNE; (H) My mother's ^never happy.

Still, the higher-order structure doesn't become obvious until the implications for diagraph mappings are drawn. But aren't diagraphs abstract too? And if so, don't they lead us into idealization, with temptations, risks, and distortions similar to those of traditional syntax? To be sure, the process of mapping a diagraph requires some degree of abstraction away from the full particularity of each utterance, for both interlocutors and analysts. Yet the diagraph retains an index of the voices heard, in all their prosodic particularity; and along with it the identities of the interlocutors, who are recognized as articulating their utterances with a purpose. This is codified in the conventions of diagraph representation, which is committed to preserving certain indexes of particularity that distinguish each utterance. For example, the diagraph representation includes an indication of voice (speaker labels), sequence (line numbers), and prosody (comma, period, caret):

(47)

- 1 JOANNE; yet he 's still ^healthy .
- 3 LENORE; he 's still walking ^around ,

(48)

- 1 JOANNE; it 's kind of like ^you Ken .
- 3 KEN; that 's not at ^all like me Joanne .

(49)

- 1 LENORE; so your mother 's ^happy now .
- 3 JOANNE; my mother 's happy {^never} .

The differences between linear syntax and dialogic syntax begin with their respective goals, and are reflected in the kinds of structural relations that are

in focus. To be sure, linear syntax has always recognized certain relations that extend across sentences, such as anaphora. But two fundamental differences remain. Where linear syntax tends to suppress the particularity of the utterance in constructing the isolated, idealized sentence, dialogic syntax strives to keep both particularity and generality in the picture at once. More crucially, where linear syntax ignores intersentential mapping, dialogic syntax recognizes it as a key component of syntactic analysis. The differences come to a head in the diagraph, overlooked as a syntactic structure by traditional syntax, but recognized by dialogic syntax as a higher-order structure with important implications for grammar and pragmatics. The diagraph strives to capture the particularity of each utterance, recognized as fully invested by its author with specific meaning, power, and purpose. At the same time, it tries to capture the structural integrity of the diagraph as a supra-sentential structure, with its mappings between parallel elements mediated by the abstractions of the linguistic system. For dialogic syntax, the diagraph emerges as a jointly constructed structure which achieves a coupling between otherwise independent syntactic configurations of signs. In seeking to represent the structure of engagement, the diagraph frames syntactic affordances for the discovery of common ground between interlocutors.

5.1 Reclaiming syntax

Sometimes taking a new view of a problem means first looking back – in this case, to earlier conceptions of syntax in the recent history of linguistics. It soon becomes clear that there is nothing inevitable about a syntax that idealizes the phenomenon it studies, nor about filtering out particularities in pursuit of generality. Indeed there is nothing in the concept of syntax itself to preclude its expansion to dialogic interaction. Few linguists today recall that the inventor of the syntactic transformation was Zellig Harris; fewer still are aware that he did it to solve a problem in discourse analysis (Harris 1952a, 1952b). This has interesting implications for dialogic syntax. As early as 1946, Zellig Harris had envisioned the extension of his formal techniques of morphosyntactic analysis “to sentences and sequences of utterances (whether monologs or conversations)” (Harris 1946: 178). According to Harris, “Transformations are much needed in discourse analysis,” where they serve “to transform those sentences and sections which contain the same words in such a way that they have the same structure, if this is possible” (Harris 1957: 340). Harris characterized syntactic parallelism in discourse in terms of “matched sentences”, which he described as “sequences in which both sentences contain the same words in all but one or two positions” (Harris 1957: 317). Harris zealously followed through on his promise over the next three

decades, developing a rigorous and massively exemplified syntax of discourse (Harris 1952a, 1952b, 1988; Harris et al. 1989); see (Putnam 1989). While the dialogic approach to syntax proposed here differs in important ways from that of Harris, there are points of agreement that reward contemplation even now (Edelman 2009; Waterfall et al. 2010).

Subsequent work has largely overlooked the import of Harris' ideas, yielding a syntax restricted in scope mainly to sentence-internal issues. Yet there are some topics that evidently lend themselves to a recognition of syntactic effects across sentence boundaries. The most obvious is ellipsis. Early accounts observe that ellipsis occurs across independent sentences, and even across speaker turns (Sag and Hankamer 1984). Recent syntactic treatments of ellipsis (Huddleston and Pullum 2002; Kehler and Ward 2004) continue to develop these insights, sometimes as part of a research program recognizing a role for meaning and/or cognitive processing (Ginzburg 2012; Martin and McElree 2008; Roberts et al. 2013). To complete the picture it is crucial to examine ellipsis where it happens, in naturally-occurring discourse; this has been a hallmark of research on ellipsis by Clancy (1996, 2003, 2009) and other discourse-functional linguists. Recent work in interactional linguistics adds a focus on conversational sequence as a locus of interactional function (Couper-Kuhlen et al., forthcoming; Thompson et al., forthcoming). And of course ellipsis has long played a key role in dialogic syntax (§3.5). Of the topics on which linear syntax has a lot to say, then, ellipsis seems especially ripe for reexamination in light of cognitive-functional, interactional, and dialogic approaches. The domain of ellipsis represents a promising test case for the integration of insights about intra-sentential syntax from linear syntax with analyses of supra-sentential syntactic structures from dialogic syntax. Yet to focus on ellipsis alone would be to miss the generality of the dialogic syntactic processes that lead to higher-order syntactic relations linking otherwise independent sentences. In fact, while ellipsis offers important evidence for structure-mapping, there are others (Fauconnier 1997). In the end, ellipsis may prove to be simply a special case of a more general form of structure-mapping, to be captured in the diagraph.

Still the question remains: Why speak of a dialogic *syntax*? The word *syntax* has taken on accretions of meaning in the modern era to the point where it is now more likely to evoke the linguist's model than the linguistic phenomenon itself. Moreover it is associated with a widespread assumption that syntax is inherently devoid of meaning. To clear the air I turn to a more innocent era, when the word *syntax* applied more often to the linguistic reality than to any particular claim to account for it. Here I draw on Charles Morris' (1938) famous distinction between syntax, semantics, and pragmatics, all three of which he defined in terms of signs and their relations. Morris defines semantics as "the relation of signs to the ob-

jects to which the signs are applicable” and pragmatics as “the relation of signs to interpreters,” while syntax is simply “the formal relation of signs to one another” (1938: 6). Morris’s definitions are sparse to the point of being schematic, which leaves them open to new interpretations. For present purposes, the point of revisiting a Morrisian definition of syntax is not to discard the power and sophistication of the best current analyses of syntactic phenomena, but to regain the freedom needed to frame a new conception of what facts syntax needs to account for, and what kind of theory should explain them. If syntax is “the relation of signs to other signs,” it seems natural enough to extend it to the structure-mapping relation of one sentence to another. To be sure, dialogic syntax introduces new dimensions to the relation between signs and other signs – including intersentential mappings between utterance tokens – which surely go beyond what Morris had in mind. But this extension seems justified by what it makes possible, allowing dialogic syntax to explore a range of new phenomena that arise when higher-order structures are jointly constructed by interlocutors.

Morris’ focus on the sign and its relations presages the current renewal of interest in sign-based theories of grammar in cognitive-functional linguistics, along with the dramatic shift in the relation between grammar and meaning (Goldberg 1995, 2004, 2006; Langacker 1987, 2001). For present purposes, the value of envisioning syntax as a relation of signs to other signs is twofold. First, it clears the air, providing a relatively unencumbered starting point for thinking about what syntax is and what language users can do with it. Second, by focusing on the sign, it opens up new possibilities for thinking about meanings as directly involved in syntactic relations. Signs combine meaning and form (Saussure 1916), which accounts for part of the attraction of sign-based theories of grammar (Sag 2012). Cognitive-functional linguists have increasingly called into question the idea of a meaningless grammar, and have offered alternative visions recognizing meaning as integral to the structure of grammar. This is seen in recent work on cognitive grammar (Langacker 1987, 2001), construction grammar (Goldberg 1995, 2006), word grammar (Hudson 2007), and discourse-functional grammar (Ariel 2008; Du Bois et al. 2003; Givón 1979). Of course, challenges to the formalist conception of grammar have been articulated all along (Chafe 1970), as reflected in Jakobson’s (1990: 332) famous dictum: “Grammar without meaning is meaningless”.

So, is dialogic syntax syntax? The answer hinges on one’s conception of syntax and, ultimately, of the nature of language. For many the answer will be guided by a long-standing commitment to a view of syntax as strictly separated from semantics; others will see form and meaning as intimately linked. What is at stake is not just terminology, but the practice of classifying and interpreting phenomena such as structural parallelism, reproduction, resonance, analogy, and so

on. In framing an approach that recognizes the consequences for situated meaning of structural relations between independent sentences, dialogic syntax seeks to open a new level of inquiry into what syntax is, and, more importantly, how interlocutors use it to build the structure of engagement.

6 Conclusion

I have argued for the need to recognize a new order of syntactic phenomena, and for a theory of syntax capable of addressing it. Dialogic syntax goes beyond traditional linear syntax to recognize as integral to the task of syntactic analysis a new kind of structural relation that arises between otherwise independent sentences, with implications for grammar, meaning, and cognition. Dialogic juxtaposition is achieved by constructing and positioning an utterance so its potential for resonance will be noticed, whether through immediate proximity in conversational sequence, or evocative allusion to a distant prior text. Given the right framing, a pair of utterances reveals a degree of syntactic parallelism that invites the perception of affinity, yielding a mapping between signs aligned across corresponding structural positions.

Dialogic syntax builds on well-established syntactic relations of sequence, constituency, dependence, and hierarchy, but goes beyond them to incorporate one more: structure-mapping. An array of structural elements is mapped onto another, functionally equivalent array in a parallel utterance (or a parallel portion of the same utterance). To analyze such phenomena, dialogic syntax introduces a new kind of syntactic unit. The diagraph is a higher-order, supra-sentential syntactic structure that emerges from the coupling of two or more utterances via the mapping of a structured array of resonance relations between them. It embodies a diagrammatic icon, which provides critical support for cognitive processes (Deacon 2011; Peirce 1931–1958). Constructed in interaction, the diagraph provides affordances for dialogically distributed cognition, supporting the active collaboration of interlocutors.

Dialogic syntax is young, and much remains to be done before it can answer all the questions that are asked of it. The overarching goal is to document, analyze, and explain the role of structural engagement and dialogic resonance in language, cognition, and interaction. Three phases of inquiry can be distinguished (though in practice they are interdependent). First, the empirical phase involves a search for instances of the phenomena of dialogic syntax across contexts, genres, and languages. What is found will depend, obviously, on criteria for identifying what counts as an instance of parallelism, resonance, and so on. Second, the analytical phase seeks to develop a scientific language for describing,

analyzing, and representing structural engagement and dialogic resonance. A major focus of this effort concerns the diagraph, posited as a higher-order syntactic structure resulting from mappings between dialogically juxtaposed lower-order syntactic structures, such as independent sentences. A key challenge for the diagraph model is to capture the complexity and creativity of dialogic resonance in relation to the real-time dynamics of the resonance cycle, which links priming, reproduction, and resonance. Third, the theoretical phase pursues explanation, seeking to relate the analysis of dialogic syntax to aspects of language, cognition, and interaction. In this enterprise, explanation goes both ways. There are aspects of human cognition that must be in place for dialogic resonance to be perceivable; at the same time, the enactment of dialogic resonance in real time creates structural affordances for further cognitive processes.

Such is the general view of what is to be done, but the devil is in the details. Many outstanding issues remain to be addressed; here I will mention just three. First, it is necessary to develop quantitative measures of dialogic resonance, implementing a precise operationalization of the concept. This is needed as a basis for quantitative corpus studies of the structure, function, and distribution of dialogic resonance in naturally occurring language use, as well as for experimental psycholinguistic studies of the cognitive processes involved. Second, it is important to clarify the role of priming, both lexical and structural, within the larger resonance cycle which links priming, reproduction, and resonance. This is a necessary prelude to a more general investigation of the impact of the resonance cycle on cognitive and linguistic processes such as analogy, transfer, learning, and grammaticization. Third, it is important to extend the scope of investigation to a broader sample of the world's languages. The need is great for detailed studies of dialogic syntax in individual languages, as well as for wide-ranging typological comparisons. A typological perspective is essential to gain insight into the relation between the structural affordances offered by a given grammar and the way language users mobilize them to construct and exploit the structure of engagement. The work is well begun with studies of dialogic syntax in English, German, Spanish, French, Japanese, Hebrew and Finnish (see §1), but this is indeed just the beginning.

Dialogic syntax pursues an inherently interdisciplinary approach. Bringing together ideas about parallelism, priming, analogy, resonance, dialogicality and more, dialogic syntax draws from linguistics, cognitive science, philosophy, literature, evolution, and complexity theory. But what, beyond an eclectic collection of concepts, makes dialogic syntax cohere? And what can it hope to offer that's new? What makes dialogic syntax unique is its commitment to provide a comprehensive account of what happens in the dialogic moment, and to explore what this means for language, cognition, and interaction. Dialogic syntax analyzes

how language users mobilize structure in the service of meaning, building a framework for engagement and bridging the gap between particularity and abstraction. By zeroing in on the act of engagement, and the combinatorial explosion of information about language it unleashes, dialogic syntax is poised to play a pivotal role in tracing out the widening ripples of influence. What begins in the dialogic moment expands its impact across multiple timescales, shaping not only the immediate situated meaning but the ongoing learning of language and, ultimately, the emerging structure of language itself.

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References

- Anttila, Raimo. 1977. *Analogy*. Berlin: Mouton.
- Anttila, Raimo. 2003. Analogy: The warp and woof of cognition. In Brian D. Joseph & Richard D. Janda (eds.), *The handbook of historical linguistics*, 423–440. Oxford: Blackwell.
- Anward, Jan. 2003. On recursivity: Clauses in a dialogical grammar of Swedish. In Lars-Olof Delsing, Cecilia Falk, Gunlög Josefsson & Halldór Sigurdsson (eds.), *Grammatik i fokus. Festschrift till Christer Platzack / Grammar in Focus. Festschrift for Christer Platzack. Vol. 2*, 17–23. Lund: Institutionen för nordiska språk.

- Anward, Jan. 2005. Lexeme recycled: How categories emerge from interaction. *Logos and language* 2, 31–46.
- Ariel, Mira. 2008. *Pragmatics and grammar*. Cambridge: Cambridge University Press.
- Ariel, Mira. 2010. *Defining pragmatics*. Cambridge: Cambridge University Press.
- Arnold, Lynnette. 2012. Dialogic embodied action: Using gesture to organize sequence and participation in instructional interaction. *Research on Language and Social Interaction* 45(3), 269–296.
- Attinasi, John & Paul Friedrich. 1995. Dialogic breakthrough: Catalysis and synthesis in life-changing dialogue. In Dennis Tedlock & Bruce Mannheim (eds.), *The dialogic emergence of culture*, 33–53. Urbana: University of Illinois Press.
- Bakhtin, Mikhail M. 1981 [1934]. *The dialogic imagination: Four essays by M. M. Bakhtin*. Austin, TX: University of Texas Press.
- Becker, Alton L. 1995. *Beyond translation: Essays toward a modern philology*. Ann Arbor, MI: University of Michigan Press.
- Bird, Steven & Mark Liberman. 2001. A formal framework for linguistic annotation. *Speech Communication* 33(1–2), 23–60.
- Blanche-Benveniste, Claire. 1990. Un modèle d'analyse syntaxique 'en grilles' pour les productions orales. *Anuario de Psicología* 47, 57–85.
- Blevins, James P. & Juliette Blevins (eds.). 2009. *Analogy in grammar: Form and acquisition*. Oxford: Oxford University Press.
- Bock, J. Kathryn. 1986. Syntactic persistence in language production. *Cognitive Psychology* 18(3), 355–387.
- Bock, J. Kathryn & Z. M. Griffin. 2000. The persistence of structural priming: Transient activation or implicit learning? *Journal of Experimental Psychology: General* 129(2), 177–192.
- Bod, Rens. 1998. *Beyond grammar: an experience-based theory of language*. Stanford, CA: CSLI Publications.
- Bolinger, Dwight L. 1961. Contrastive accent and contrastive stress. *Language* 37(1), 83–96.
- Branigan, Holly, Martin J. Pickering & Alexandra A. Cleland. 2000. Syntactic co-ordination in dialogue. *Cognition* 75(B), 813–825.
- Brennan, Susan E. & Herbert H. Clark. 1996. Conceptual pacts and lexical choice in conversation. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 22(6), 1482–1493.
- Brône, Geert & Elisabeth Zima. This issue. Towards a dialogic construction grammar: *Ad hoc* routines and resonance activation.
- Bybee, Joan L. 2006. From usage to grammar: The mind's response to repetition. *Language* 82(4), 711–733.
- Bybee, Joan L. 2007. *Frequency of use and the organization of language*. Oxford: Oxford University Press.
- Chafe, Wallace L. 1970. *Meaning and the structure of language*. Chicago: University of Chicago Press.
- Chafe, Wallace L. 1976. Givenness, contrastiveness, definiteness, subjects, topics, and point of view. In Charles N. Li (ed.), *Subject and topic*, 25–55. New York: Academic Press.
- Chafe, Wallace L. 1994. *Discourse, consciousness, and time: The flow and displacement of conscious experience in speaking and writing*. Chicago: University of Chicago Press.
- Clancy, Patricia M. 1996. Referential strategies and the co-construction of argument structure in Korean acquisition. In Barbara Fox (ed.), *Studies in anaphora*, 33–68. Amsterdam: Benjamins.

- Clancy, Patricia M. 2003. The lexicon in interaction: developmental origins of Preferred Argument Structure. In John W. Du Bois, Lorraine E. Kumpf & William J. Ashby (eds.), *Preferred Argument Structure: grammar as architecture for function*, 81–108. Amsterdam: Benjamins.
- Clancy, Patricia M. 2009. Dialogic priming and the acquisition of argument marking in Korean. In Jiansheng Guo, Elena Lieven, Nancy Budwig, Susan M. Ervin-Tripp, Keiko Nakamura & Seyda Özçalışkan (eds.), *Crosslinguistic approaches to the psychology of language: Research in the tradition of Dan Isaac Slobin*, 105–117. Hillsdale, NJ: Erlbaum.
- Clark, Herbert H. 1996. *Using language*. Cambridge: Cambridge University Press.
- Couper-Kuhlen, Elizabeth, Barbara A. Fox & Sandra A. Thompson. Forthcoming. Forms of dialogism: Grammatical formats for responsive actions. In Susanne Günthner, Wolfgang Imo & Jörg Bücker (eds.), *Grammar and dialogism*. Berlin: Mouton.
- Cutler, Anne. 2012. *Native listening: Language experience and the recognition of spoken words*. Cambridge, MA: MIT Press.
- De Jaegher, Hanne, Ezequiel Di Paolo & Shaun Gallagher. 2010. Can social interaction constitute social cognition? *Trends in Cognitive Sciences* 14(10), 441–447.
- Deacon, Terrence W. 2011. *Incomplete nature: How mind emerged from matter*. New York: Norton.
- Du Bois, John W. 2003. Discourse and grammar. In Michael Tomasello (ed.), *The new psychology of language: Cognitive and functional approaches to language structure, vol. 2*, 47–87. Mahwah, NJ: Erlbaum.
- Du Bois, John W. 2007. The stance triangle. In Robert Englebretson (ed.), *Stancetaking in discourse: Subjectivity, evaluation, interaction*, 139–182. Amsterdam: Benjamins.
- Du Bois, John W. 2009. Interior dialogues: The co-voicing of ritual in solitude. In Senft, Gunter & Ellen B. Basso (eds.), *Ritual communication*, 317–340. Oxford: Berg.
- Du Bois, John W. 2011. Co-opting intersubjectivity: Dialogic rhetoric of the self. In Christian Meyer & Felix Girke (eds.), *The rhetorical emergence of culture*, 52–83. Oxford: Berghahn.
- Du Bois, John W. 2013. Representing discourse. MS, *Linguistics Department, University of California, Santa Barbara*. Santa Barbara.
- Du Bois, John W. 2014. Motivating competitions. In Brian MacWhinney, Andrej L. Malchukov & Edith Moravcsik (eds.), *Competing motivations in grammar and usage*, 263–281. Oxford: Oxford University Press.
- Du Bois, John W. In progress. Reasons to resonate: Cognitive and interactional affordances of dialogic syntax.
- Du Bois, John W., Wallace L. Chafe, Charles Meyer, Sandra A. Thompson, Robert Englebretson & Nii Martey. 2000–2005. *Santa Barbara corpus of spoken American English, Parts 1–4*. Philadelphia: Linguistic Data Consortium.
- Du Bois, John W., R. Peter Hobson & Jessica A. Hobson. This issue. Dialogic resonance and intersubjective engagement in autism.
- Du Bois, John W., Lorraine E. Kumpf & William J. Ashby (eds.). 2003. *Preferred Argument Structure: Grammar as architecture for function*. Amsterdam: Benjamins.
- Du Bois, John W., Stephan Schuetze-Coburn, Susanna Cumming & Danae Paolino. 1993. Outline of discourse transcription. In Jane A. Edwards & Martin D. Lampert (eds.), *Talking data: Transcription and coding in discourse research*, 45–89. Hillsdale, NJ: Erlbaum.
- Edelman, Shimon. 2008. *Computing the mind*. Oxford: Oxford University Press.
- Edelman, Shimon. 2009. On look-ahead in language: Navigating a multitude of familiar paths. In Moshe Bar (ed.), *Predictions in the brain: Using our past to generate a future*, 170–189. Oxford: Oxford University Press.

- Fauconnier, Gilles. 1997. *Mappings in thought and language*. Cambridge: Cambridge University Press.
- Friedrich, Paul. 1997. Dialogue in lyric narrative. In Michael Macovski (ed.), *Dialogue and critical discourse: Language, culture, critical theory*, 79–98. Oxford: Oxford University Press.
- Fuchs, Thomas & Hanne De Jaegher. 2009. Enactive intersubjectivity: Participatory sense-making and mutual incorporation. *Phenomenology and the Cognitive Sciences* 8(4), 465–486.
- Garrod, Sanford & Martin J. Pickering. 2004. Why is conversation so easy? *Trends in cognitive science* 8(1), 8–11.
- Gentner, Dedre. 1983. Structure-mapping: A theoretical framework for analogy. *Cognitive Science* 7(2), 155–170.
- Gentner, Dedre. 2003. Why we're so smart. In Dedre Gentner & Susan Goldin-Meadow (eds.), *Language in mind: Advances in the study of language and thought*, 195–235. Cambridge, MA: MIT Press.
- Gentner, Dedre & Stella Christie. 2010. Mutual bootstrapping between language and analogical processing. *Language and Cognition* 2(2), 261–283.
- Gentner, Dedre, Keith J. Holyoak & Boicho N. Kokinov (eds.). 2001. *The analogical mind: Perspectives from cognitive science*. Cambridge MA: MIT Press.
- Gentner, Dedre & Arthur Markman. 1997. Structure mapping in analogy and similarity. *American Psychologist* 52(1), 45–56.
- Gentner, Dedre & J. Medina. 1997. Comparison and the development of cognition and language. *Cognitive Studies* 4(1), 112–149.
- Gibson, James J. 1979. *The ecological approach to visual perception*. Boston: Houghton Mifflin.
- Giles, Howard, Nikolas Coupland & J. Coupland. 1991. Accommodation theory: Communication, context, and consequence. In Howard Giles, J. Coupland & Nikolas Coupland (eds.), *Contexts of accommodation*, 1–68. Cambridge: Cambridge University Press.
- Ginzburg, Jonathan. 2012. *The interactive stance: Meaning for conversation*. Oxford: Oxford University Press.
- Giora, Rachel. 2003. *On our mind: Saliency, context, and figurative language*. Oxford: Oxford University Press.
- Giora, Rachel, Ofer Fein & Tamir Schwartz. 1998. Irony: Graded saliency and indirect negation. *Metaphor and symbol* 13(2), 83–100.
- Giora, Rachel, Moshe Raphaely, Ofer Fein & Elad Livnat. This issue. Resonating with contextually inappropriate interpretations in production: The case of irony.
- Givón, Talmy. 1979. *On understanding grammar*. New York: Academic Press.
- Goldberg, Adele E. 1995. *Constructions: A construction grammar approach to argument structure*. Chicago: University of Chicago Press.
- Goldberg, Adele E. 2004. Pragmatics and argument structure. In Laurence R. Horn & Gregory Ward (eds.), *The handbook of pragmatics*, 427–441. Oxford: Blackwell.
- Goldberg, Adele E. 2006. *Constructions at work: The nature of generalization in language*. Oxford: Oxford University Press.
- Goodwin, Marjorie Harness. 1990. *He-said-she-said: Talk as social organization among Black children*. Bloomington: Indiana University Press.
- Gries, Stefan T. 2005. Syntactic priming: A corpus-based approach. *Journal of Psycholinguistic Research* 34(4), 365–399.
- Gross, Jonathan & Jay Yellen. 1999. *Graph theory and its applications*. Boca Raton: CRC.

- Günthner, Susanne. 1999. Polyphony and the “layering of voices” in reported dialogues: An analysis of the use of prosodic devices in everyday reported speech. *Journal of Pragmatics* 31(5), 685–708.
- Günthner, Susanne, Wolfgang Imo & Jörg Bücker (eds.). 2014. *Grammar and dialogism*. Berlin: Mouton de Gruyter.
- Haddington, Pentti. 2006. The organization of gaze and assessments as resources for stance taking. *Text and Talk* 26(3), 281–328.
- Haddington, Pentti. 2007. Positioning and alignment as activities of stancetaking in news interviews. In Robert Englebretson (ed.), *Stancetaking in discourse: Subjectivity, evaluation, interaction*, 283–317. Amsterdam: Benjamins.
- Haiman, John. 1998. *Talk is cheap: Sarcasm, alienation, and the evolution of language*. Oxford: Oxford University Press.
- Halliday, Michael A. K. & Ruqaiya Hasan. 1976. *Cohesion in English*. London: Longman.
- Hare, M.L. & Adele E. Goldberg. 2000. Structural priming: Purely syntactic? In M. Hahn & S.C. Stones (eds.), *Proceedings of the Twenty-First Annual Meeting of the Cognitive Science Society*, 208–211. Mahwah, NJ: Erlbaum.
- Harris, Zellig S. 1946. From morpheme to utterance. *Language* 22(3), 161–183.
- Harris, Zellig S. 1952a. Discourse analysis. *Language* 28(1), 1–30.
- Harris, Zellig S. 1952b. Discourse analysis: A sample text. *Language* 28(4), 474–494.
- Harris, Zellig S. 1957. Co-occurrence and transformation in linguistic structure. *Language* 33(3), 283–340.
- Harris, Zellig S. 1988. *Language and information*. New York: Columbia University Press.
- Harris, Zellig S. 1991. *A theory of language and information*. Oxford: Clarendon.
- Harris, Zellig S., Michael Gottfried, Thomas Ryckman, Paul Jr. Mattick, Anne Daladier, T.N. Harris & S. Harris. 1989. *The form of information in science: Analysis of an immunology sublanguage*. Dordrecht: Kluwer.
- Hobson, R. Peter, Jessica A. Hobson, Rosa M. García-Pérez & John W. Du Bois. 2012. Dialogic linkage and resonance in autism. *Journal of Autism and Developmental Disorders* 42(12), 2718–2728.
- Hoey, Michael. 2012. Lexical priming. *The encyclopedia of applied linguistics*.
- Hollan, Douglas, Edwin Hutchins & David Kirsh. 2000. Distributed cognition: Toward a new foundation for human-computer interaction research. *ACM Transactions on Computer-Human Interaction* 7(2), 174–196.
- Huddleston, Rodney & Geoffrey Pullum. 2002. *The Cambridge grammar of the English language*. Cambridge: Cambridge University Press.
- Hudson, Richard A. 2007. *Language networks: The new word grammar*. Cambridge: Cambridge University Press.
- Hummel, John E. & Keith J. Holyoak. 1997. Distributed representations of structure: A theory of analogical access and mapping. *Psychological Review* 104(3), 427–466.
- Hutchins, Edwin. 1995. *Cognition in the wild*. Cambridge, MA: MIT Press.
- Hutchins, Edwin. 2006. The distributed cognition perspective on human interaction. In Nicholas Enfield & Stephen C. Levinson (eds.), *Roots of human sociality: Culture, cognition and human interaction*, 375–398. Oxford: Berg.
- Itkonen, Esa. 2003. *What is language? A study in the philosophy of linguistics*. Turku: University of Turku.
- Itkonen, Esa. 2005. *Analogy as structure and process*. Amsterdam: Benjamins.

- Jakobson, Roman. 1966. Grammatical parallelism and its Russian facet. *Language* 42(2), 399–429.
- Jakobson, Roman. 1990. *On language*. Cambridge, MA: Harvard University Press.
- Joaquin, Anna Dina L. 2005. *How we do dialogic interaction: Some possible biological and ontogenetic precursors for Resonance*. M.A. Thesis, UCLA.
- Johnstone, Barbara (ed.). 1994. *Repetition in discourse: interdisciplinary perspectives*. Norwood, NJ: Ablex.
- Kärkkäinen, Elise. 2006. Stance taking in conversation: From subjectivity to intersubjectivity. *Text and Talk* 26(6), 699–731.
- Keenan, Elinor Ochs. 1977. Making it last: Repetition in children's discourse. In Susan Ervin-Tripp & Claudia Mitchell-Kernan (eds.), *Child discourse*, 125–138. New York: Academic Press.
- Kehler, Andrew & Gregory Ward. 2004. Constraints on ellipsis and event reference. In Laurence R. Horn & Gregory Ward (eds.), *The handbook of pragmatics*, 383–403. Oxford: Blackwell.
- Kotthoff, Helga. 2002. Irony, quotation, and other forms of staged intertextuality: Double or contrastive perspectivation in conversation. In Carl F. Graumann & Werner Kallmeyer (eds.), *Perspectivation in discourse*, 201–229. Amsterdam: Benjamins.
- Köymen, S. Bahar & Amy Kyratzis. This issue. "I said 'I don't want him do it'": Dialogic syntax and complement constructions in toddlers' peer interactions.
- Küntay, Aylin & Dan I. Slobin. 1996. Listening to a Turkish mother: Some puzzles for acquisition. In Dan I. Slobin, Julie Gerhardt, Amy Kyratzis & Jiansheng Guo (eds.), *Social interaction, social context, and language*, 265–286. Mahwah, NJ: Erlbaum.
- Lambrecht, Knud. 1994. *Information structure and sentence form: Topic, focus, and the mental representations of discourse referents*. Cambridge: Cambridge University Press.
- Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar, vol. 1: Theoretical prerequisites*. Stanford, CA: Stanford University Press.
- Langacker, Ronald W. 2001. Discourse in Cognitive Grammar. *Cognitive Linguistics* 12(2), 143–188.
- Laury, Ritva. 2012. Taking a stance and getting on with it: The form and function of the Finnish finite clausal extraposition construction. *Text and Talk* 32(4), 503–524.
- Lempert, Michael. 2008. The poetics of stance: Text-metricity, epistemicity, interaction. *Language in Society* 37(4), 569–592.
- Lerner, Gene H. 1996. On the "semi-permeable" character of grammatical units in conversation: Conditional entry into the turn space of another speaker. In Elinor Ochs, Emanuel A. Schegloff & Sandra A. Thompson (eds.), *Interaction and grammar*, 238–276. Cambridge: Cambridge University Press.
- Levelt, Willem J. M. & Kelter, Stephanie. 1982. Surface form and memory in question answering. *Cognitive Psychology* 14(1), 78–106.
- Linell, Per. 2009. *Rethinking language, mind, and world dialogically: Interactional and contextual theories of human sense-making*. Charlotte, NC: Information Age Publishing.
- Lowth, Robert. 1815 [1753]. *Lectures on the sacred poetry of the Hebrews*. Boston: Joseph T. Buckingham.
- MacWhinney, Brian (ed.). 1999. *The emergence of language*. Mahwah, NJ: Erlbaum.
- Marcus, Mitchell P., Beatrice Santorini & Mary Ann Marcinkiewicz. 1993. Building a large annotated corpus of English: the Penn Treebank. *Computational Linguistics* 19(2), 313–330.
- Martin, Andrea E. & Brian McElree. 2008. A content-addressable pointer mechanism underlies comprehension of verb-phrase ellipsis. *Journal of Memory and Language* 58, 879–906.

- Maschler, Yael & Bracha Nir. This issue. Complementation in linear and dialogic syntax: The case of Hebrew divergently aligned discourse.
- Mayr, Ernst. 1982. *The growth of biological thought: Diversity, evolution and inheritance*. Cambridge, MA: Harvard University Press.
- McCawley, James D. 1998. *The syntactic phenomena of English*. Chicago: University of Chicago Press.
- Medin, Douglas L., Robert L. Goldstone & Dedre Gentner. 1993. Respects for similarity. *Psychological Review* 100(2), 254–278.
- Morris, Charles W. 1938. *Foundations of the theory of signs*. Chicago: University of Chicago Press.
- Neely, James H. 1991. Semantic priming effects in visual word recognition: A selective review of current findings and theories. In Derek Besner & Glyn W. Humphreys (eds.), *Basic processes in reading: Visual word recognition*, 264–323. Hillsdale, NJ: Erlbaum.
- Nelson, Gerald, Sean Wallis & Bas Aarts (eds.). 2002. *Exploring natural language: Working with the British component of the International Corpus of English*. Amsterdam: Benjamins.
- Nir, Bracha, Gonen Dori-Hacohen & Yael Maschler. 2014. Formulations on Israeli political talk radio: From actions and sequences to stance via dialogic resonance. *Discourse Studies* 16(2).
- Norman, William M. 1980. Grammatical parallelism in Quiché ritual language. *Berkeley Linguistics Society* 6, 387–399.
- Onnis, Luca, Heidi R. Waterfall & Gerald M. Edelman. 2008. Learn locally, act globally: Learning language from variation set cues. *Cognition* 109(3), 423–430.
- Oropeza-Escobar, Minerva. 2011. *Represented discourse, resonance and stance in joking interaction in Mexican Spanish*. Amsterdam: Benjamins.
- Pawley, Andrew & Frances Syder. 1983. Natural selection in syntax: Notes on adaptive variation and change in vernacular and literary grammar. *Journal of Pragmatics* 7, 551–579.
- Peirce, Charles Sanders. 1933 [1885]. Three kinds of signs. In Charles Hartshorne & Paul Weiss (eds.), *Collected papers of Charles Sanders Peirce, Volume 3*, 210–214. Cambridge, MA: Harvard University Press.
- Peirce, Charles Sanders. 1931–1958. *Collected papers of Charles Sanders Peirce*. Cambridge, MA: Harvard University Press.
- Pickering, Martin J. & Victor S. Ferreira. 2008. Structural priming: A critical review. *Psychological Bulletin* 134(3), 427–459.
- Plett, Heinrich F. (ed.). 1991. *Intertextuality*. Berlin: Mouton de Gruyter.
- Pomerantz, Anita M. 1978. Compliment responses: Notes on the co-operation of multiple constraints. In Jim Schenkein (ed.), *Studies in the organization of conversational interaction*, 79–98. London: Academic Press.
- Putnam, Hilary. 1989. Preface. In Zellig S. Harris, Michael Gottfried, Thomas Ryckman, Paul Jr. Mattick, Anne Daladeier, T.N. Harris & S. Harris (eds.), *The form of information in science: Analysis of an immunology sublanguage*, xi–xiv. Dordrecht: Kluwer.
- Raymond, Geoffrey. 2003. Grammar and social organization: Yes/no interrogatives and the structure of responding. *American Sociological Review* 68(6), 939–967.
- Roberts, Leah, Ayumi Matsuo & Nigel Duffield. 2013. Processing VP-ellipsis and VP-anaphora with structurally parallel and nonparallel antecedents: An eye-tracking study. *Language and Cognitive Processes* 28(1–2), 29–47.
- Rubin, David C. 1995. *Memory in oral traditions: The cognitive psychology of epic, ballads, and counting-out rhymes*. Oxford: Oxford University Press.

- Sag, Ivan A. 2012. Sign-Based Construction Grammar: An informal synopsis. In Hans C. Boas & Ivan A. Sag (eds.), *Sign-Based Construction Grammar*, 61–188. Stanford: Center for the Study of Language and Information.
- Sag, Ivan A. & Jorge Hankamer. 1984. Towards a theory of anaphoric processing. *Linguistics and Philosophy* 7(3), 325–345.
- Sakita, Tomoko I. 2006. Parallelism in conversation: Resonance, schematization, and extension from the perspective of dialogic syntax and cognitive linguistics. *Pragmatics and Cognition* 14(3), 467–500.
- Sakita, Tomoko I. 2008. A cognitive basis of conversation: Alignment through resonance. In Kazuhiro Kodama & Tetsuharu Koyama (eds.), *Linguistic and cognitive mechanisms: Festschrift for Professor Masa-aki Yamanashi on the occasion of his sixtieth birthday*, 621–633. Tokyo: Hitsuji.
- Sakita, Tomoko I. 2013. Discourse markers as stance markers: *Well* in stance alignment in conversational interaction. *Pragmatics & Cognition* 21(1), 81–116.
- Saussure, Ferdinand de. 1916. *Cours de linguistique générale*. Paris: Payot.
- Silverstein, Michael. 1984. On the pragmatic ‘poetry’ of prose: Parallelism, repetition and cohesive structure in the time course of dyadic conversation. In Deborah Schiffrin (ed.), *Meaning, form and use in context: Linguistic applications*, 181–199. Washington, DC: Georgetown University Press.
- Siromaa, Maarit. 2012. Resonance in conversational second stories: A dialogic resource for stancetaking. *Text and Talk* 32(4), 525–545.
- Solan, Zach, David Horn, Eytan Ruppim & Shimon Edelman. 2005. Unsupervised learning of natural languages. *PNAS* 102(33), 11629–11634.
- Steedman, Mark. 2000. *The syntactic process*. Cambridge, MA: MIT Press.
- Stephens, Greg J., Lauren J. Silbert & Uri Hasson. 2010. Speaker-listener neural coupling underlies successful communication. *Proceedings of the National Academy of Sciences* 107(32), 14425–14430.
- Takanashi, Hiroko. 2011. Complementary stylistic resonance in Japanese play framing. *Pragmatics* 22(2), 231–264.
- Tannen, Deborah. 1987. Repetition in conversation: Towards a poetics of talk. *Language* 63(3), 574–605.
- Taylor, Ann, Mitchell P. Marcus & Beatrice Santorini. 2003. The Penn Treebank: An overview. In Ann Abeillé (ed.), *Treebanks: Building and using parsed corpora*, 5–22. Dordrecht: Kluwer.
- Tedlock, Dennis & Bruce Mannheim. 1995. *The dialogic emergence of culture*. Urbana: University of Illinois Press.
- Thompson, Sandra A., Elizabeth Couper-Kuhlen & Barbara A. Fox. Forthcoming. *Grammar and everyday talk: Building responsive actions*. Cambridge: Cambridge University Press.
- Varela, Francisco J., Evan Thompson & Eleanor Rosch. 1991. *The embodied mind: Cognitive science and human experience*. Cambridge, MA: MIT Press.
- Voloshinov, Valentin Nikolaevich. 1973 [1929]. *Marxism and the philosophy of language*. New York: Seminar Press.
- Voloshinov, Valentin Nikolaevich. 2010. *Marxisme et philosophie du langage: Les problèmes fondamentaux de la méthode sociologique dans la science du langage*. Limoges: Lambert-Lucas.
- Waterfall, Heidi R., Ben Sandbank, Luca Onnis & Shimon Edelman. 2010. An empirical generative framework for computational modeling of language acquisition. *Journal of Child Language* 37(3), 671–703.

- Wedel, Andrew. 2006. Exemplar models, evolution and language change. *Linguistic Review* 23(3), 247–274.
- Weiner, E. Judith & William Labov. 1983. Constraints on the agentless passive. *Linguistics* 19(1), 29–58.
- Wertsch, James V. 1998. *Mind as action*. Oxford: Oxford University Press.
- Zima, Elisabeth. 2013a. Cognitive Grammar and Dialogic Syntax: Exploring potential synergies. *Review of Cognitive Linguistics* 11(1), 36–72.
- Zima, Elisabeth. 2013b. *Kognition in der Interaktion: Eine kognitiv-linguistische und gesprächsanalytische Studie dialogischer Resonanz in österreichischen Parlamentsdebatten*. Heidelberg: Universitätsverlag Winter.
- Zima, Elisabeth, Geert Brône & Kurt Feyaerts. 2010. Patterns of interaction in Austrian parliamentary debates: On the pragmasemantics of unauthorized interruptive comments. In Cornelia Ilie (ed.), *European parliaments under scrutiny: Discourse strategies and interaction practices*, 135–164. Amsterdam: Benjamins.
- Zima, Elisabeth, Geert Brône, Kurt Feyaerts & Paul Sambre. 2009. “Ce n’est pas très beau ce que vous avez dit”: Resonance activation in French parliamentary debates. *Discours* 4, 1–17.