

Jonathan Ginzburg. 2012. *The Interactive Stance*. Oxford: Oxford University Press. Pp. xii + 432. ISBN: 978-0199697922.

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The entry “Philosophy of linguistics” in *The Stanford Encyclopaedia of Philosophy* (Scholz et al. 2011) distinguishes three main approaches to linguistic theorizing as regards focus of interest, methods of approaching the phenomena and what would count as their explanation. Externalism, an empirically oriented approach, takes as the main goal of a linguistic theory the development of detailed models of the structural properties of linguistic elements by systematising and analysing actually occurring data, in the form of, for instance, corpora. Emergentism takes as the basis for linguistic capacities general cognitive abilities or the effects of social mechanisms. Essentialism, the approach most closely associated with Chomskyan versions of Generative Grammar, aims to identify the intrinsic, usually idiosyncratic, properties of natural language (NL) that distinguish it from other cognitive/social systems. Much like a few recent approaches to grammar, semantics and pragmatics, *The Interactive Stance (IS)* belies this neat classification, which has been the prevalent position on what separates researchers in the field of Linguistics in the last fifty years (even though, as Scholz et al. state, there are no *logical* impediments for a researcher taking one approach to simultaneously pursue another).

As would befit an externalist researcher, *IS*'s author, Jonathan Ginzburg, has been a pioneer in the attempt to integrate the analysis of conversational data into a formal, computationally viable model that takes as its basis evidence provided by corpora of real conversations, experimental results or computer simulations. Given the precision and detail of the methodology, impressively, the topics tackled in *IS* range from the formalisation of sub-sentential dialogue processing issues, e.g. self-repair, to the modelling of various conversational moves, scaling up to the formalisation of notions such as “relevance”/coherence, indirect speech-acts, multi-party conversation and the characterisation of distinct conversational genres. However, as in emergentist approaches, *IS* aims to embed the theory of conversation in a general theory of interaction and considers the two-way feeding relation between the social and the cognitive. *IS* also offers one major intellectual contribution to essentialist accounts of NL, as Ginzburg challenges standard views that limit the remit of grammar to the description of decontextualised combinatorial properties of linguistic elements and neglect the value of spoken language as the input for language acquisition. Instead, it is argued that necessary and constitutive features of NLs can be derived from seeing them as systems embedded in interaction.

As regards content, Chapters 1, 2 and 9 of *IS* are an ideal, self-contained starting point for those readers interested in a quick survey of the ideas developed. A lot of the technical detail is confined to three appendices at the end of the book; still, the abstract presentation of the formalism within the chapters remains, perhaps inevitably, hard going. Each chapter includes a summary section and a significant number of exercises. Importantly, a list of acronyms is added, which is valuable given the (necessary) use of a large number of abbreviations throughout.

The book starts with an introduction, Chapter 1 (“Interaction, Grammar, and the Behavioural Sciences”) presenting the general philosophy that permeates the approach. Standard essentialist approaches have taken the view that the main function of NL is in structuring thought rather than communication, social interaction or social cognition (Chomsky 1980). This view, the “language-as-product” approach, focuses on individualistic, internal bases of knowledge, representation and processing in the mind/brain of a single individual independently of context. *IS* seeks to take advantage of the insights of an alternative approach, inspired by the “language-as-action” tradition, as advocated by psycholinguists like Herbert Clark (Clark 1996) and various emergentist views. Accordingly, *IS* takes language use in dialogue as primary and, in an essentialist spirit, builds on this insight to extract fundamental, constitutive properties of NL in all its uses. This new perspective requires the development of new tools and the reconceptualisation of many standard phenomena since dialogue is *not* reducible to a sequence of messages delivered and processed serially in sentential/propositional chunks by speakers and hearers in turn. Instead, in conversation, the shape as well as the interpretation of utterances are contingent upon one another and on the extra-linguistic context. Even though many non-emergentist views will see this radical context dependency of form

and interpretation as an issue for pragmatics or psycholinguistics to untangle, *IS* pushes such issues directly into the heart of the grammar itself.

Even though the *IS* approach is, in fact, rather conservative in that there is no radical break with the formal syntax/semantics tradition, due to the data that is handled, *IS* ends up challenging essentialist views of grammar as a decontextualised combinatorial system: Ginzburg's argumentation, supported by corpus evidence and intuitive judgements, shows that NLs include expressions whose *conventional* meaning requires reference to interaction (*Yes*, *No*, *Mmh*, *Bye*, etc.) as well as constructions with conventionalised (meta)communicative functions such as clarifications, corrections, etc. One particular case study that is the focus of *IS* are non-sentential utterances, NSUs; these are elliptical constructions which lack a main predicative element (e.g. *why* in (1) below). Since as it's shown, these elements, i.e., constructions and words with interaction-oriented meanings and NSUs, require proper syntactic/semantic licensing, *IS* argues that, in order to provide adequate coverage, the grammar needs to be seen in a continuum with a theory of interaction; in particular, it is argued, that a theory modelling the resolution of NSUs requires that the grammar integrates context as one of its dimensions.

Accordingly, in Chapter 2 ("From Communitarian to Interactive Semantics"), *IS* adopts the dynamic-semantics approach, where meanings are taken as mappings from context to context. However, Ginzburg criticises orthodox formal semantic approaches, which he dubs "Communitarian Semantics". Firstly, such approaches cannot handle partial understanding, miscommunication or meta-communication, illustrated, for example, by the function of the interrogative in B's utterance in (1). A second disadvantage of Communitarian Semantics is claimed to be its failure to take into account speaker/addressee asymmetries with respect to context. For example, the interpretations available for an elliptical *why*-question are distinct depending on whether the original speaker keeps the turn or not (such phenomena are dubbed "turn-taking puzzles"). According to Ginzburg, this shows that contexts are differentially structured for the two interlocutors:

- (1) A: Which members of our team own a parakeet?
 B: *Why?* (= 'Why are you asking which members of our team own a parakeet?')
- (2) A: Which members of our team own a parakeet?
 A: *Why?* (a) can mean: 'Why own a parakeet?'
 (b) cannot mean: #¹ 'Why am asking this?'

For these reasons, the alternative developed here, Interactive Semantics, crucially integrates a model (dubbed "KoS"), involving richly structured representations of context which are indexed as to which participant's view, the speaker's or hearer's they represent. These contexts, or "information states", contain both a private and a public component, the latter dubbed the "Dialogue Gameboard" (DGB). *IS* is mainly concerned with the DGB and this is modelled as a data structure consisting of attribute-value pairs. It includes, firstly, the attribute FACTS, which is a set of the mutually-known propositions constituting the usual notions of "common ground". More innovatively, context representations also include the attribute QUD (questions under discussion, a notion of topichood) which is a set, partially ordered by a precedence relation (<), of the current issues that the participants are discussing. The attribute MAX-QUD has as its value the most highly-ordered question in the set of QUDs whereas LATEST-MOVE, simplifying somewhat, records the most recent speech act that has occurred, for example:

- (3)

FACTS	:	set of facts {f ₁ , f ₂ ,...}
QUD	:	set of questions {q ₁ , q ₂ ,...}
MAX-QUD	:	question {q ₁ }
LATEST-MOVE	:	ask(speaker, hearer, q ₁)
...	:	...

¹ The symbol # in front of an utterance/interpretation indicates pragmatic unacceptability.

As *IS* is concerned with developing a theory of meaning for conversation, Chapter 3 (“A Semantic Ontology for Dialogue”) introduces the semantic ontology that underpins the model. The ontology that is intended to link the external world, cognition, and NLS, originally introduced in Ginzburg & Sag (2000), has inherited the philosophical/semantic assumptions of work in Situation Semantics. Along with individuals and relations, the external world is assumed to include complex, structured objects, i.e. situations/events, which are entities more fine-grained than possible worlds thus more plausibly modelling the information that cognitive agents can acquire as they interact with the world. In addition, Ginzburg employs here derivative abstract entities including propositions, questions, facts and outcomes. These are used in order to provide contents for conversational moves expressed by declaratives, interrogatives imperatives, etc. For example, speech acts like querying and assertion both involve a *question* becoming maximal in the speaker’s or hearer’s QUD, a fact which is made use of in order to define the *coherence* of responses to such utterances and achieve the resolution of subsequent NSUs. First presented in Ginzburg & Sag (2000), an intuitive theory of questions as propositional lambda-abstracts is employed here too. A polar interrogative like *Did Bo leave?* will give rise to a 0-ary abstract, $?\lambda\{\}.Leave(Bo)$. More innovatively, an assertion like *Bo left* will also lead to the addition of $?\lambda\{\}.Leave(Bo)$ in QUD, in that the issue of Bo’s leaving has been raised for consideration. And *wh*-questions involve simultaneous abstraction over a set of restricted variables, e.g. $?\lambda\{x_{\text{person}}, y_{\text{person}}\}.Greet(x, y)$ for *Who greeted who?*

Instead of the HPSG framework employed in Ginzburg & Sag (2000), *IS* adopts the logical formalism Type Theory with Records (TTR) to construct models of the ontology and the grammar. TTR is a representation language that provides recursive data structures reminiscent both of HPSG type-feature structures and, semantically, of discourse representation structures (DRSs). Records are structured collections of statements (“fields”) consisting of assignments of entities to “labels”, the equivalent of discourse referents/variables in DRT:

$$(4) \quad r = \left[\begin{array}{lcl} x & = & \text{John} \\ \text{time} & = & \text{12AM_13_Oct_2012} \\ \text{place} & = & \text{London} \\ \text{sit} & = & s_1 \end{array} \right]$$

labels

a field

Such records can then be taken as representing actual events in the world, which, importantly, would include contexts of utterance and the actual speech events that take place within them. Such records (and therefore situations) are classified by types which are called *record types*. Innovatively and importantly, unlike the basic Montagovian types, record types are structured and recursive with dependencies allowed between the values assigned to the labels. A record r belongs to a type T iff each field in r satisfies the constraints specified by T . For example, as a simplified illustration, the record r in (4) is of the type T in (5) below (it is a *witness* for T) because r assigns entities to the labels that satisfy the type requirements specified by T . This means that the label x is assigned an entity of type IND(ividual), namely, John, the labels *place* and *time* are assigned entities that are places and times respectively and the situation s_1 is such that it is of a type that indeed contains evidence that John runs – perhaps it is an observation or some actual event of John’s running (this latter characterisation is related to Martin-Löf’s “propositions as types” idea, hence RUN(JOHN) is a type here):

$$(5) \quad T = \left[\begin{array}{lcl} x & : & \text{IND} \\ \text{time} & : & \text{TIME} \\ \text{place} & : & \text{PLACE} \\ \text{sit} & : & \text{RUN}(\text{JOHN}) \end{array} \right]$$

Types, which can be conceived as categorisations of events and entities, are what provides the interface between the external world and cognition; for example, record types, categorisations of situations, can represent perceptual judgements, meaning relations, grammatical information, speech act assignments, etc. In addition, in TTR, types are first-class citizens of the semantic ontology so that inference can be performed at the level of types, irreducibly *about* the types themselves, solving puzzles that traditionally have been encountered in intensional constructions such as the complements

of propositional attitude verbs. Moreover, because types are always modifiable by adding/deleting fields, the underspecification and subsequent enrichment that permeates type judgements during, e.g., language acquisition, knowledge adjustment, conversational coordination etc. are naturally handled. From a more technical point of view, because TTR, unlike HPSG, naturally allows dependencies between types and includes the full power of the lambda calculus with, in addition, multiple abstraction across any parameter, it is ideal for the expression of the semantic ontology, for example, for modelling multiple questions as abstracts.

By adopting TTR representations, Chapter 4 (“Basic Interaction in Dialogue”) develops KoS in that the structure of the (public) context, i.e. the DGB for each participant, is refined and supplemented with a model of how such contexts evolve during the conversation. The latter is achieved through the employment of conversational rules that define a range of specific speech acts, e.g. greetings, partings, asking, asserting, answering and accepting. These rules define both the preconditions and the effects involved in the achievement of such conversational moves: each move requires a specific structure of the context in order to be felicitous and it sets up a restricted set of options for follow-up. The necessary association of each utterance with an encoded speech-act specification might raise concerns here for reasons similar to the worries associated with the Performative Hypothesis in the seventies (see also the discussion of Chapters 7–8 below). Ginzburg & Sag (2000) have partially addressed such concerns and one basic intellectual contribution of *IS*, in my view, will be in taking it as an extended argument regarding how far this approach can be taken and whether or not it succeeds.

Chapter 5 (“A Grammar for Dialogue”), develops a grammar based on HPSG, but reformulated in TTR (HPSG_{TTR}). As expected from an HPSG-inspired model, the theory presented here aims at both comprehensive empirical coverage and precise, explicit analyses of all the phenomena it tackles. In this respect, the technical parts require considerable dedication on the part of the reader and, even though the presentation is in the form of a textbook, the analyses might not be accessible to those with no background in HPSG and formal semantics. In my view, Ginzburg & Sag’s *Interrogative investigations* (2000) is an indispensable companion for the comprehension of the formalism.

In Chapter 6, (“Grounding and CRification”), the grammar from Chapter 5 is extended to account for the metacommunicative function of certain utterances, in particular, clarification requests. As in Clark’s (1996) model, it is assumed that accounting for participant interaction requires a notion of “grounding”, i.e. an indication of the successful integration of an utterance’s content in the participants’ contextual representations. However, Ginzburg extends the grounding requirement along two dimensions. Firstly, grounding is not immediate; instead, it allows partially comprehended utterances to contribute to the context while ungrounded (parts of) utterances can remain as “pending” and lead to metacommunicative interaction (CRification) for their resolution. Secondly, it is not only content plus illocutionary force that are recorded in the participants’ context, but also a range of properties of the utterance that has occurred, e.g. syntactic/phonological information that would enable the disambiguation and resolution of utterances that function metacommunicatively. These extensions require that the grammar should be able to make reference to utterances as “speech events” specified along multiple dimensions. Records, as in (4) earlier, are employed to serve this role. (Partial) Grounding is then formalised through the pairing of a speech event with a (partial) utterance type, i.e., a grammatical type (a “sign”), that classifies it. Such signs are modelled as record types, as in (5) earlier. So here a major advantage of the use of TTR becomes evident: the grammar and the conversational mechanisms are provided with access to both types and tokens of utterances, which forms the basis for modelling certain metacommunicative functions of NL elements. For example, it is argued that the clarification request in (6a) below has a reading which queries which individual named “Bo” the speaker was referring to in the previous utterance (“intended content reading”), not who *Bo* refers to in general – which is also a possible reading, as can be seen more clearly in the “intended content reading” of the predicate in (6b). These readings also need to be disambiguated from other readings such as the “clausal confirmation” readings in (6c), and *IS* provides the means for modelling this:

- (6) a. A: Did Bo finagle a raise?
 B: (i) Bo? / (ii) finagle?
 b. *Intended content readings*: (i) ‘Who is (the) Bo (you’re referring to)?’ /

- (ii) ‘What does it mean to finagle?’
- c. *Clausal confirmation* readings: (i) ‘Are you asking if BO (of all people) finagled a raise?’ /
(ii) ‘Bo FINAGLED a raise (of all actions)?’

If the grammar and the model of the participants’ information states (KoS) allow for reference to actual utterance events, it becomes possible to explicitly model readings as in (6b) by assigning interpretations to the fragment *Bo* that match the intuitive paraphrase given involving reference to the specific speech event that has occurred, namely, A’s uttering *Bo*.

Chapter 7 (“Non-sentential Utterances in Conversation”) starts with a classification of non-sentential fragments (NSUs) found in the British National Corpus. For those fragments, the chapter develops grammatical analyses adopting a “constructionist” approach. That is, unlike essentialist approaches that seek generalisations across constructions that capture essential properties of NLs, the grammar developed here embraces idiosyncrasy and treats NSUs as “indexicals” by devising construction-specific stipulations that assign precise meanings to NSUs with various functions, namely, corrections, confirmations, acknowledgements, etc., as in the following *Bo/Jo* fragments:

- | | | | | |
|------|----|---|----|---|
| (7) | A: | Did Bo finagle a raise? | B: | <i>Bo</i> Let’s see, I can’t remember. |
| (8) | A: | And you saw Bo. | B: | <i>Bo</i> Yes, I remember it well. |
| (9) | A: | And you saw Bo. | B: | <i>Jo</i> . I said Jo. |
| (10) | A: | And I saw Bo going... <i>Bo?</i> <i>Jo</i> ... Who did I say? | B: | <i>Jo</i> . You said Jo. |
| (11) | A: | And you saw ... | B: | <i>Bo?</i> A: <i>Bo</i> , yes |
| (12) | A: | And you saw ... | B: | <i>Bo</i> . A: <i>Bo</i> , eh? |

Ginzburg criticises “unitarian” approaches that seek a single mechanism to account for such fragments. Instead, the analysis of NSUs developed here, in effect, grammaticalises context in order to specify full propositional paraphrases with explicit illocutionary specifications for the fragments (as shown in (1)–(2) and (6) above). However, as might already be discernible from (7)–(12) above, in my view, it is not absolutely clear that such fragmental utterances in conversation are amenable to definitive sentential/propositional paraphrases and it is perhaps even more doubtful that interlocutors perform such fine-grained disambiguations while participating in a conversation.

In this respect, even though the HPSG_{TR} model can deal with sub-sentential elements like all these fragments via mappings of morphological/syntactic/semantic and contextual specifications for each constituent, the traditional semantics/philosophical preoccupation with propositions still prevails in that IS has not embraced a fully incremental grammar, which, in my view, is what is needed for the proper handling of such phenomena, especially the *split utterances* in (11)–(12) above, in (17)–(18) below (see Gregoromichelaki et al. 2011) and self-repairs as in (10). The consequence of attempting to match data displaying incrementality without in fact giving sub-sentential licensing adequate status within the grammar is that any such fragment has to be matched with a propositional paraphrase. But, for example, it is not clear that, in (7), B’s utterance requires a sentential/propositional paraphrase rather than simply the ability of the grammar to assign *Bo* just an NP-syntax/semantics characterisation with the speaker uttering the fragment as a delaying device to give them the chance to prepare their response. Moreover, as can be seen from the split-utterance data presented (see e.g. (11)), syntactic/semantic/pragmatic specifications can come apart, in that, for example, syntactic/semantic continuity does not guarantee that the interlocutor takes over the intended illocutionary force or semantic content of the previous speaker (see Gregoromichelaki et al. 2011). Unless underspecification is allowed as an option in the processing of such fragments, the phenomena cannot be modelled in a natural way, i.e., as continuations of the previous speaker’s utterance. An argument against this view in IS, the fact that, in corpus analyses, annotators agree to a significant degree on such speech-act classifications, in my view, does not demonstrate that conversational participants conceptualise such specifications when processing in real time, unless meta-reasoning *about* the interaction is imposed by various factors. In this respect, here we have a classical tension between externalist vs. essentialist approaches in that, of course, it is true that a symbolic computationally-oriented approach needs to be able to assign such propositional specifications to participants’ actions in order to support the requisite inferencing and build implementable models. However, the viability of such modelling does not entail the psychological reality of such

descriptions. Instead, I believe that a more mechanistic treatment can be employed, for example, as in the treatment of assertion in *IS*, which is handled as introducing a question (issue) in QUD. On that view, it is not then necessary to also include an explicit illocutionary proposition in the contextual representation.

Chapter 8 (“Extensions”) extends the model presented in various directions. It is claimed that the conversational rules posited in earlier chapters can be extended to multi-party conversation with various modifications that account for the noted differences between dialogue and multilogue. The chapter also includes an attempt to simulate a truly incremental grammar (as, for instance, in Kempson et al. 2001) in order to deal with the phenomenon of self-repair (see (10) above). More generally, the *IS* model is enriched in order to account for various “pragmatic” phenomena, e.g. certain implicatures, indirect speech acts and the function of *why*-fragments. However, in my view, these extensions reveal the fragility of the “constructionist” approach; in particular, extending the model is taken to generate new “constructions” rather than revealing general properties of cognitive processing. But, in fact, most of the encoded speech-act effects that in *IS* are hardwired in the grammar can be achieved without prior linguistic antecedents:

- (13) [A is handing a brush to B:]
 B: What for? for painting the wall? [clarification (of A’s action)]
 (14) B [to A who is pointing at Harry]: Who? No, his sister [sluicing and correction]

When there are linguistic antecedents, the rules defined in *IS* for the resolution of NSUs like *What for?* and *Who?* critically make reference to “speech events”. However, for this reason, these rules will not be applicable to the resolution of the cases illustrated in (13)-(14) where no such speech events have occurred. One might imagine that a few trivial modifications will account for phenomena like (13)-(14) and some such modifications are attempted here in Chapter 8 with respect, for instance, to the postulation of a process of genre-recognition that will accommodate in QUD an appropriate proposition to serve as antecedent when no speech event is available. However, in my view, the generality of such “constructions”, i.e. the occurrence of such fragments with or without linguistic antecedents, undermines the general *IS* stance that the grammar requires the multiplicity of independent levels/vocabularies (syntax, semantics, context) assumed in HPSG_{TTR}, all linked via sentential/propositional mappings. Instead, such phenomena demonstrate the fact that the grammar has to be seen as an “unencapsulated” domain of knowledge interacting step-by-step, subsententially, with multi-modal input and not relying on propositional inferencing. Use of fragments during interaction displays linguistically-determined constraints indicating the fragment’s appropriate integration in some contextual, perhaps non-linguistically derived, representation. This is more evident in languages with rich morphology. For example, speakers can use fragments as in (15) to perform speech acts that do not presuppose the recovery of a full sentence. In morphologically rich languages such as German or Greek, the fragment needs to bear appropriate case specifications; otherwise it is perceived as ungrammatical:

- (15) Context: A and B enter a room and see a woman lying on the floor:
 A to B: *Schnell, den Arzt/*der Arzt* [German]
 ‘Quick, the_{ACC} doctor_{ACC} / *the_{NOM} doctor_{NOM}’

Now in these languages, fragments serving various dialogue functions also have to bear the appropriate morphological features, albeit with no linguistic antecedents:

- (16) [A is contemplating the space under the mirror while re-arranging the furniture and B brings her a chair]
 A to B: *tin karekla tis mamas? / *i karekla tis mamas? Ise treli?* [clarification] [Greek]
 ‘the_{ACC} chair_{ACC} of mum’s / *the_{NOM} chair_{NOM} of mum’s. Are you crazy?’

These data do not point to some underlying sentential syntactic structure (“sententialism”), as is also argued by Ginzburg for sluicing and short-answers (Ch. 7). However, in my view, the presence of grammatical constraints also does not justify a distinct level of representation for linguistically-

determined underlying propositional analyses as in *IS*. Rather, such data indicate that these grammatical constraints themselves have to be defined, more radically, in a continuum with pragmatic constraints on interaction. This presupposes a unified representation that integrates input from various modalities (as argued, for instance, within Dynamic Syntax; see Gregoromichelaki et al. 2011 and some emergentist approaches).

The lack of generality that affects the *IS* constructionist approach may undermine some of its foundational assumptions as well. For example, turn-taking puzzles were presented as a diagnostic for the differential structure of each participant's context, as seen earlier in (1)–(2). However, when the same test is applied to split-utterances occurring in a multi-party conversation, it appears that distinct empirical results are obtained: given a split-utterance with the force of asking a question but co-constructed by two speakers, the possible interpretations of a subsequent *why*-fragment depend, not on the most recent speaker, but on the participant who can be taken as the agent of the speech act performed, which might be a role distinct from the notion of “speaker” tracked by indexical pronouns like *I* and *my*:²

- (17) A to C: Have you finished sharpening ...
 B to C/A: *my* loppers?
 B to A: *Why?* (a) = ‘Why are you asking C whether C has finished sharpening my loppers?’
 A to B: Because I want her to sharpen my secateurs too.
- (18) A: Next cut it with *your* ...
 B: *my* loppers. *Why?* No, this we should cut with the secateurs
- (19) Child (playing with toy garden tools): Give me *my* . . .
 Mum: *your* secateurs. Here they are, in fact these are loppers.
- (20) [A pushes B] B: *Why?*

Along with the essentialists, I believe we would not want to say here that conversations among more than two participants require distinct assumptions with respect to how contextual representations are structured (notice that (18) is duologue). Instead, it seems to me that the resolution of such *why*-fragments tracks the participant who takes responsibility for the act performed (e.g. A and Child in both parts of the split-utterances in (17)–(18)), however many interlocutors interact and even if such an act has been co-achieved by multiple utterers. The lack of readings observed when only two participants interact is an artefact of the data presented in that the utterer/agent roles in those dialogues happen to coincide. The same mechanisms apply equally to multi-party conversations or even in cases which lack linguistic antecedents (as in (20)).

Ginzburg states that the success of *IS* in modelling the relevant phenomena indicates that reasoning at the DGB level has to be afforded a certain primacy with respect to reasoning about private intentions. Although I agree with the position that reasoning about private intentions is not essential, the approach here does remain within the confines of the cognitivist-internalist formal semantics/pragmatics tradition despite meticulously developing the tools (i.e. TTR representations), ideas and data that would support a more radical emergentist view. What seems to be at fault is the separation of the public from the private, syntax from semantics/pragmatics and, in general, the cognitive from the social. Nevertheless, *IS* presents valuable argumentation and data for its point of view and, in this chapter, we find dialogue-inspired answers to traditional puzzles, such as NP-meanings, anaphora and scope ambiguity, all reinforcing the need for a reformulation of compositionality to embrace use of utterances in interaction. Moreover, developmental evidence concerning the unequal emergence of various NSU-constructions during acquisition is presented. This differential emergence is then correlated with the complexity of the NSU analyses presented in the previous chapters. These data and arguments have to be seriously examined and addressed by any holistic emergentist account.

Finally, Chapter 9 (“An Interaction-oriented Theory of Meaning”) provides a welcome non-technical synopsis of the results and the general conclusions drawn.

² Data that might indicate similar results were also noted in Ginzburg (1998) but were viewed as leading to distinct conclusions.

In general, *IS* presents a major contribution to linguistic theorising both in terms of the data handled and the overall theoretical/technical innovations suggested. According to my take, it can also be taken as one of the few recent first steps that promise to reconcile the three Es, externalism, emergentism, essentialism: As befits an externalist, computationally oriented approach, *IS* is admirable for the precision, explicitness and detail of the analyses presented. *IS* takes seriously an emergentist preoccupation, the interface of the cognitive and the social, and attempts to integrate them, however one might disagree or not with the precise method that it achieves this. The writing style, tone and attitude of the author is open-minded in comparison to other approaches, thus displaying intellectual honesty and restraint in avoiding making grand claims as regards the results achieved. Even though the externalist tendency of remaining too close to the data might provoke certain essentialist sensitivities, there is no lack of consideration of the metatheoretical implications of the approach, and potential generalisations are attempted wherever possible within the confines of a data-oriented perspective. As with his previous work in the HPSG tradition, Ginzburg's *IS* is a significant achievement that should attract serious consideration among linguistic, cognitive science and philosophical audiences.

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