The Linguistic Realization of Contrastive Discourse Relations in Context: Contextualization and discourse common ground

La réalisation linguistique des relations discursives constrastives en contexte : contextualisation et discours de sens commun

Anita Fetzer[1]

[1] Applied Linguistics: English, University of Augsburg, Germany, anita.fetzer@philhist.uni-augsburg.de

RÉSUMÉ. Ce papier présente la comparaison de la contextualisation et de la réalisation linguistique des relations discursives contrastives dans les tâches d'édition monadiques et dyadiques produites dans un cadre expérimental. Les participants devaient produire un texte argumentatif bien-formé sur la base d'un squelette de texte réduit à l'information propositionnelle bien que contenant encore l'organisation séquentielle argumentative originale et la configuration par défaut des événements. L'objectif était de comprendre le rôle du contexte dans la production et le traitement d'un discours dans el contexte de la négociation du sens commun du discours et de sa cohérence conceptuelle. Le contexte est vu comme une construction relationnelle dynamique, comprenant le contexte social, le contexte linguistique (ou: co-texte) et le contexte cognitif.

L'étude est méthodologiquement compositionnelle à travers les approches fonctionnelles de la grammaire du discours, de la représentation du discours et de la pragmatique discursive. Les résultats de l'expérience montrent que les textes dyadiques et monadiques contextualisent les relations discursives contraires et interprètent la cohérence discursive en utilisant un ensemble de connecteurs discursifs contrastifs et de lignes de cohérence, les textes monadiques contextualisant en outre le contexte social, incorporant des contributions contrastives en conséquence.

ABSTRACT. This paper compares the contextualization and linguistic realization of contrastive discourse relations in monadic and dyadic editing tasks produced in an experimental setting. Participants were asked to produce a well-formed argumentative text based on a skeleton text reduced to minimal propositional information while still containing the original argumentative sequential organization and default configuration of events. The goal was to understand the role of context in the production and processing of discourse against the background of the negotiation of discourse common ground and construal of discourse coherence. Context is conceived of as a dynamic relational construct, comprising social context, linguistic context (or: co-text) and cognitive context.

The study is methodologically compositional across functional approaches to discourse grammar, discourse representation, and discourse pragmatics. The results of the experiment show that dyadic and monadic texts contextualize contrastive discourse relations and construe discourse coherence by utilizing a pool of contrastive discourse connectives and coherence strands, with monadic texts additionally entextualising social context, embedding contrastive contributions accordingly.

MOTS-CLÉS. Relation discursive contrastive, connectivité discursive, ligne de cohérence, cohérence du discours, contexte linguistique, contexte social, contexte cognitif, contextualisation, entextualisation, discours de sens commun.

KEYWORDS. Contrastive discourse relation, discourse connective, coherence strand, discourse coherence, linguistic context, social context, cognitive context, contextualization, entextualisation, discourse common ground.

1. Introduction

Discourse – like context – has become indispensable to the analysis of meaning in natural-language communication[1], and like context, the concept itself is used in diverging frameworks referring to different theoretical constructs. For instance, discourse is used synonymously with text, i.e. a linguistic-surface phenomenon denoting longer stretches of written and spoken language, including other semiotic codes [4]; discourse is used to refer to a sociocognitive construct, i.e. a mental

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[1] In this paper, communication, natural-language communication, discourse and natural-language discourse are functional synonyms. Their performance is in accordance with the pragmatic premises of rationality, intentionality of communicative action and cooperation. Both communication and discourse are formats of interaction.

representation capturing grounding, the administration of discourse common ground and discourse-as-process [10, 12, 19, 20]; discourse is used to refer to discourse-as-product performed and negotiated in social context [31, 35]; and discourse is used to refer to both a theoretical construct and to its instantiation in context, i.e. type and token [40, 46, 47]. Discourse pragmatics adopts the fundamental pragmatic and socio-pragmatic premises of consciousness, rationality and intentionality, and of cooperation and contextualization, and furnishes discourse defined as both a sociocognitive construct and a text with a meta-perspective. Discourse is thus not only sociocognitive construct and text, but it is also communicative action. This does not only hold for the constitutive parts of discourse, such as clauses for text construction, and propositions for mental representations of discourse, but also for a macro-oriented frame of investigation: discourse-as-a-whole [15]. Analogously to the status of relevance in relevance theory, that is communicative action comes in the presumption of being – optimally – relevant [45], discourse comes in with the presumption of being – more or less – coherent. This holds for the production and processing of natural-language discourse, both for discourse-as-a-whole and for its constitutive parts.

The parts-whole perspective on discourse does not only imply the truism that discourse-as-a-whole is more than the sum of its constitutive parts, but also that discourse is both process, that is the concatenation and linearization of separate parts, and product, that is a bounded whole. Being both process and product requires discourse units to be conceptualized relationally and – to employ ethnomethodological terminology – *doubly contextual* [27, p. 242], reflecting Bateson's claim that "communication is both context-creating and context-dependent" [3, p. 245]. The creation of social context in communication may be illustrated by the context-dependent use of address terms, deictic expressions and style: addressing a communication partner with their title and last name and at the same time using a more formal style of communication may signal social distance and potential social hierarchies, while nicknames and the strategic use of regional dialects may create a solidarity-imbued social context. From a cognitive-context based perspective, communication is not only context-creating and context-dependent, but also context-changing. The context-change potential of communication is reflected in discourse processing, the construal of discourse coherence [20, 35] and the administration of discourse common ground. Discourse common ground is a context-dependent cognitive construct which stores and updates individual and social meaning-making processes as well as their negotiation and ratification. Discourse common ground is composed of a set of references to a domain of discourse and contains background information as well as sets and sub-sets of domain-specific beliefs; it is related dialectically with more general common grounds, which are related to general common ground [10, 35]. By contextualizing prior discourse units, for instance by anaphora resolution and the calculation of conversational implicatures, the contextualized units pave the ground for the production, processing and grounding of upcoming discourse units, thus indicating how the discourse is intended to proceed, i.e. whether there is some change in the present direction of discourse, as is signaled by contrastive discourse connectives, e.g. *but* or *however*, or by pragmatic word order, *On Sunday Sue travelled to Mars* for instance, or whether there are no indicators of intended change and the discourse is to proceed as initiated, as is signaled by continuative discourse connectives, such as *additionally* or *moreover*, and encoded in grammatical word order, e.g. *Sue travelled to Mars on Sunday*. Another consequence of the premise that discourse comes in with the presumption of being – more or less – coherent is that discourse processing goes hand in hand with grounding, that is anchoring discursive contributions and discourse referents in cognitive context, the negotiation of discourse common ground and the construal of discourse coherence, that is relating the constitutive parts of discourse in such a manner that they form a – more or less - meaningful whole. While discourse processing is local and bottom-up administering the grounding of individual parts, the construal of discourse coherence is both bottom-up and top-down, administering the negotiation of discourse common ground with respect to the nature of the connectedness between individual units and the larger whole.

The claim that discourse contains context, and that context contains discourse is not trivial, but rather refers to the relational nature of the two: both are parts-whole configurations in which the whole is more than the sum of its constitutive parts. From a linguistics-based perspective, discourse does not

only contain linguistic context (or: co-text), but discourse as communicative action is also anchored in cognitive context, and its producers and recipients rely on cognitive context for its production, processing, grounding, negotiation of discourse common ground and construal of discourse coherence. Moreover, discourse as communicative action is performed by communicators in social context, and discourse as communicative action contains references to social context, for instance to participants and their temporal, spatial and discursive embeddedness. While discourse is generally conceived of as delimited by communicative formats, e.g. discourse genre[2] [15], context is generally seen as unbounded, but may be assigned the status of a bounded entity when entextualised[3] in discourse [13].

The parts-whole perspective on discourse is accounted for in theories of discourse representation, for instance Segmented Discourse Representation Theory [2], Rhetorical Structure Theory [38] and in psycholinguistic approaches to coherence relations [41], where the nature of the connectedness between parts, that is discourse units, is described as semantic and pragmatic relations holding between two discourse units, i.e. complex linguistic units with propositional content and illocutionary force of their own. Coherence relations are to "be thought of as modelling cognitive mechanisms operative in readers and writers when they process text. According to this view, when a particular relation is posited between two spans of text, a claim is being made about the mechanism used by the writer to join these two spans together, and about the mechanisms used by its readers to interpret them" [30, p. 138). In Segmented Discourse Representation Theory, any discourse unit p2 usually stands in a logical relation to at least one other preceding unit p1 (or rather: the addressee construes a logical relation between them, in order to vouchsafe coherence). The propositions p1 and p2 are in the discourse relation R if the inferences the addressee makes and the logical connection s/he draws between p1 and p2 are in accordance with the ones defined for R. Contrast is a discourse relation which entails that p1 and p2 are semantically dissimilar [2, p. 168], for instance the second unit from the editing-based task to be discussed below (cf. appendix) *London was a dowdy place of tea-houses and stale rock cakes* stands in a Contrast relation to the third unit 3 *it's much more exciting*, being semantically dissimilar with respect to the predications '*was a dowdy place of X*' and '*is much more exciting*'. The Contrast relation is also a constitutive pillar of one of four primitives for the definition of coherence relations [30].

This paper examines the contextualization and linguistic realization of contrastive discourse relations in argumentative discourse. It adopts the distinction between coordinating Contrast and subordinating Corrective Elaboration [2] as well as their claim that contrastive discourse relations are scalar, that is they express degrees of contrastiveness. Contrastive discourse relations are of particular interest to the examination of the dynamics of discourse and the contextual embeddedness of discourse-as-a-whole and of its separate parts because they are generally linguistically marked with contrastive discourse connectives, e.g. *but, while* or *whereas*, which may also be utilized for argumentative purposes[4], with metacommunicative comments, such as *surprisingly*, and with pragmatic word order, that is temporal, spatial and other information rather than the grammatical subject positioned at the beginning of a clause [6, 11]. The paper compares the linguistic realization of contrastive discourse relations as well as their linguistic contexts and social contexts, considering additionally their contextualization and linguistic realization, in newspaper editorials - a prototypical representative of the argumentative discourse genre of commentary - from the quality paper *The Guardian* with those of 18 editing tasks: 9 texts produced by single participants, and 9 joint

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[2] In this paper, discourse genre is used as an umbrella term for different kinds of communicative formats. The formats generally share the defining condition that the form-as-a-whole has genre-specific constraints of production and interpretation for the format-as-a-whole as well as for its constitutive parts. Typical examples of discourse genre are interview, lecture, research paper, narrative or commentary. In an interview, for instance, a discursive contribution produced by the interviewer counts as a request for information, irrespective of its syntactic formatting.

[3] In discourse pragmatics, entextualization refers to assigning unbounded context the status of a bounded object, for instance by narrowing down the referential domain of an indexical expression (*here*) to a more bounded referential domain (*here in Paris*). The use promoted in this paper differs from Park and Bucholtz, who define entextualization primarily in terms of institutional control and ideology. It shares their stance of approaching entextualization in terms of "conditions inherent in the transposition of discourse from one context into another" [39, p. 489], while considering not only global, but also local context.

[4] [1, 7] argue for internal and external perspectives on argumentation as internal and external dialogue, as is reflected in argumentative moves, e.g., claim, warrant or backing, and argumentative operators, e.g. *but*, *since, because, although* and *thus*.

productions by two participants. The editing tasks were based on a commentary from the same newspaper. As for the dyadic productions, the analysis is supplemented with excerpts of recorded and transcribed metadata documenting the dyad's negotiation of the appropriate linguistic realization of discourse relations in context. The monadic and dyadic texts were produced in an experimental setting in which participants were asked to produce a well-formed argumentative text based on a skeleton text reduced to minimal propositional information while still containing the original argumentative sequential organization and default configuration of events (cf. appendix).

The paper is structured as follows: Section 2 approaches context from sociopragmatic and discourse-pragmatic perspectives presenting premises and bridging points. Section 3 discusses pragmatic, context-based approaches to discourse. Section 4 presents the study of the discourse relations of Contrast and Corrective Elaboration, describing data, procedure and results. Section 5 discusses the results, giving particular attention to their contextualization, the negotiation of discourse common ground, and the entextualisation of social context. Section 6 presents the conclusion.

2. Context in context: contextualization and entextualization

Natural-language communication is a context-dependent endeavor in which language users refer to themselves and their minds, and to each other and each other's minds [20], to the immediate and less immediate physical surroundings, including temporal and spatial settings, and to prior and potentially succeeding talk, all of them being constitutive parts of cognitive, social and linguistic context [14, 16].

Linguistic context comprises the linguistic output of language use and is composed of linguistic constructions (or parts) embedded in adjacent linguistic constructions (further parts), which may be further embedded, composing a discourse unit, which may – depending on the research paradigm – be referred to as elementary discourse unit, clause, sentence, utterance, turn or text. Linguistic context is functionally synonymous to text-linguistic co-text [4, 47].

Cognitive context comprises representations of common ground which has been further differentiated into discourse common ground and participant-specific representations of discourse common ground, that is individual discourse common ground capturing the process of an individual's processing of discourse and collective discourse common ground capturing the negotiated and ratified outcome of the set of individuals' processing of discourse; individual and collective discourse common grounds are generally not identical but they need to overlap to varying degrees for communication to be felicitous [10]. Common ground has also been distinguished with respect to core common ground and emergent common ground [29]. Both approaches to common ground agree that common ground is given but at the same time also co-constructed in communication, and that the two are not identical, especially in intercultural communication. Cognitive context is utilized for inference and other forms of reasoning and thus is functionally equivalent to language users' minds; it is indispensable to the interpretation of language and other semiotic codes. Constitutive parts of cognitive context are mental representations, propositions, contextual assumptions and factual assumptions. Since cognitive contexts are anchored to an individual but are also required for a cognitively based outlook on discourse and communication, they need to contain assumptions about mutual cognitive environments or "other minds" [20]. For this reason, cognitive context is not only defined by representations and assumptions, but also by meta-representations and meta-assumptions. In the social-psychological paradigm, context is conceptualized along the lines of the gestalt-psychological distinction between figure, that is a bounded entity, and ground, that is an unbounded entity, and the metacommunicative concepts of frame and framing [3, 22]. Frame is seen as a delimiting device, which "is (or delimits) a class or set of messages (or meaningful actions)" [3, p. 187]. Because of its delimiting function, "psychological frames are exclusive, i.e. by including certain messages (or meaningful actions) within a frame, certain other messages are excluded" and they are "inclusive, i.e. by excluding certain messages certain others are included" [3, p. 187]. This also holds for context – and discourse, as will be argued for below – which, analogously to frame, is also structured and metacommunicative.

Social context goes beyond linguistic context and cognitive context and is generally seen as 'external' to discourse. This does, however, not mean that social context is not referred to in discourse and thus imported and entextualised in discourse, as is the case with the indexicals *here, now* or *I*, respectively *here on Mars, now at this very moment at 6.31 pm here in Central Europe* or *I as Prime Minister*. Constituents of social context are, for instance, language users, the immediate concrete, physical surroundings including time and location, and the macro contextual institutional and non-institutional domains. Social and sociocognitive approaches to context are ethnomethodological conversation analysis and interactional linguistics. They conceive context as an interactional achievement [23, 27, 43]. In sociopragmatics, context is considered a relational construct [12, 16], in relevance theory it is described as a psychological construct [45], and in functional grammar context is referred to as "other minds" [20]. Within these research paradigms, context is further described as dynamic, relating participants and the language that they use in a dialectical manner. To capture the dialectics of the dynamics of context, natural-language communication is seen as context-dependent, context-changing and context-creating. In a similar vein, context is investigated as imported into communication and as invoked in communication, for instance by the reference *I as Prime Minister*, which imports and invokes another social context than the reference *I as an ethnomethodologist* [33]. In interactional-sociolinguistic terms, context is brought into the communicative exchange with indexical expression, presuppositions and background information required for communication to be felicitous and context is brought out in the communicative exchange through the negotiation of meaning, e.g. negotiation of referential domains of indexicals [25].

Ethnomethodological and interactional-linguistics-based conceptualizations of context are based on the premise of indexicality of communicative action. In these paradigms, it is not only linguistic expressions, whose resolution depends on context, but rather the communicative-action-as-a-whole. This does, of course, also hold for the constitutive parts of the communicative action, but it is the communication action-as-a-whole, and its embeddedness in a discourse genre, which constrains meaning-making processes. Social-interaction-based paradigms thus relate an exclusively product-oriented conception of context-as-given and external to a communicative act to a dynamic construct, that is a contextualized communicative act, whose meaning is inferred from context, negotiated within a process of internal argumentation and construed accordingly. From this perspective, context is no longer solely a social phenomenon but rather a dynamic sociocognitive construct which is negotiated in interaction. The negotiation of a jointly constructed representation of context feeds on the contextualization of communicative action and its constitutive parts, for instance participants, local and temporal embeddedness in the micro and macro domains which are related in a dialectical manner. In sociocognitive approaches to natural-language communication contextualization has been assigned the status of a universal in human communication, which manifests itself locally with respect to the negotiation and co-construction of meaning in context [26].

The concept of context has undergone some fundamental rethinking in language studies and linguistics, particularly in pragmatics and discourse pragmatics. Rather than being looked upon as an external constraint on linguistic performance, context is analyzed as a product of language use, as interactionally negotiated and co-constructed, and as imported and invoked [13, 33]. Context is further conceptualized along the distinction between context as type and context as token, differentiating between more generalized and more particularized variants. Context is also a psychological construct operationalized as a set of antecedent premises, which are required for communicative action to be felicitous. It needs to be pointed out, however, that the unbounded nature of context does not mean that context is without any structure. If that were the case, natural-language communication would not be rule-governed and could therefore not be felicitous. Rather, context is relational, and "structured context also occurs within a wider context - a metacontext if you will - and that this sequence of contexts is an open, and conceivably infinite, series" [3, p. 245].

A dynamic perspective on discourse supplemented by the interactional-linguistics universal of contextualization goes beyond the local contextualization of communicative acts. To capture the

dynamics of discourse and the embeddedness of communicative acts in linguistic contexts and their delimitation by discourse genres, local meaning constructions may need to be renegotiated and decontextualized at a later stage in the flow of discourse to vouchsafe discourse coherence. The local decontextualization may result in a recontextualization of the prior contextualized communicative acts, if not of the whole sequence of the communicative acts under negotiation [35], as will be shown in the following section.

3. Discourse in context

Discourse and context may refer to theoretical constructs – or types – and at the same time both can refer to particularized instances of discourse in context, or of contexts in context. Discourse and context are connected closely: discourse is performed in context – or rather context contains discourse – and discourse contains context, viz. contexts are presupposed, imported, invoked, construed and co-constructed in discourse [25, 33, 46]. Discourse is composed of linguistic context (or co-text), it is anchored in cognitive context as regards discourse processing, grounding, anaphora resolution, discourse connectives, information structure and information management, to name but the most prominent candidates for the construal of discourse coherence, and discourse is performed in social context. Both discourse and context are parts-whole configurations containing their constitutive parts or 'sub-parts' while at the same time being contained in 'meta-parts' which are contained in 'super-parts' [16].

For felicitous analyses of discourse and context, discourse needs to be delimited from context and context needs to be delimited from discourse. Depending on research perspective and methodology, delimiting frames, that is frames delimiting discourse from context, have been defined as text type as in text linguistics [4], communicative genre as in interactional sociolinguistics and sociology [25, 26, 36], discourse genre as in discourse studies [8, 47], activity type or language game as in pragmatics and in the philosophy of language [5, 31, 34, 48], communicative activity type as in socio-pragmatics [42], or communicative project as in dialogism [35].

In discourse, social and cognitive context are imported through conventional means and through particularized context-dependent means. Prototypical representatives of conventional means are (1) deictic devices, such as person deixis concerned with discourse-internal and discourse-external participants, (2) time deixis dealing with discourse-internal and discourse-external temporal configurations, for instance coding time and receiving time, and metalinguistic tense and linguistic tense, (3) place deixis concerned with discourse-internal and discourse-external local configurations and the corresponding personal, social and cultural attitudes connected with location, (4) discourse deixis considering structure and sequential organization of discourse as well as discourse coherence, e.g. discourse connectives and other cohesive devices, and (5) social deixis concerned with social relations, e.g., terms of endearment and honorifics. Naturally, these deictic devises are context-dependent and dynamic, and that is why their referential domains may change in accordance with their local and global contexts of use. This is particularly true for the interactional roles and footings of discourse-internal and discourse-external participants [21].

Contextualization has been assigned the status of a universal in natural-language communication, as is reflected in assigning discursive values to indexical tokens and enriching inexplicit forms and contents, as is done through conversational inference [26, 32]. Discourse analysis, interactional sociolinguistics and sociopragmatics additionally differentiate between the (socio)cognitive operation of global inference anchored to discourse genre [31, 40] and local inference as described by conversational implicature [24]. Because of their multifaceted nature and complexity, context and discourse are best described as multilayered parts-whole configurations. That is, context contains sub-contexts and discourse contains sub-discourses, and sub-contexts instantiate context and sub-discourses instantiate discourse. The nature of the connectedness between the different sub-entities of context and discourse is a structured whole composed of interdependent frames [22].

A pragmatics-based perspective on context and discourse does not only capture the dynamics of the multilayered parts-whole configurations of both, but also provides a frame of reference for their interdependencies. Conceiving of discourse not simply as communicative action but rather as macro communicative action in context, which is composed of micro communicative actions, assigns discourse the status of rational, intentional, conscious and cooperative communicative action, which is contextualized locally with the help of conversational inference to vouchsafe local discourse coherence and globally in accordance with the contextual constraints and requirements of discourse genre to vouchsafe global discourse coherence.

In natural-language communication the production of discourse as well as its processing is based on the premise that discourse comes in with the presumption of being – more or less – coherent, and this premise holds for discourse-as-a-whole as well as for its constitutive parts. The parts-whole perspective on discourse implies that discourse is both process and product. Being both process and product requires its constitutive parts to be conceptualized relationally; to use ethnomethodological terminology: doubly contextual. By contextualizing prior discursive parts, the contextualized parts pave the ground for the production, processing and grounding of upcoming parts, thus indicating how the discourse is intended to proceed. Another consequence of the premise that discourse comes in with the presumption of being – more or less – coherent is that discourse processing is interdependent on the construal of discourse coherence. Both are not identical, but supplementary, as has already been mentioned briefly in the introduction: discourse processing is local and bottom-up focusing on individual parts while the construal of discourse coherence is both bottom-up and top-down, relating individual parts with the larger whole. Contrast and its manifestation in contrastive discourse relations play an important part in signaling, if not encoding, an intended change in the direction of discourse and thus some potential recontextualization of already contextualized parts.

4. Contrast and corrective elaboration

In discourse pragmatics discourse and its constitutive parts are relational, relating discourse and context, discourse and communicative action, communicative action and language users, and language users with the things they do with words in discourse in context, and the things they do with discourse in context. Only a relational frame of reference can capture the dynamics of discourse, i.e. the unfolding of discourse-as-a-whole, potential variation of linearized sequences and potential variation within linearized sequences, and thus generalized and particularized kinds of connectedness between parts and wholes, transcending clearly delimited frames of investigation. Discourse comes in with the presumption of being – more or less – coherent, and it is language users who construe discourse coherence when producing and interpreting discourse. The processing and construal of discourse coherence utilizes linguistic and extra-linguistic material, for instance presuppositions, discourse connectives, coherence strands and discourse relations.

Discourse relations have been defined as logical relations holding between two or more discourse units [2]. For contrastive discourse relations, the relations express semantic dissimilarity manifest in content, illocutionary force and metacommunicative meaning. Coordinating discourse relations keep the discourse on the same level, while subordinating relations introduce a lower level in the discourse hierarchy. This is also reflected in the semantics of coordinating Contrast, which is defined as entailing semantic dissimilarity [2, p. 168]; subordinating Corrective Elaboration is defined as semantic dissimilarity within the main eventualities of the two discourse units with the additional constraint of the second discourse unit's main eventualities being a mereological part of the main eventualities of the first discourse unit [2, p. 161, for a definition of Elaboration].

To apply the theoretical construct of discourse relation to the analysis of natural-language discourse in context, logical relations have been operationalized within a pool of defining conditions which are encoded in coherence strands [19] and signaled with metacommunicative meaning. Coherence strands are

- topic continuity and referential continuity
- temporal and aspectual coherence, including modality
- lexical coherence

Metacommunicative meaning is signaled with

- discourse connectives
- metacommunicative comments
- pragmatic word order

The defining conditions of discourse relations are systematized in table 1, which is adapted from [37, pp. 66-67]:

Discourse Relation		Defining conditions
Coordinating	Continuation	Common topic
	Narration	Common topic Temporal sequentiality
	Contrast	**Semantic dissimilarity between p^2 and p^1**
	Background	p^2 forms the background of p^1 Common topic
Subordinating / Superordinating	Result	p^1 gives reason for (parts of) eventualities in p^2 Connecting two sub-events Temporal precedence of cause
	Comment	p^2 selects p^1 as topic; or: p^1 selects p^2 as topic
	Elaboration	Main eventualities of p^2 are a mereological part of the main eventualities of p^1
	Corrective Elaboration	**Semantic dissimilarity between main eventualities of p^2 and p^1 with main eventualities of p^2 being a mereological part of main eventualities of p^1**
	Explanation	p^2 gives reason for (parts of) eventualities in p^1 Temporal consequence

Table 1. *Discourse relations and their defining conditions*

Discourse relations are relational devices par excellence, relating the constitutive parts of discourse through logical relations. In English, contrastive discourse relations are generally not only encoded in coherence strands but additionally signaled with discourse connectives, metacommunicative comments and pragmatic word order. Frequently they are also supplemented with additionally entextualised temporal, local, social and discursive context, intensifying the degree of discursive glueyness and thereby contributing to, if not ensuring speaker-intended interpretation of the micro units and speaker-intended construal of discourse coherence.

4.1. Data

The dataset comprises nine monadically edited argumentative texts with 281 discourse relations, nine dyadically edited argumentative texts with 160 discourse relations, and nine metadata texts, i.e. transcriptions of the dyads' negotiations of the linguistic material which needs to be added to the bare units to jointly construct a well-formed argumentative text.

4.2. Procedure

The linguistic realization of discourse relations has been examined in written argumentative discourse, that is editorials from the British newspaper *The Guardian*, and in monadically and dyadically edited argumentative texts from an experimental setting, as described briefly in the introduction. In the professionally produced public media texts Contrast and Corrective Elaboration were signaled with contrastive discourse connectives, primarily *but*, and pragmatic word order, but not generally furnished with further entextualised contextual information [17]. To corroborate the results obtained and to shed more light on the assumption that discourse genre is a kind of blueprint in accordance with which language users produce and interpret discourse and thus encode, respectively decode, and signal, respectively infer, discourse relations in the context of the argumentative discourse genre of commentary – and to compare it across two different production formats: monadically and dyadically edited texts – a pilot study was designed which allows the elicitation of data from speakers' realizations of connectivity in an empirically replicable fashion.

In the study, which has been described briefly in the introduction, participants were provided with a skeleton text that approximated an underlying representation, and they were asked to "flesh it out" into a fully operational text (cf. appendix). The discourse units of the skeleton text have been stripped of almost all of their adverbials (adjuncts, subjuncts, conjuncts and disjuncts), a grammatical function which codes and signals temporal and local contextual information, discourse connectivity, and speaker's beliefs and attitude, reduced in this way to their necessary minimum of propositional content, but still containing the sequential organization and default configuration of events. Whenever it seemed possible to realize more than one discourse relation connecting two discourse units, participants needed to choose both the discourse relation to employ and whether to encode it in coherence strands, or whether to encode it in coherence strands and additionally signal it with discourse connectives, and/or metacommunicative comments, and/or pragmatic word order [37]. Participants were provided with the skeleton text, together with information about medium and genre of the original text. Their task was to use and edit the skeleton text and create a coherent and well-formed text of identical discourse genre, with the single constraint that the original sequence of discourse units had to remain unchanged. As an editing task with 'minimal available text' no new content needed to be generated, while it was still necessary to supplement and integrate additional linguistic material to arrive at an operational text and thus a well-formed, coherent whole.

The main interest of our study was not whether or even how a relation between two given units was realized, but rather the variation between different realizations of identical discourse relation potential. Whenever an underspecified discourse relation is encountered, participants – in both production formats – need to choose both the discourse relation to employ and the degree of overtness in which to realize it: they need to choose whether to encode the discourse relation in coherence strands, or whether to encode the discourse relation in coherence strands and additionally signal it. We expected the participants of our study to adhere to the constraints of the argumentative genre of commentary in their encoding and signaling of discourse relations. Intrinsic guiding criteria for the selection of additional material are (1) discourse genre as a blueprint, and (2) the sociocognitive construct of discourse common ground with intended readers of the resulting text [10]. Evidence for the hypotheses of discourse genre as a kind of blueprint and sociocognitive discourse common ground as an administered record of a current communicative event related to other records as well as to presupposed Background [44] is expected to be obtained from (1) the kind of linguistic material added to contextualize the bare units, which is seen as relevant to the construal of discourse coherence and

construction of discourse common ground, and (2) the dyad's negotiation of what needs to be added to be able to contextualize the bare units in order to be able to transform them into a well-formed text. The added linguistic material allows for the reconstruction of imported context and explicated background assumption, while the dyad's negotiation of what needs to be added promises insights into the processing and contextualization of discourse, the construction of discourse common ground and the construal of discourse coherence.

Discourse common ground is a context-dependent notion which administers the contextualization of discourse, in particular discourse processing, negotiation of meaning and construal of discourse coherence. It contains a set of references to a particular domain of discourse, to domain-specific beliefs and to domain-specific presuppositions – the discourse genre of commentary and its contextual constraints and requirements, for instance. Because of the embeddedness of discourse, discourse common ground is related to meta-discourses and their background information and to further sets of domain-specific beliefs. Discourse common ground is related dialectically to more general discourse common grounds, which participants construed and administered in previous communicative events, and it is related to more general common ground. Discourse common ground has a dual status: on the one hand, it is a particularized category administrating both an individual's processing and contextualization of a particular discourse and her/his construal of discourse coherence for that particular discourse, which is referred to as individual discourse common ground. For communication to be felicitous, however, participants need to negotiate a – at least partially shared – representation of discourse common ground, which is referred to as collective discourse common ground. Collective discourse common ground is negotiated and ratified and thus shared by the set participants. Individual discourse common ground and collective discourse common ground do not need to be identical, but they need to overlap, to varying degrees. On the other hand, discourse common ground is a generalized category: it administers other kinds of discourse common ground, which the participants have construed and administered in previous communicative events and interactions. All of these kinds of discourse common ground form a network, which is related dialectically.

Discourse common ground is not only relational, but also dynamic. The dual status of discourse common ground as (1) generalized discourse common, and as (2) particularized discourse common ground is also reflected in the differentiation between core common ground and emergent common ground: "*Core common ground* [original emphasis] refers to the relatively static (diachronically changing), generalized, common knowledge and beliefs that usually belong to a certain speech community as a result of prior interactions and experience, whereas *emergent common ground* [original emphasis] refers to the dynamic, particularized knowledge created in the course of communication and triggered by the actual situational context" [29, p. 160]. The goal of communication – and of the monadic and dyadic editing tasks – is to activate the generalized discourse common ground, facilitating access to both generalized discourse common ground and to emerging particularized discourse common ground. Against this background, "[c]ommon ground is an assumption that we make in the course of actual communication. Both core common ground and emergent common ground are integrated parts of this assumed common ground" [29, p. 164].

The participants of our study for the dyadically edited texts were adult native speakers of English, volunteering from the academic community of Augsburg University. They included two native speakers of American English, two native speakers of British English, and one native speaker each of Canadian English and Irish English. All of them were from an academic background and all of them can be considered to be familiar with how to produce and edit argumentative discourse. Their negotiation was recorded and the metadata were transcribed by student assistants and checked against delivery. The analysis focused on those incidents where the adding of discourse connectives and adverbials was negotiated, as well as on those where participants discussed the appropriate use of tense and its reference to time. For the monadically edited texts, students from British universities and US universities volunteered to participate in the study – some gained extra credits for their courses, others just participated. They were provided with the identical skeleton text, together with information about

medium and genre of the original text (cf. Appendix). The 18 texts edited by 9 monads and 9 dyads were segmented into discourse units, coded[5] for discourse relations and analyzed with respect to the linguistic realizations of discourse relations. The focus was on the linguistic material added to the bare units in the dyadic and monadic settings. In the edited texts, the linguistic material added was examined and classified as expanding the bare unit with discourse connectives or adverbials, or as forming additional discourse units, which stand in one or more discourse relations with a bare unit. Discourse relations encoded in coherence strands in accordance with their defining conditions were classified as implicit, and discourse relations additionally signaled with discourse connectives or pragmatic word order were classified as overt. While signaling ensures the activation of relevant defining conditions and thus guides the hearer in their interpretation of discourse relations as intended by the speaker, encoding defining conditions in coherence strands only may carry the risk of the discourse relation not being interpreted as intended by the speaker because the hearer may infer a different discourse relation.

4.3. Results

In the monadically and dyadically edited data, contrastive discourse relations are both encoded and signaled, which corroborates the results obtained from previous research. For the coordinating discourse relation of Contrast, the discourse connective *but* was the most frequently used device for signaling Contrast in both monadically and dyadically edited texts, with the monadic texts showing more variation in signaling Contrast, using also the contrastive discourse connective *while*, which may signal both causal and temporal contrast. The subordinating discourse relation of Corrective Elaboration was signaled with various contrastive connectives, showing a preference for *however* in the dyadic, co-constructed texts and displaying more variation in the monadic texts, which also used the connectives *yet, despite, instead of, though, although, however, and not just*, and the metacommunicative comments *even better* and *surprisingly*. As for linguistic devices encoding and signaling Contrast, morpho-syntactic negation (e.g., *no* or *not* in contracted or non-contracted forms, negative affixes, e.g., *un-, im-, in-, a-, anti-, dis-* or *–less*), semantic negation (e.g., *deny, reject, forbid* or *refute*), and pragmatic and metalinguistic negation seem good candidates[6] [12].

In coordinating Contrast as well as in subordinating Contrastive Elaboration, semantic dissimilarity was encoded in coherence strands, indexing

– referential continuity

– topic continuity

– a shift in temporal coherence

– a shift in aspectual coherence

– lexical coherence, in particular scalar and complementary antonymic lexical relations

In our edited data, coherence strands were frequently cued multiply for encoding a contrastive discourse relation, for example 'nowadays' and 'in the past' / 'in the post-war era'; 'London of former days was' and 'London of today is much more'; 'there was a time when NP was' and 'today this NP has changed'; 'last time NP came here' and 'now it's much more exciting! – all of them expressing semantic dissimilarity . Frequently the degree of contrastiveness of the linguistic context was intensified by further linguistic material signaling temporal contrast ('but now / today'; 'however now / these days'), thus corroborating Asher and Lascarides' claim that Contrast is scalar [2, p. 168]. Sometimes additional discourse units were added in the monadically edited texts, furnishing Contrast with the discourse relations of Background or Explanation thereby not only intensifying the degree of

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[5] To ensure interrater reliability, the coding of DR was undertaken by the author and Carolin Hofmockel, a postgraduate research assistant (University of Augsburg).

[6] In this paper, negation is considered as linguistically marked. This does not, however, imply, that the discursive processing of negation is more effortful and more complex [18].

contrastiveness but also contributing to the construal of a higher degree of local and global discourse coherence by providing subjectified accounts for semantic dissimilarity or contrasting mereological eventualities with the functions of accounting for the halt in the flow of discourse and supporting the administration of discourse common ground.

5. Discussion

Discourse relations have been defined by their defining conditions, which are encoded in coherence strands and which can additionally be signaled with discourse connectives, metacommunicative comments and pragmatic word order. The degree of specification of discourse relations in discourse is seen as a structure-based phenomenon and is calculated by the number of coherence strands encoded and the number of signals employed. Underspecification is defined as not fully encoding the defining conditions, thus allowing for multiple assignment of discourse relations, and overspecification is defined as fully encoding the defining conditions and adding discourse-relation-specific signals (discourse connectives, metacommunicative comment, pragmatic word order) to ensure speaker-intended interpretation.

In both single-authored and co-constructed texts, the defining conditions of contrastive discourse relations were encoded in coherence strands and signaled with contrastive discourse connectives, and / or metacommunicative comments, and / or pragmatic word order; sometimes more than one signal was used. The preferred contrastive discourse connective for Contrast was *but*, and the preferred initial constituent for pragmatic word order was a temporal adjunct (e.g., *now, today*). Frequently two signals were employed, intensifying the force of the contrastive discourse connective with pragmatic word order. For Corrective Elaboration, the preferred discourse connective was *however*.

5.1. *Contrast*

In the following, the encoding and signaling of the coordinating discourse relation of Contrast is analyzed in the editing-based tasks (cf. appendix). The co-constructed examples are supplemented with extracts from their negotiation-of-production protocols. Examples (1) and (2) are from the dyadically edited texts, and (3) and (4) from the monadically edited texts. *Temporal and aspectual coherence* is printed in *italics*, topic and referential continuity is underlined, **contrastive discourse connectives** and **metacommunicative comments** are printed in **bold**, and LEXICAL COHERENCE is printed in SMALL CAPS:

(1) #2/2   *In the past,* London *was* a DOWDY place of tea-houses and STALE rock cakes,
     #2/3   **but** *now* it*'s* MUCH MORE EXCITING.

(2) #1/7a   **While** some Londoners *might find* these foreign tongues THREATENING,
     #1/7b   I *DELIGHT* in hearing them mingled with snatches of French, German, Spanish, Italian, Japanese ...

In (1) and (2), the defining condition of Contrast, semantic dissimilarity between #2/2 and #2/3, and #1/7a and #1/7b, is encoded in topic discontinuity ('some Londoners' – 'I'), which may, however, also count as mereological topic specification if the first-person reference 'I' is interpreted as being a member of the set of 'some Londoners': Semantic dissimilarity is further encoded in temporal discontinuity (encoded in past tense ('was') and simple present ('is'), and the temporal adjuncts ('in the past' – 'now')). Semantic dissimilarity is also coded in antonymic lexical relations, which are intensified with a comparative construction ('dowdy' and 'stale / much more exciting'; 'past' – 'now'; 'some' – 'I'; 'threatening' – 'delight'), and it is signaled with the contrastive discourse connectives 'but' and 'while'.

In the metadata, the signaling and encoding of semantic dissimilarity is an object of talk: the dyads negotiate what kind of linguistic material needs to be added to turn the skeleton text into a well-formed

whole – with *skeleton-text material* printed in *italics* and **the negotiation of linguistic material to be added** printed **in bold**:

> B₁: {05:24} so here it says see also **this is present** | and **then** *London was a dowdy place* **but now and now** *it's much more exciting* so we have put this in the right context so we could start with the british **had seemed** or **in the past** (2s)
>
> B₁: {06:31} erm (2s) erm (3s) i wrote i used now already see **but now** *it's much more exciting* | **but today** how about **today***'s much more exciting* now how about if we do that but today
>
> A₁: mhm *but today it's*
>
> B₁: *much more exciting* now walking

Participant B₁ does not only make the contrast to be encoded in tense and temporal adverbials an object of talk, but also uses them in her/his negotiation of the search for appropriate formulations ('this is present'; 'then'; 'had seemed'; 'in the past'; 'but now'; 'but today') when s/he talks about the linguistic material to be filled in to transform the skeleton text into a well-formed argumentative whole. A very similar kind of negotiation takes place between the second dyad, referring to tense in their negotiation of well-formedness ('a jump from the present to the past'). B₂ uses a contrastive discourse connective in their talk ('while'), contextualizing 'rock cake', which seems to have caused some processing problems, leading to partial understanding only, and also negotiating the degree of contrast to be added ('it's more exciting' – 'much more exciting'):

> B₂: {03:30} **yeah there's a jump from the present to the past** right so there are hm hm case it's true that *london was a dowdy place* **but now** *it's much more exciting* or
>
> A₂: yeah
>
> B₂: **while** it is tr-
>
> A₂: in the past
>
> B₂: *rock cake* is erm like a scone but larger and hard | (2s) buttery
>
> A₂: uh huh {04:00} *and stale rock cakes* **but now** it's more exciting?
>
> B₂: mhm *much more exciting* yeah
>
> A₂: yeah *it's much more exciting*

In the monadically edited examples (3) and (4), the defining condition of Contrast, semantic dissimilarity between #D/2 and #D/3, and #M/2 and #M/4 is encoded in topic and referential discontinuity ('The landscape' – 'we') in (3), and in topic discontinuity ('London' – 'this negative perception') and referential discontinuity ('typical view' – 'recent survey') in (4). Semantic dissimilarity is also encoded in aspectual discontinuity (imperfective aspect – perfective aspect) in (3), and temporal and aspectual discontinuity ('was' – 'has changed') in (4). Semantic dissimilarity is encoded in antonymic lexical relations ('look fairly similar – 'changed dramatically''; 'be' – 'change'), and signaled with the contrastive discourse connective 'but' in (3), and with pragmatic word order realized with a fronted temporal adjunct in (4):

> (3) #D/2 <u>The landscape</u> *may* LOOK FAIRLY SIMILAR
>
>   #D/3 **but** how <u>we</u> *live*, how <u>we</u> *move* around, how <u>we</u> *work* and who <u>we</u> *live* with *has* CHANGED DRAMATICALLY.

> (4) #M/2 ***There was a time*** when THE TYPICAL VIEW OF THE OVERSEAS VISITOR WAS that <u>London</u> *was* a dowdy place of tea-houses and stale rock cakes.
>
>   #M/4 ***Today,*** according to a recent survey of tourists conducted by the London Bureau of Tourism, <u>THIS negative PERCEPTION</u> *HAS CHANGED*.

The coordinating discourse relation of Contrast is – structurally speaking – overspecified in the dyadically and monadically edited texts, in spite of the fact that Contrast is the discourse relation with the lowest number of overlaps for defining conditions and therefore not very likely not be

misinterpreted. There seems to be something special about Contrast, which may – like negation – count as a marked [6, 9, 28].

5.2. Corrective Elaboration

The defining condition of the subordinating discourse relation of Corrective Elaboration is semantic dissimilarity between the main eventualities of two discourse units with the additional constraint of the main eventualities of the second unit being a mereological part of the main eventualities of the first. In the dyadically edited texts (examples (5) and (6)) and in the monadically edited texts (examples (7) and (8)), the Corrective Elaborations are not only encoded in relevant coherence strands, but also signaled with a contrastive discourse connective, generally *however*:

(5) #2/8 Some would argue that <u>London</u> HAS BECOME the capital of linguistic diversity.
  #2/9 **However**, <u>one important group</u> *seems to be LEAVING ITSELF OUT*:

(6) #3/8 **Surprisingly**, <u>London</u> HAS BECOME the capital of linguistic diversity.
  #3/9 **However**, <u>one important group</u> which *seems to be EXCLUDING* {skeleton text: 'leaving'} *ITSELF* {skeleton text: 'out'}

Semantic dissimilarity between the two main eventualities is cued in the parts-whole configuration of 'London' and 'one important group' and in temporal and aspectual shifts between resultative perfect 'has become' and evidential modality 'seems to be leaving itself out' in (5) and (6); this is also made an object of talk in the dyad's negotiation of well-formed realization ('it is a contrast because this is' – 'it's a bit weird with like in fact and then however'). The degree of semantic dissimilarity is intensified in (5) with the metacommunicative comment 'surprisingly', signifying contrast of expectation, which has also been an object of talk in the dyad's negotiation of well-formedness:

A$_2$: yeah but otherwise how would you link it?
B$_2$: yeah
A$_2$: i could just well I mean I'm just thinking |
B$_2$:   well I well ok i can you know or (5s) ok yeah &&& [stuttering] **it is a contrast because this is ah**|
A$_2$: she can do this because she can do that|
B$_2$:   because she can yeah |
A$_2$: (3s) i'm changing the text &&& [mumbling] **however** *one*
B$_2$:   &&& (mumbling) namely students
A$_2$: (3s) **it's a bit weird with like in fact and then however**
B$_2$: yeah
A$_2$: it's like | a bit too much |
B$_2$:   mhm mhm well just leave it out in fact
A$_2$: yeah (5s) it's like overdoing the transition | a bit|
B$_1$: {08:01}ok and how about *london has become the capital of linguistic diversity* &&& **surprisingly** we need something in there | we need an adverb in there **surprisingly** or i don't know
A$_1$:   yeah yeah let's put in surprisingly

The monadically edited data display very similar patterns, but they are furnished with more social-context information, that is the source of the claim that London has become the capital of linguistic diversity is entextualised in 'her husband', and an additional discourse unit is added supplementing the Corrective Elaboration between #M/8 and #M/9 with the discourse relation of Background encoded in epistemic modality (might be') and signaled with the discourse connective 'while' in (7). In (8) the defining condition of semantic dissimilarity between main eventualities is cued by 'an inquiry is underway' and its mereological specification as 'an inquiry into the impact of Tory educational

policies' signaled not only with the rhetorical question in #S/13 (is not bureaucracy wonderful?), but also with pragmatic word order (inverted subject: 'even better would be an inquiry...'). Semantic dissimilarity is further cued by a shift in tense and modality ('is under way' – 'would be better'):

(7) #M/8 Her husband interjected, "London HAS BECOME the capital of linguistic diversity".

#M/9 **However** [#10 **while** linguistic diversity might be a salient feature of the nation's capital,] <u>one important group</u> *seems to be LEAVING ITSELF OUT*:

(8) #S/13 <u>An inquiry</u> *is underway*— is not bureaucracy wonderful**?**

#S/14 **Even better** *would be* <u>an inquiry into the impact of Tory educational policies</u> on closing more and more students out from a university education.

Like coordinating Contrast, subordinating Corrective Elaboration is – structurally speaking – overspecified in the dyadically and monadically edited texts, corroborating the results obtained for non-edited argumentative discourse. Structural overspecification thus seems to be the default for contrastive discourse relations in argumentative discourse. But why would language users opt for overspecification for contrastive discourse relations, which share only very few defining conditions with other discourse relations? We assume that the degree of overspecification has several reasons. Firstly, structural overspecification is an attention-guiding device and thus related closely to sociocognitive salience. Secondly, speakers / writers intend to secure the speaker-intended interpretation of contrastive discourse relations, which signal an intended change in the direction of discursive flow and therefore require particular attention, and thirdly, contrastive discourse relations have a decisive impact on discourse processing and contextualization as they signal some change and some potential restructuring and recontextualization in the administration of the current discourse common ground.

Discourse common ground is a dynamic construct, which is negotiated and updated continuously in natural-language communication, i.e. confirmed, modified or restructured, by storing new information communicated by the constitutive parts of discourse as well as by discourse-as-a-whole, and by updating and possibly modifying already stored information. Contrastive discourse relations may thus not only have a local impact on the processing of discourse, the construal and negotiation of discourse coherence, and the administration of discourse common ground, but they may also require some restructuring of already stored discursive information in the discourse common ground.

6. Conclusion

Discourse is a multilayered, complex construct, and so is its linearization. The sequential organization and linearization of discourse is not only a linguistic-surface phenomenon, but rather depends on linguistic context, social context and cognitive context. Contrastive discourse relations have an important function in discourse, signaling some change in the flow of discourse, and they have a particularly important function in argumentative discourse where they make manifest that one or more arguments may be controversial.

The structural overspecification of contrastive discourse relations found in the monadically and dyadically edited texts corroborates the results obtained for the linguistic realization of contrastive discourse relations in media discourse. This provides strong evidence for assigning overspecification the status of default configuration for Contrast and Corrective Elaboration in argumentative discourse, where it is used strategically to contribute to the activation of defining conditions, foregrounding them, making them salient through overt marking and assigning communicative relevance to them. Underspecification, which has not been found for contrastive discourse relations, may reflect cognitive economy.

Context and discourse are dynamic relational constructs with context containing discourse and context being contained in discourse. Consequently, context is presupposed in natural-language communication; it is imported into a discourse with indexical expressions or it is entextualised in discursive contributions or in some of its constitutive parts, and it is invoked in a discourse through inferencing. In argumentative discourse, overspecified contrastive discourse relations do not only signal negative contexts and trigger respective inferencing processes, but they also entextualise the kind of 'negativity'.

A dynamic perspective on context entails contextualization on the one hand, that is retrieving contextual information for discourse processing and discourse production, and grounding and anchoring discursive contributions in sociocognitive discourse common ground. On the other hand, it entails entextualisation, that is encoding and signaling of contextual information, for instance by narrowing down the referential domains of indexical expressions or by signaling contextual frames, as is the case with discourse connectives.

Discourse is interdependent on context, and context is interdependent on discourse. A pragmatic theory of discourse and its premise of indexicality of communicative action does not only offer insights into the multifaceted, multilayered and infinite theoretical construct of context and its instantiation in the production and processing of discourse, but also into the contextual constraints and requirements of discourse in general and of the delimiting frame of discourse genre in particular. By adopting both a bottom-up and top-down – or a micro and macro – approach to context and discourse, and by additionally accounting for interdependencies of their connectedness, it is possible to operationalize discourse with the delimiting frame of discourse genre, which is a structured whole with its genre-specific constraints and requirements. And it is also possible to delimit context as a delimiting frame of embedding context constrained by the contextual constraints and requirements of genre; the delimiting frame of embedding context may, of course, be expanded to a meta-level, should the communicative need arise. Context is thus not a set of propositions excluded from the content of a discursive contribution and construed against the background of the contribution [32]. Rather, context is a constitutive – though not necessarily fully made explicit – part of the contribution. Thus, if context is not given and external to a discursive contribution but rather a constitutive part of it construed and negotiated in the production and processing of discourse, it has the status of an indexical; and if context has the status of an indexical in natural-language discourse, it can never be saturated; this is because context is relational and embedded in an infinite series of meta-contexts. However, it is not only context, which is indexical, but also communicative action realized in the form of discursive contributions, which are carriers and containers of contextualized and entextualised objects as well as constitutive parts of it. Hence, it is not only indexical expressions contained in discursive contributions, which are contextualized in the production and processing of discourse, but rather the discursive contribution and discourse-as-a-whole.

Discourse studies have shown that there is systematic variation in the linguistic realization of the contextual constraints and requirements of a discourse genre, both for the genre-as-a-whole and for its constitutive parts, as has been demonstrated for the encoding and signaling of contrastive discourse relations. Accounting for systematic variation with respect to the linguistic realization of discourse and its constitutive parts – in particular with the explicit accommodation of context- and discourse-dependent sociocognitive discourse common ground – may not only lead to a re-assessment of language use, but also support context-dependent instantiations of document design. As for computer science and philosophy of language studies on context and communication, expanding the frame of reference from sentences and propositions to discursive contribution and discourse genre may lead to more refined insights.

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8. Appendix

Argumentative skeleton text and instructions

The following 15 clauses form the backbone of a commentary from the Guardian. You may add or delete any linguistic material which you consider necessary to transform the current text into a well-formed coherent whole, but you may not change the order of the given clauses.

The solitary monoglots

1. the British seem set on isolation from the world
2. London was a dowdy place of tea-houses and stale rock cakes
3. it's much more exciting
4. I can hear people speaking in all the languages of the world
5. was that Pashto or Hindi
6. I can just about differentiate Polish from Lithuanian
7. I delight in hearing them mingled with snatches of French, German, Spanish, Italian, Japanese…
8. London has become the capital of linguistic diversity
9. one important group seems to be leaving itself out
10. students
11. foreign language learning at Britain's schools has been in decline for decades
12. the number of universities offering degrees in modern languages has plummeted

13. an inquiry is under way
14. the number of teenagers taking traditional modern foreign languages at A-level fell to its lowest level since the mid-90s
15. it's a paradox