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Discourse and Cognitive Approaches to Language

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Introduction

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1. Overview

Considering language as it is used in context is central to both cognitive linguistic and discourse analytic perspectives on language. Indeed, the sentence, "Knowing a language is knowing how that language is used," could have been uttered by any number of discourse analysts or cognitive linguists from Hymes and his pioneering work on communicative competence (Hymes 1972), to the ethnomethodologists and their work on conversational analysis, to Goldberg and her insights on the meaning of syntactic constructions (e.g., Goldberg 1995, 2006), to Bowerman and Choi and their discoveries about young children's acquisition of distinct cross-linguistic spatial categorization schemes (e.g., Bowerman and Choi 2001). A key underlying tenet of this shared perspective is that the primary purpose of language is to communicate with other humans; thus, an accurate understanding of the properties of language requires understanding how language is used to create meaning. Making meaning is intimately tied to the participants involved in the interaction, their goals, the established norms of the communicative event, et cetera, or what Hymes (1974) defined as context. Moreover, an increasing number of researchers involved in language learning studies have argued that acquiring a language involves the learner experiencing language in context. This perspective emphasizes the importance of studying language learning as it is embedded in meaningful communication and recognition that language learning is crucially shaped by the particular language patterns to which a learner is exposed.

In terms of Cognitive Linguistics, the commitment to analyzing extended text is perhaps most apparent in Mental Space Theory and Blending Theory, which attempt to model the complexities inherent in human knowledge representation and linguistic processing, with particular focus on shifts in viewpoint and perspective in naturally occurring discourse. However, many other strands of Cognitive Linguistics have also been driven by observations of contextualized language use. For instance, Slobin's (e.g., 1996a, 1996b) work on rhetorical constraints argued for the

need to go beyond the sentence-level distinction of verb framed versus satellite framed to more fully understand cross-linguistic differences in narratives. Langacker's (1987) analysis of grounding in both nominals and clauses crucially refers to the speech event, the speaker and listener, and the speaker's assessment of the listener's knowledge. This attention to context and assessment of interlocutor's knowledge will sound very familiar to discourse analysts. Similarly, concerns about keeping track of reference, tracing shifts in time and perspective through the unfolding discourse are familiar concerns to discourse analysts.

Another key area of convergence is the shared recognition of the central importance of organized background knowledge in human cognition generally and in creating and interpreting language in particular. Bartlett's work on schema has been foundational to discourse analysts. Building on Bartlett's insights, Tannen (1978, 1993) describes schemata and frames in terms of structured expectation which arises from our culturally-situated experience of the world. These structured expectations are instrumental both in how humans organize knowledge about the world and how they use this knowledge "to predict interpretations and relationships regarding new information, events, and experiences" (Tannen 1993: 16). Certainly discourse analysts have long recognized schema in relation to interactional routines and scripts. After all Hymes' (1972) notion of communicative competence argues that speakers of each discourse community know how to use the language in contextually appropriate ways; they learn this through using the language to make meaning. While discourse analysts clearly recognize the centrality of schema in interpretation of the 'ideational,' much of their concern has been on the affective, interpersonal, and actional. In contrast, Cognitive Linguists have focused more on the nature of cognition and how it is reflected in the linguistic code and rather less on the interpersonal and interactional realms. In particular, they have emphasized that language is a reflection of human cognition which stems from a language user who is endowed with a particular physical and neurological architecture that includes rich, complex cognitive capacities, including richly structured memory, as she interacts with the external, social-physical world. Basic to the perspective is the idea that humans do not have direct, objective access to the external world; rather what humans have direct access to is their conceptualization of the world. Of course, this conceptualization is crucially shaped by the social-physical world that surrounds us, but, that external world is not objectively available to us; it is crucially constrained by the unique ecological niche we occupy. In large degree, it is this tenet, that language reflects and refers to human

conceptualization rather than directly referring to the external world, that has allowed Cognitive Linguists to address issues such as the nature of metaphor and other nonliteral language, semantics and even usage-based syntax in innovative ways that are highly consistent with discourse analysis. Thus, both perspectives are committed to the notion that language is crucially shaped by the general nature of human cognition, but the emphases, and hence the precise questions asked, differ.

To summarize, the papers in this volume adhere to a shared set of assumptions concerning language as it occurs in natural contexts. These shared tenets include the following: 1) when humans use language, they do so primarily for the purpose of communicating with other human beings; 2) communication always occurs in a context; and 3) language is shaped by its social-cultural nature; and 4) language is inevitably shaped by the nature of human cognition. The contributors to this volume propose approaching language, from grammar to metaphor to interactional dynamics, as part of a broader range of systems which underlie the organization of social life and human thought. The emphasis is on the role of language as it is used in everyday interaction and as it reflects everyday cognition.

While sharing these fundamental assumptions about language, the particulars of the areas of inquiry and emphases of those engaged in discourse analysis versus Cognitive Linguistics are diverse enough that many of us have tended to remain unaware of the interrelations among these approaches. Thus, we have also remained unaware of the possibilities of how research from each perspective can challenge, inform, and enrich the other. The papers in this volume make a unique contribution by more consciously searching for connections between the two perspectives. The results are a set of dynamic, thought-provoking analyses that add considerably to our understanding of language and language learning.

The papers gathered together here represent a rich range of frameworks within a usage-based approach to language. Cognitive Grammar, Mental Space and Blending Theory, Construction Grammar, ethnomethodology, and interactional sociolinguistics are just some of the frameworks used by the researchers in the following chapters. The particular subjects of the inquiry are also quite varied and include first language learning, second language learning, signed language, syntactic phenomena, interactional regulation and dynamics, discourse markers, metaphor theory, polysemy, language processing and humor. The diversity of frameworks and subjects allows for any number of organizing schemes. I deliberately chose not to classify the papers in the familiar pattern of first language, second language, signed language, theoretical, and narrative and interactional

analysis in order to more clearly highlight the interconnections between discourse analysis and Cognitive Linguistics across these categories.

2. Part I. Discourse resources in meaning construction and language processing: Discourse management, speaker stance and perspective, cognitive constraints and participant roles

The first group of papers explores a range of interactional and discourse level phenomena. For the most part, the contributions illustrate the innovative insights that can arise by taking a combined discourse/cognitive linguistic perspective. Using a diverse array of methodologies, these papers examine how speakers employ various discourse-level resources to structure interaction, create meaning, learn language, and facilitate language interpretation and processing. Berman and Ravid, Ellis, and Marras and Cadierno, in particular, provide new understandings of the role of cognitive resources and constraints on aspects of language processing and language learning.

The study of how interlocutors implicitly regulate their interactions – allowing for smooth turn transitions, topic initiation, et cetera – as been fertile ground for conversational analysis ever since the pioneering work carried out in the 1970's by researchers such as Sachs, Schegloff and Jefferson. As this line of research has matured, discourse analysts such as Thompson and Ford have added fine grained, instrumental measurement of prosodics and the timing of interlocutors' contributions (e.g., Ford and Thompson 1996; Ford, Fox, and Thompson 2000) and the Goodwins (e.g., 2000) have examined the role of eye gaze and body shifts in relation to turn-taking, allowing for ever more nuanced understanding of how humans coordinate their face-to-face oral communication. With their contribution to this volume, Sweetser and Sizemore make the analysis of gesture a central component in the equation.

Previous gesture research has tended to focus on how gesture is used by interlocutors to construct conversational content and emotional tone (e.g., Kendon 2000; Liddell 2003). Sweetser and Sizemore expand on gesture studies by providing a multifaceted analysis of the use of gesture space in dyadic interactions that shows interlocutors systematically use subdivisions of potential gesture space for a variety of conversational regulatory, as well as content purposes. They identify three gesture spaces used by interlocutors engaged in face-to-face conversation – personal space,

interpersonal space, and extra space – and demonstrate that speakers use each of these spaces for different discourse functions.

The paper breaks new ground in several ways. It establishes that speakers implicitly recognize divisions of gesture space. Further, the study demonstrates how gesture, in coordination with the verbal stream, is used to regulate face-to-face interaction in terms of holding the floor, facilitating turn-taking, and providing affective support. The data show that both the absolute gesture space and the gestures themselves are polyfunctional. Adding a distinctly cognitive insight, Sweetser and Sizemore discuss instances of a new 'mental space' established through gesture within 'extra' space (e.g., space over the speaker's shoulder). Altogether, the study offers fresh insights into a potent, relatively unexplored layer of communicative resources in the area of conversational analysis. The analysis of the synchronous contributions of the two separate modalities (the verbal stream and the gestural) gives us yet another window into speakers' mental representations and dynamic conceptualization in the unfolding discourse. This study provides an important melding of the fundamentals of interactional, conversational analysis and Cognitive Linguistics.

Although Sweetser and Sizemore do not discuss the simultaneous contributions of verbal discourse markers and gesture in terms of coordinating multiple planes of the discourse (e.g., Schiffrin 1987), it is clearly implied in their analysis. The contribution of coordinated gesture and speech to interactional regulation, discourse content and interpersonal affect implicitly acknowledges what discourse analysts term the interpersonal, actional, textual and ideational planes (e.g., Schiffrin 1987).

In his analysis of complexes of discourse markers in English and Catalan, González directly addresses the discourse analytic notions of multiple discourse planes, along with Goffman's notions of shifts of frame and footing.

As Sweetser and Sizemore found with gesture, González finds that verbal discourse markers are polyfunctional. Individual discourse markers, such as English *well*, *then*, and *I mean* help the speaker guide the listener through the discourse as they signal coherence relations with preceding and following propositions and relate the ideational, interpersonal, actional and text structure to the pragmatic discourse structure. González argues that discourse markers are procedural in nature as speakers use them to direct listeners on how to organize, recover, reformulate and segment the unfolding discourse.

The analysis emphasizes the relevance that clusters of markers (what González calls *compound pragmatic markers*) have in the construction of

interrelations among the text-world and the processing of information by the listener. According to Goffman, a change of frame or footing "implies a change in the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance" (Goffman 1981: 128). González argues that discourse markers are primary devices through which frame shifts become manifest. Moreover, the shifts are seen as coordinating distinct 'contextual realms,' or discourse planes, since they refer to not only the speaker's alignments, but also to the text-world and prior knowledge.

Because of the intrinsic cuing function of discourse markers, compound units would seem to reduce the processing cost of information. González hypothesizes that the frame shift to and from a discourse plane is facilitated if a compound pragmatic marker, rather than a single discourse marker, is used. Although coming from a quite distinct tradition, the role played by compound pragmatic markers in the analysis bears intriguing similarities to Fauconnier and Turner's space builders (see below).

The papers by Sweetser and Sizemore and González investigate various resources used by *adult* interlocutors to regulate face-to-face interaction and provide cues as to the emergent structure of the unfolding discourse. Berman and Ravid examine variation in information packaging in discourse across age (grade school children, adolescents, and adults) and modality (spoken versus written) as well as genre (narrative versus expository) and language (English versus Hebrew). The foci of the study are the textual reflexes arising from the varying information processing pressures involved in immediate time in speech production versus displaced time in written production and how these reflexes change with maturation. The analysis presents a fine-grained model of 'narrative informativeness' which details three types of information units and three categories of 'non-informative' material. This division of the discourse echoes the notion of discourse planes in Sweetser and Sizemore and González. However, Berman and Ravid are concerned with explaining quantitative differences in text produced in different circumstances and by different narrators. In line with previous research, Berman and Ravid find speakers' information packaging varies significantly with age and modality. However, the study provides fresh, somewhat surprising insights into the precise ways this variation occurs.

In terms of differences across modality, spoken texts contain at least twice as many instances of 'non-contentful' information, e.g, reiterations, disfluencies, and discourse markers, as their written counterparts. Surprisingly, the ratio of 'contentful' versus 'non-contentful' information

does not vary with age. Berman and Ravid interpret the stability of the overall ratio across age-groups as reflecting the differences in processing constraints and circumstances (including speaker-listener dynamics present in the face-to-face telling in which, for instance, certain disfluencies may reflect politeness phenomena) of immediate versus displaced text production. Contrary to the researchers' original hypothesis, these types of modality effects appear to be constrained by general, stable cognitive factors that are at play at all ages and not subject to developmental maturation.

Ellis is also interested in issues of language processing and production, but with a special focus on the role of frequency effects in second language learning. Ellis reviews a large body of language processing research which shows processing and production are intimately tuned to input frequency at all linguistic levels from phonotactics, to inflectional morphology, to syntax; these findings provide clear evidence that language users are highly sensitive to the input frequencies. Ellis's particular focus is the implications of these frequency effects for issues in second language learning, especially in terms of the ongoing debate concerning the roles of implicit and explicit learning.

Ellis argues that the data point to the conclusion that language must be "figured out," not simply triggered. Furthermore, language learning involves associative learning of representations that reflect the probabilities of occurrence of form-function mappings; thus, frequency is a key determinant of language learning because 'rules' of language emerge from learners' lifetime analysis of the distributional characteristics of the language input.

However, if there is a strong, universal, implicit 'tallying' process that generally accounts for first language learning, why don't second language learners who have had lots of exposure to the target language get certain elements of the second language right? Ellis notes that the problematic areas for second language learners are often high frequency. He accounts for this seeming contradiction in terms of either low cue saliency or cue conflict between the learners' first language and the target language. In essence, a salient representation of the tense morphology fails to be established. Despite high levels of exposure, the new instances do not serve to entrench the form for the adult second language learner because there is no established representation to which new instances are added. The remedy is explicit learning which establishes the knowledge base through consciously drawing the learner's attention to the low-saliency form.

Ellis's thorough, carefully argued presentation of the current research suggests that the implicit versus explicit learning debate sets up a false dichotomy and that both types of learning play essential, interconnected roles in second language learning. Ellis's research represents a major sea-change in second language learning research, providing strong psycholinguistic evidence consistent with a Cognitive Linguistic model and challenging the widely held notion that language learning is unique and disconnected from other types of human learning.

Janzen is concerned with how speakers signal shifting vantage points in constructing interactional discourse. His focus is on the interaction of perspective shifts and grammar in face-to-face conversations in American Sign Language (ASL). Once again, Goffman's notions of frame and footing shifts are pertinent. The study presents a particularly persuasive case for shifts in alignment and footing since perspective shifts are overtly marked in ASL. Janzen notes speakers often relate events and stories from their own vantage points, but they also regularly represent events from someone else's view. The choice of which viewing arrangement speakers and signers choose reflects how they wish to portray an event, that is, the choice of viewing arrangement offers a particular construal of the scene (Langacker 1991: 315). Even though perspective shifting appears to be ubiquitous in narrative and other face-to-face discourse, listeners are likely to need cues to be able to appropriately interpret the shifts. Thus, we expect viewpoint shifts to be reflected in linguistic choices and, in Gumperz' (e.g., 1982) terms, language-specific contextualization cues. Janzen's research brings new insights to our understanding of how shifts in perspective are accomplished in ASL.

Janzen argues that with certain types of perspective shifts in rotated space prototypical clause structure (indicated by hand configuration) is often not in evidence. Within the unfolding narrative, the signers show a preference for topic-comment structure with the result that many later clauses lack a clear Subject Verb Object order. Indeed, a number of utterances challenge a more traditional notion of clause structure that depends on a linearly ordered string of lexical items.

These findings are fully consonant with findings from discourse analysts who have often argued that once one looks carefully at spontaneous spoken speech, rather than giving priority to written text, one finds that there are few chunks of language that actually correspond to a 'sentence' or full clause. Topicalizing constructions, which do not have canonical syntax, and do not easily conform to formal analysis, often dominate.

From the second language learning perspective, Liamkina's study also highlights the need to consider grammar choices in terms of vantage point and construal within discourse contexts. She notes that a good deal of anecdotal evidence indicates advanced L2 learners of German use dative complements in non-nativelike ways, even though dative case represents one of the earliest grammar points introduced in most German language curricula. However, the particular distinctions between native speaker and non-native speaker use of dative complements has not been examined previously.

Liamkina provides experimental evidence comparing the use of dative complements in the narratives of native speakers of German to its use in the narratives of advanced L2 German learners. In line with Smith's (1987) polysemy analysis of dative case, her findings show that native speakers use dative to indicate a range of subtle meanings and that their use of dative complements is determined by their interpretation of participant roles, which in turn depends on a particular construal of the situation. In the native speaker discourse, then, use of dative is not simply a categorical, grammar issue, but rather a function of perspective-taking and other discoursal factors. In contrast, the advanced L2 learners tended to use dative complements in a more narrow way, almost exclusively indicating patient or recipient roles.

Liamkina persuasively argues for the need for a polysemy analysis of German case combined with comparative discourse analysis in order to more clearly understand just how case is used by native speakers in creating narrative viewpoint and to pinpoint L2 learners' misconceptualization of its use. She further argues that a primary reason for L2 learners' failure to learn nativelike use of dative stems from the fact that most German language texts present dative complements in a few decontextualized sentences, followed by a list of verbs whose direct objects occur in the dative case. She concludes that L2 learners are not likely to reach nativelike proficiency until second language teachers and textbook writers view teaching grammatical phenomena as teaching how to create contextualized meanings with linguistic resources within a discursive (rather than sentence-level) environment.

The papers by Dancygier, Fujii, and Israel are also concerned with issues of speaker stance, tracing referents through the discourse, and shifting perspective. Additionally, these three papers specifically draw on Mental Space Theory and Blending Theory as a framework for their analyses.

Some of the most interesting connections between discourse analysis and Cognitive Linguistics come in the area of Mental Space Theory and Blending Theory. Mental Space Theory attempts to provide a principled model of referential discourse structure, which accounts for shifts in viewpoint and perspective, including temporal perspective; these are also issues of central importance to discourse analysts. In line with both discourse analysis and other cognitive linguistic perspectives, Mental Space Theory and Blending Theory draw heavily on the constructs of schema and frame. As mentioned above, the primary divergence between discourse and cognitive traditions in terms of schema and frame appears to be in degree of focus on the ideational versus socio-cultural and the interpersonal.

The contrast is perhaps sharpest in terms of Bateson's (1972) and Goffman's view of frames as socially and culturally entrenched principles governing the organization of social experience, which allow us to create moment-by-moment adjustments as we interpret and engage in face-to-face interaction. For instance, within this perspective, frames and their attendant linguistic cues help us to determine if the moment of interaction we are engaged in should be interpreted as unfriendly sparring or play. A strong interpersonal dimension is involved, which has received relatively little attention in Mental Space Theory and Blending Theory. In spite of the differences in focus, the dynamic shifts in communicators' footing discussed by Goffman in terms of Author, Principal, and Animator seem highly analogous to specific "participant role" discussed by Langacker and other Cognitive Linguists.

Mental Space Theory (Cutrer 1994; Fauconnier 1997; Fauconnier and Turner 2002) attempts to model the ways mental representations, as prompted by the linguistic input, are organized and related in discourse. The theory assumes that language does not refer directly to the outside world, but rather prompts the on-line construction of cognitive representations, or mental spaces. A mental space is a sort of minimal unit of conceptualization as it provides the basic viewing frame for any conceived proposition. At any point in a discourse, one or more spaces are connected in a configuration of some sort. Focus and viewpoint are always present. In the simplest configuration, both of these functions are located in a single space, but as new spaces are added to a configuration, focus and viewpoint may diverge between spaces. Takahashi (2006) notes that it is not hard to imagine that the types of shifts in footing discussed by Goffman would affect the perspectives, i.e., focus and viewpoint, taken by each of the participants in the speech event as they navigate through intricate

configurations of mental spaces being constructed in their ongoing interaction.

Blending (Fauconnier and Turner 1996, 1998a, 1998b, 2002) is hypothesized to be a ubiquitous cognitive mechanism that allows humans to conceptualize situations as mental constructs involving projections from two or more mental spaces. It is a theory of meaning construction, in which elements from activated, knowledge structures, or *mental spaces*, are selectively projected to a new, third space, the blended space. The projected elements are re-assembled in the blended space to create a new emergent representation, or *blend*. Takahashi (2006) suggests that the dynamic aspect of Goffman's frame analysis pertains most naturally to the process of "selective projection" of conceptual elements from input spaces to the blended space, for such projection is no doubt regulated in part by how the situation is interpreted interactionally.

Fujii provides a particularly insightful example of how discourse analytic approaches and Blending Theory can inform each other in her analysis of naturally occurring, humorous discourse. She does so by incorporating social, interpersonal and contextual factors with the ideational content typically represented in mental spaces. Drawing on Coulson's (1996) earlier blending analyses of humor, Fujii finds that the projection of mappings from multiple incongruous mental spaces provides important insights into the interpretation of the texts. Importantly, she argues that content-level incongruity and the blends alone do not fully account for the humorous interpretation.

Fujii argues that social and contextual aspects of knowledge frames also play a central role in the on-line meaning construction of these humorous blends. In particular, she examines the role of interactional dynamics, such as solidarity building, self-deprecation and group membership, in cuing and reinforcing the overall frame of "play" (Goffman 1974; Tannen 1993). She argues that the humor in these texts is created through multiple layers of incongruities at both ideational and interpersonal levels. Moreover, she argues that an additional dynamic involves the fact that the content of the resulting blend represents a counterfactual contrast to the participants' understanding of reality.

The unique contribution of Fujii's work is to highlight projection of contrasting socio-cultural values and interpersonal dynamics to create a balance of self-deprecation and solidarity within the blended space in everyday humor. The analysis emphasizes the role of interactional frames that define the social meanings of the text and demonstrates the insightful contribution that interactional sociolinguistics can make to Blending

Theory. In light of the importance of recognizing multiple, simultaneous discourse planes demonstrated by Sweetser and Sizemore, González, Berman and Ravid, further refinement on how to represent these multiple, interacting planes within Mental Space and Blending Theory would seem to be a promising area for future research.

As with several other papers in this volume, the phenomenon of shifting stance and viewpoint is at the heart of Dancygier's study. In particular, she is concerned with the longstanding controversy of just how pronouns in narrative discourse function to structure narrative viewpoint and narrative voice. She examines a range of viewpoint shifts, including shifts between a first person narrator and segments of the story told through the perspective of a third person character. Based on an analysis of several pieces of fiction and autobiography, Dancygier argues that all such viewpoint-related shifts are best interpreted in terms of the phenomena described by Mental Space Theory and Blending Theory.

Previous literary analyses of viewpoint shift have primarily relied on postulating the narrator as a separate participant in order to account for separation of viewpoint and focus, such as when the adult character/narrator switches from ongoing first person self-reference to third person when she reflects on herself as a child, a kind of split-reference phenomenon. Dancygier's analysis demonstrates that choices of pronominal reference in the narrative serve to establish and maintain narrative viewpoint in ways which go beyond straightforward representation of character's speech and thought. Dancygier's analysis illustrates the incisive, new insights that can emerge from taking a contextualized Cognitive Linguistics approach to longstanding issues in narrative studies. The analysis echoes Tannen's (1987) point that virtually all literary devices have their basis in everyday language, a point reminiscent of Lakoff and Johnson's (1980, 1999) original insight concerning the ubiquity of metaphor in everyday language and cognition.

Israel offers an innovative application of Mental Space Theory by pointing out that establishing the joint attention necessary to engage in routine speech events necessarily requires coordination of mental spaces across participants. He builds on this insight in order to explain the somewhat mysterious phenomenon of how young children learn to appropriately use mental state verbs, such as *wish, guess,* and *wonder*, which refer to private, internal states unavailable for outside inspection. Noting that no child ever directly experiences another person's thoughts or desires and given the early age at which these 'abstract' verbs are acquired, Israel concludes that something seems to aid young children in learning these

verbs. Analysis of children's early language shows that children first use these verbs in their discursive, speech act role rather than their depictive role. Since speech acts in general serve to coordinate joint attention and activity among conversational participants, children's participation in such acts requires an implicit understanding of the ways other people's beliefs and desires can relate to their actions. The speech act uses of mental state verbs depend on this implicit understanding and so effectively highlight the otherwise invisible subjective states of conversational participants, even when the verbs do not directly refer to these mental states.

Israel argues the discursive uses are relatively easy to learn because they index communicative acts which children understand well and engage in often. Since these acts consist essentially in the coordination of mental states across speech act participants, these uses also effectively highlight the sorts of mental contents which the verbs ultimately denote. Through repeated exposure to and practice with the discursive uses, children learn different ways of framing the content of one mental space inside another, and as these framings become increasingly routine, children can reconstrue a framing space itself as a focus of attention.

While Israel focuses on what makes learning mental state verbs relatively easy for young children, Marras and Cadierno examine what makes the acquisition of *gustar* constructions by adult English speakers learning Spanish difficult, particularly in comparison to the acquisition of *like* constructions by Spanish speakers learning English. Nothing within second language theories of L1 interference, frequency of the input, or formal models of syntax addresses this asymmetry. Marras and Caderieno provide an answer based on established aspects of human cognition and processing, such as prototypes and trajector/landmark configurations.

The analysis draws on Langacker's Cognitive Grammar, which involves linking between syntax slots and participant roles. Marras and Cadierno note that while neither the English *like* construction, *She/he likes chocolate,* nor the Spanish *gustar* construction, *Le gusta el chocolate,* act like their respective prototypical clause types, the English construction more closely matches the typical configuration. The subject, in the English construction is not the agent, but the experiencer; the participant coded by the direct object is not the patient (e.g., recipient of some force) but the entity with which the experiencer establishes some kind of mental contact. In the Spanish construction, the participant in subject slot is the stimulus; the experiencer appears in the indirect object position. The configuration in the Spanish construction represents a conflict between the natural level of prominence of the participant role of the experiencer (which is more

typically in subject position) and the syntactic prominence of the subject. In the case of the English construction, we find the expected correspondence between the natural prominence of the experiencer and its syntactic subject position. Thus, the Spanish construction represents a reversal of the prototypical linking between the syntactic slot and the participant roles. The analysis provides a straightforward (and accurate) prediction that Spanish learners of English should find the *like* construction easier to learn. The paper thus demonstrates the usefulness of a cognitive approach to second language learning by providing a systematic explanation of a language learning puzzle in terms of the universal aspects of human cognition and language processing.

3. Part II: Applying discourse and corpus perspectives to issues in Cognitive Linguistics

The second set of papers also represent important interactions between discourse analysis and Cognitive Linguistics. With these papers, however, the focus is on how discourse and corpus analyses can be used as tools to illuminate specific issues in Cognitive Linguistics.

Smith and Budwig examine the basic claim in Cognitive Linguistics that syntax itself is meaningful by studying young children's developing use of transitive and intransitive constructions to perform particular discursive functions as they engage in spontaneous conversation. The data under consideration involves the peer interactions of 4 year olds and 7 year olds. They find evidence of a transition from early, contextually restricted use of transitive and intransitive constructions for younger children to later, more varied use by children age 7. In particular, they explore the hypothesis that children gradually learn to systematically use different constructions (transitive and intransitive) in order to offer different construals on a scene. The discourse of the children in this study revealed a complex interaction between the child's developing sense of others in social interactions and their variable use of transitive and intransitive constructions to accomplish their communicative ends. These findings echo both discourse analysts' claims that knowledge of language is knowledge of how language is used (e.g., Hymes 1972) and developmental Cognitive Linguistics claims that "language structure emerges from language use" (Tomasello 2003: 327).

Their overall findings suggest that children pay attention to meaning during construction use. Children are not just using transitive and intransitive constructions in static ways, but over the school-age years,

children are employing grammatical choices to position the self and others in discourse for a wider array of discursive purposes. The findings highlight the extended nature of learning to use constructions, first to adopt a prototypical perspective and then gradually to add salient deviations when construing events in discourse. Smith and Budwig's findings resonate with those of Israel who argues for the gradual development of uses of the grammar and lexicon (e.g., development of mental state verbs from discursive to depictive uses) paralleling the gradual development of the child's theory of mind and its links to expanding social interaction. The study highlights the need to study children's language development within contextualized, extended interaction and to attend not only to production of grammatical forms but also how forms are manipulated to create meaning.

Achard is also concerned with the tenet that syntactic constructions are meaningful. Drawing on a large corpus of naturally occurring discourse, Achard examines a central claim of formal syntax, i.e., the hypotheses that syntactic patterns are templates devoid of meaning and that a verb's occurrence in a particular syntactic pattern is determined by its lexically designated argument structure. The focus of the analysis is the distribution and contextual use of two syntactic constructions – 'object raising' and '*croire* union' – which have been widely touted as 'diagnostic' patterns for unergative versus unaccusative verbs in French. Achard reasons that these syntactic constructions can only provide compelling evidence of a verb's argument structure if they apply to a wide set of semantically diverse verbs and if no semantic or pragmatic patterns can be found to account for the verb's distribution. The analysis of the distribution of verbs and contextual use of the two constructions in a corpus of 10,000,000 words from French newspapers reveals that rather than representing widely applicable patterns in which a broad range of verbs occur, both syntactic patterns occur infrequently, with a limited set of verbs, and with definite semantic-pragmatic constraints. In essence, the careful analysis of the naturally occurring uses of the 'object raising' and '*croire* union' indicate that they are meaningful constructions whose general semantics matches that of the verbs which occur with them. The corpus analysis offers strong evidence for a form-function relationship in the use of particular constructions and for the verbs which occur in those constructions.

Shaffer explores the usefulness of examining the contextualized use of phonological variants of individual words in order to examine issues of polysemy and semantic extension in American Sign Language (ASL). Her analysis of naturally occurring ASL narratives yields a number of insights. She finds clear evidence that related but phonologically distinct ASL forms

represent semantic extensions from a central form, thus constituting systematically related polysemy networks. The means of extension themselves are motivated and often even iconic. While the paper focuses on a single word, the sign commonly glossed as BORING, the analysis points to rich possibilities for studying principles of semantic extension more generally. The analysis also reveals complex interaction between the expression of speaker subjectivity, information ordering and clausal scope in ASL and the various uses of a single sign.

Like Janzen, Shaffer emphasizes that grammatical coding, or variation in form, reflects how speakers construe events and situations in different ways for differing purposes; thus, variations in construal are coded in the grammar. In Shaffer's data these differences in construal are marked at the morphological and phonological levels, leading to polysemous meanings that are related in multiple and systematic ways. Following Tuggy (2003) and Tyler and Evans (2001, 2003) she presents evidence that context is necessary for establishing, interpreting and maintaining these extended meanings.

Moder analyzes a corpus of 500,000 words of naturally occurring discourse in order to examine the interaction between discourse context and the varying functions of similes and metaphors. She notes that previous studies have typically examined metaphors and similes isolated from their discourse context or using researcher-generated examples. Her findings show that the function and meanings of similes and metaphors are variable and sensitive to discourse context.

The contextual analysis also reveals a number of complex patterns which show that novel and conventional metaphors function differently in the discourse, as do novel and conventional similes.

One of the primary distinctions between similes and metaphors may lie in the cognitive cues they provide to the hearer. In this corpus, similes were most often used to introduce a mapping which was not extended in the discourse. Most commonly, the simile introduced the mapping and then explicated it in one or two immediately following sentences. Similes appear to have been used here to consciously draw the listeners' attention to the upcoming mapping. This would support the view of Fauconnier and Turner (2002) that a form such as *like* functions to alert the hearer to an otherwise unconscious blending process. In contrast, nominative metaphors tended to sum up more extensive discussions or arguments made in the preceding discourse. In Fauconnier and Turner's model, this may be related to the concept of compression. The metaphorical expression serves to compress the vital relations expressed throughout the discourse into a blended

network that neatly packages a set of diffuse inferences. Ultimately, this study demonstrates that the study of naturally-occurring discourse contexts is essential for adequately describing similes and metaphors.

For some time, cognitive metaphor theorists have recognized that projection from source to target is partial; explaining what the constraints on projection are has been elusive. Grady's work (e.g., 1997, 1999) on experiential correlation contributed substantially to clarifying the issue, but projection principles remain incomplete. Cameron takes up the issue by shifting focus and approach from general discourse and cognitive dimensions of metaphor to interactionally-situated context and social dimensions. She terms her approach systematic metaphor and emphasizes a constrained, inductive methodology which looks to thematic connectedness of 'vehicle' (source domain), and then more particularized, constrained patterns of links between 'vehicle' and 'topic' (target) domains. She further argues that the metaphors generated by an approach that stays as close as possible to the actual language found in the situated context avoids many of the partial projection problems of cognitive metaphor theory.

As Moder also noted, fine-grained, situated analyses of metaphor in naturally occurring discourse are still quite rare in the field of metaphor studies and offer important insights into how metaphor is used. In this chapter, Cameron examines the situated, systematic metaphors that a teacher and her students use to talk about literacy events in naturally occurring interactions in a public school setting. She argues that there is much to be learned from attending to the exact language used in particular social contexts, rather than focusing exclusively on more general metaphors found in a language.

In cognitive metaphor theory, metaphor is viewed primarily as a mental phenomenon, which reflects rather stable mappings between mental domains. A situated social-cultural study investigates how people employ metaphor in the dynamics of social interaction, thus adding a focus on the communicative function of metaphor. Cameron finds that metaphorical expressions in contextualized talk have important affective and regulatory dimensions; they are chosen by speakers, not just for their conceptual content, but also to express particular feelings, values or attitudes. Functionallly, idiomatic metaphorical expressions are often employed in talk as summarizing and topic-closing devices.

The final paper steps away from discourse context per se and focuses instead on a theoretically grounded refinement of metaphorical mappings. Like Cameron, Grady is interested in developing a more precise account of source-target mappings. In this chapter, he explores specific relational

properties or parameters that constrain the relationship between metaphorical source and target. He notes that previous work in conceptual metaphor theory has largely discredited the notion that metaphors are based on objective physical similarity or resemblance. This is particularly the case with primary metaphors based on experiential correlation, such as MORE IS UP, which arise from human observations of the frequent co-occurrence of two events or attributes from different cognitive domains, in this case an increase in vertical elevation and an increase in amount. On the face of it, no obvious similarities between the co-occurring events exists; the metaphor appears to be based simply on the strong association formed from frequently observing that as we add more to a pile or into a container, the vertical level of the stacked or contained material rises. Nevertheless, it also seems clear that there are myriad frequently co-occurring events that do not become conceptually associated such that they form the basis for primary metaphors. Grady hypothesizes that, in fact, primary metaphors do involve a kind of similarity between the source and target, but that the similarities are at a much more abstract level than previously identified. He further argues that absent at least some of these shared properties between source and target, metaphorical mappings do not occur.

By examining a set of primary metaphors, he identifies a set of shared parameters that are prerequisite for metaphoric mapping to occur. These parameters include properties such as boundedness, scalarity/dimensionality, and ontological category (i.e., whether the source and target concepts are construed, for purposes of a given conceptualization as an Event, Process, Thing, Relation, etc). Thus he argues that the structure shared by source and target concept pairs like Heavy and Difficult, More and Up, and Close and Similar is at a more abstract level and "topological" than image-schematic. Grady calls this level of structure the superschematic level and argues that it is a necessary (but not sufficient) condition for primary metaphor that source and target can be construed as sharing the same superschematic structure, e.g., both are scalar properties. In effect, this Superschema Rule is an elaboration of the intuitive idea that the metaphorical source concept must fit the "conceptual slot" otherwise occupied by the target.

Grady further notes that the superschema properties he identifies are already established as foundational in grammar. Thus, his analysis adds more evidence for 'the generalization commitment,' first articulated by Lakoff (1990). As predicted, general cognitive processes and constraints which are evident in one area of language, here grammatical patterns, are also evident in what traditionally would seem to be a completely unrelated

area, here metaphor. Grady's analysis represents a significant contribution to conceptual metaphor theory, which promises not only to help us clarify the nature of metaphor, but even more interesting to contribute to our understanding of conceptual structure.

4. Conclusion

These papers were originally presented at the 2003 Georgetown University Round Table on Languages and Linguistics. The theme of that conference was 'Language in Use: Cognitive and Discourse Approaches to Language and Language Learning.' The aim of GURT 2003 was to bring together research from various cognitive and discourse perspectives that emphasize the shared notions that the properties of language and the process of language learning crucially involve how language is used in context and how these patterns relate to cognition more generally. The success of meeting that aim is admirably reflected in the papers in this volume which represent a synergistic weaving together of Cognitive Linguistics and discourse analytical frameworks as they address issues ranging from first and second language learning to discourse structuring to fundamental questions about metaphor and contextualized grammatical structure. The volume represents an important new development in the usage-based study of language.

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Part I

Discourse resources in meaning construction and language processing: Discourse management, speaker stance and perspective, cognitive constraints and participant roles

Personal and interpersonal gesture spaces: Functional contrasts in language and gesture

Eve Sweetser and Marisa Sizemore

1. Introduction

Gesture and speech jointly enact – and regulate – communicative interaction. Often they share in representing communicative content; for example, a speaker saying "we drove all around the park" may trace a path with her finger as she speaks. Perhaps only the gesture will allow the interlocutor to know whether the linguistic form "around the park" means a circuit of the park's periphery or a meandering course through the park.[1] Gestures also regulate discourse; Kendon (1995) cites the use of a two-handed "barrier" gesture in southern Italian discourse as (among other things) a marker of breaking off or refusing discourse interaction, while Sweetser (1998) gives examples of the palm-out "barrier" hand used by English speakers to fend off interruption.

Many researchers attest to the partly overlapping, partly complementary relationship between the content of gesture and that of the speech it accompanies.[2] A speaker may gesture upwards as she says *up the drainpipe* (McNeill 1992), but a speaker may also gesturally present content which is not present in the speech track and adds information to it (for example, the *manner* of the agent's motion up the drainpipe).

The first point of this paper is that language and gesture share the load of interactional regulation in a way parallel to the distribution of content: the two modalities may both overlap and supplement each other, in doing regulatory work. Our second point will be that interactional regulation often uses different parts of available gestural space than do content gestures: in general, there are functionally distinct sub-spaces of gesture space, and people do not use them for the same purposes.

In the examples discussed below, speakers show at least three crucial divisions of space. The first is personal gesture space, which has been recognized by many researchers as being a semicircular space – or perhaps better, a quarter-globe – in front of the speaker's trunk and head.[3]

The second is inter-speaker space, what we will call *interpersonal space*, which is the space in between two personal gesture spaces, along the

line between the interlocutors. Obviously, speakers may be seated too close to each other for there to be a separate "in-between" space; but the American English speakers whom we have observed tend to place themselves so that personal gesture spaces do not overlap, when they are allowed enough space to do so. In our data, gesture which reaches into this interpersonal space, and/or beyond it into the listener's personal space, has two kinds of function. One is floor-claiming: a gestural occupation of the interactionally shared space marks the speaker's intent to occupy the shared auditory space as well. Such gestures often (though not invariably) co-occur with linguistic turn-taking devices for floor-claiming, such as *Listen* or *OK*. The other is social interaction: speakers reach into the shared space to mark shared social goals and shared affect as the basis for the accompanying utterance. There are examples in the literature (Furuyama 2000; Goodwin 2000) of collectively created content also requiring one speaker's reaching into the other's gestural space; our data did not involve such examples.

The third relevant spatial division is the "unclaimed" surrounding space. Özyurek (2000) has noted that there are significant differences between gestures in a two-person exchange and in a three-person exchange where the interlocutors are seated in a circle. She videotaped speakers gesturing as they recounted an incident from a Sylvester and Tweety Bird cartoon, wherein "Granny" (the owner of the canary Tweety) catches Sylvester the cat sneaking up on Tweety, and evicts Sylvester by throwing him out the window. Although Granny throws the cat forwards away from her body in the cartoon, in two-person exchanges the narrators tend to enact their "throwing" motion (accompanying words such as *she throws him out the window*) to one side, away from the shared interpersonal space. In a three-person group seated in a circle, the only adjacent space which is truly "extrapersonal" is behind the speaker – all space in front of or directly beside the speaker is "occupied." And indeed, speakers do a "throwing out" gesture backwards over the dominant-side shoulder – a very different motion from the one that Granny is pictured as doing in the cartoon.

In the examples presented here, gesturers do very different things with interpersonal and extrapersonal space. Extrapersonal space is an unclaimed resource, an adjunct to personal gesture space which can be annexed (as in Özyurek's example above) to extend it and sometimes contrast with it.

Two crucial factors must be stressed here. The first is that there is no fixed size for a person's gesture space, even within a relatively linguistically homogeneous group. It is long documented (Efron [1941]1972; McNeill 1992; Kendon 2004) that average gesture space sizes,

like preferred interpersonal distances, covary with cultural and linguistic community. For example, the individual Italian gesture space is larger than the corresponding Anglo-American personal gesture space, on the average (Kendon 2004). However, it is impossible to say that if a generic Anglo-American speaker reaches more than N centimeters forward or sideways from her body, she must be reaching outside her personal gesture space. If we were engaged in cross-speaker comparisons, we would need to take into account each person's body size and arm length; the extent of a reach is proportional, not a fixed distance. But further (as will be clearly evident in some of the examples discussed below) we must take into account the fact that some speakers gesture more expansively than others, and the same speaker may gesture more expansively in one context than in another. The normal extent of personal gesture space has to be individually observed in context before we can say that a particular speaker has reached beyond her immediate personal space. Our data will involve cases where speakers reach outside of the habitual space range they are using for manual gesture *in the observed speech context*.

The second relevant issue is that the personal gesture space is very polyfunctional. We know that speakers can use their personal gesture spaces to do interactional regulation, as well as to gesture about content, for example. However, when they reach outside of their personal space into the interpersonal space, this is a sure sign that (1) they are engaged in regulating the speech interaction, and (2) that the regulation is highlighted rather than backgrounded.

We will conclude the paper with some remarks on the similarities and differences between the use of gestural space in two-person or small-group interaction, and in lecture settings. Live-audience lecturing is a highly dialogic discourse form, albeit largely (not entirely) vocally dominated by one speaker. Interactional uses of gesture are frequent in the videotaped lectures we have examined. But the "personal" gesture space of a lecturer is much larger than that of a participant in a smaller-group conversational exchange. Standing posture and physical distance from interlocutors combine to allow very fluid extension of personal gesture space, with no clear delineation between personal and interpersonal spaces. It would be well worth doing further comparison of spatial divisions in lecturers' gesture space with those seen in conversational interaction.

2. Data and methods

The Berkeley Gesture Project (BGP) group has been working together on analysis of speech-accompanying gesture. A sub-project of the BGP has been the collection and analysis of videotaped conversations between friends, about the problems of finding and keeping housing in the San Francisco Bay Area. For these Bay Area housing tapes, subjects were asked to bring a friend, so that the taped conversation would be between people who already knew each other. Each session lasted about half an hour. Subjects were recruited both via acquaintance networks of the researchers and via posters around the campus area; only native speakers of English were recruited. They were paid $10 each, and were told that the researchers were interested in studying communication; no specific reference to gesture was made in the information they were given. Transcription and analysis of the data discussed here has been a joint project of Eve Sweetser, Marisa Sizemore, Susanne Stadlbauer, and Sabrina Cano Morales, with input from Mischa Park-Doob and Nathaniel Smith. Most of the data in this paper comes from one of the conversations about housing, a recording made by Marisa Sizemore. This data is contrasted at the end with one clip from a public lecture given in the 1980's at the UCB Cognitive Science Colloquium; Fey Parrill worked on the analysis of this video with Eve Sweetser.

The housing discussion tape from which examples (1–6) are taken is a conversation between two women. S1 is twenty-six years old at the time of filming, was brought up in Northern California and is still living there. S2 is twenty-five, born and raised in Pennsylvania, and had been living three years in the Bay Area at the time of the taping session. They are good friends, and co-workers at the same business in Berkeley. They give every sign of enjoying their interaction, even in the presence of the videocamera. An added factor worthy of mention is that S1 is apparently a right-dominant gesturer, normally performing major single-handed gestures with her right hand; while S2's dominant hand is apparently her left hand.

Even from the few selected freeze-frames we will present, it is readily apparent that S1 has both a more high-interaction conversational style and a distinctly larger gesture space than S2. S1's rest position is often with her arms partly outstretched on the table in front of her, while S2's rest position is with her hands retracted close to her body, sometimes in her lap. S1's normal extent for personal gesture space is correspondingly larger than S2's. Therefore, S1 has to reach even farther to get beyond her usual boundaries – and she does, when she needs to.

3. Using gesture to hold onto the floor

In our first example S2 reaches out of her usual gesture space towards her interlocutor in order to keep hold of the floor; in fact she is not maintaining her floor hold against actual competition in this case, but rather against S1's high-interactive listener style.

In example (1), the subject of discussion is a past roommate of S2, who used to wash dishes so incompletely that S2 would rewash them.

(1): *what happened was*

S2: [So then]
S1: [I already] washed those
S2: [But what ha-]
S1: [- but yeah -]
S2: But wha-
S1: uh-huh
S2: But what happened was, is,
I didn't have the balls to tell her
that she was a horrible dishwasher,
S1: Yeah
S2: so I would wash the dishes all over again.
And I would be so full…

S2 makes successive floor-claiming attempts (*so then*, *but what ha-*, *but wha-*), accompanied by progressively longer extensions of her left (dominant) palm-down spread 5 hand, culminating in a full stretch and a hand down on the table as she gets out her first full phrase "what happened was" (full extent on *hap* in *happened*). During S2's initial attempts, S1 is both verbally "channeling" imagined responses of S2's roommate ("I already washed those") and gesturally miming dishwashing as she produces the back-channeling *uh-huh*.

Once S2 has the floor, she pounds her left fist up and down as she says *I didn't have the balls to tell her that she was a horrible dishwasher*, then

mimes dishwashing and her own disgusted face while doing it as she says *so I would wash the dishes all over again.*

Example (1) is a classic example of its kind. *So then* and *but* (followed by the WH-cleft *what happened was*) are linguistic markers that the speaker does not want to relinquish the floor. *So then* indicates narrative continuity, *but* indicates topical contrast within a related topic area; and *what happened was* presupposes that the topic of "something happening" is already on the floor, and the speaker is filling in added information. Gesture and language are fully cooperating to help the speaker maintain the floor long enough to tell her anecdote. As we shall see in example (5) below, the reach with a deictic-point handshape seems related to claiming a disputed floor, while flat-palm-down reaches (examples 2–4) are more standard for starting up a new topic on an open floor. Obviously, both these handshapes have many more uses; but there seems a consistent contrast between these two uses.

4. Putting a new topic on the floor

In a closely related use of gestural reaching, S1 reaches out to S2 in example (2) as she asks a question which introduces a new topic – that of shared meals in a shared housing situation. She has no apparent need to expend energy on claiming the floor – and indeed there is no special linguistic marker of topic-shift (the fact that her question is about a slightly new topic rather than about what S2 has just been saying is not linguistically marked). However, as S2 does in example (1), here S1 reaches out her palm-down hand beyond her usual content-gestural space (indeed, to the edge of S1's normal content space).

(2): *Did you guys… eat meals together*?

S2: ... [It's it's fífty-fifty for mè]
S1: [Dìd you guys]
eat méals together?
S2: Yés we dìd
S1: Lìke at ni- every nìght you ate mèals togé[ther]
S2: [Nó]
S1: Or or just móstly [you ...]
S2: [Nó] [no]
S1: So you nèver assúmed
+like I'm gonna gò hòme and éat

S2: [Noo]
S1: [Like] You might …

S1 is bringing up a new topic. She reaches out her right (dominant) hand, palm-down, as she starts her initial question – the farthest extent of the reach is co-timed with *you* in *did you guys eat meals together?* Her subsequent gestures relate to content – back-and-forth motion to mark "every night" as a regular pattern, circular motion of the left hand to indicate "mostly" for a repetitive but more general pattern, and a palms-down sweep for negation with "never assumed."

Speakers do not reach out in this way at every floor-exchange; turn-taking may involve many nonverbal or gestural cues (gaze, hand-movement or non-movement, bodily orientation and position, etc.). Reaches like this accompany specially marked transitions (e.g., a new topic) or noticeable negotiation about the floor – in short, they accompany (and perhaps help to create) heightened meta-awareness of turn structure.

5. Marking affective connection or involvement

In the next two examples, S1 makes her two farthest reaches towards S2 during this conversation. She reaches not only outside of her own gesture space into interpersonal space, but into the periphery of S2's personal gesture space. In both cases, she is not only initiating a new topic, but taking a social risk which demands support from a concomitant affirmation of camaraderie and solidarity. The physical reaching into S2's space is a way of laying claim to, or maintaining, the shared solidarity presupposed by the risky topic being opened.

In example (3), S1 suggests that she expose her own failings as a roommate. *Allright* is a linguistic marker of putting a new topic on the floor. The question *you wanna know…um…why I'm a horrible person to live with?* requests S2's complicity – it invites her to express interest in this self-exposure of S1's failings. The hesitation *um* suggests that the phrasing of the indirect question (*why I'm a horrible person to live with*) is consciously thought about, and gives some sense of irony to this apparent strong self-condemnation: rather than S1's own direct self-assessment, this may be a humorous "channeling" of an imagined poorly-matched roommate's views. S2 complies with S1's request for interest, saying *sure, yeah*. S1 continues her request for expression of shared interest in the topic with *You ready for this?*, which also serves to forestall negative judgment on the following revelations, but does so rather ironically – we don't really expect S1 to make truly shocking self-revelations in this setting, and indeed she is not going to. (She is about to tell S2 about "crimes" such as leaving partially consumed sodas sitting around the apartment; they will be laughing together as this unfolds.) S2, entering into the spirit, smilingly agrees and nods as she says that *I'd like to hear that.*

(3): *You wanna know*

S1: Allright, you wanna know…um…
why I'm a horrible person to live with?
S2: Sure, [yeah…
S1: [You ready for this?]
S2: I'd like] to hear that.

S1 takes the floor for the new topic (linguistically launched by the marker *allright*) by putting out her palm-down right (dominant) B hand into

shared space, touching palm to table at *know*. This unusually extended reach towards S2 seems to convey a message of solidarity, and even of complicity in the following shared secrets.

In example (4), slightly later in the conversation, S1 is instead prompting a similar self-revelation from S2. S2 has indicated that she is picky about certain aspects of the maintenance of shared living space – too picky to live with some roommates. S1 invites her to elaborate on this. *OK* expresses entrance on a new topic; and the slight hesitation before the phrasing *you're hyper-anal about* adds the same sense of irony – this is not S2's own phrasing, in some sense – which we noted in the previous example. Finally *this is fun* completes S1's request – and S1 sits back with the same air of enjoyable complicity manifested by S2 when agreeing to listen to S1's self-revelations in (3). S2, meanwhile, has responded *OK*, and is grinning in a way that shows both embarrassment and amusement.

(4): *OK, tell me*

S1: OK, tell me the things you're - [you're] hyper-anal about, this is fun.
S2: [OK]

S1 leans forward sharply at the start of this utterance, with palm-down 5 right hand projecting forwards into shared space. She taps the table twice with her palm (*things* and *you're*) and then leans back. The forward lean and outreaching hand mark both her seizing of a turn, and her invitation to S2 to interpret her as undertaking a joint between-friends enterprise here. The taps give added emphasis. The following backwards lean and the gaze returning to down, as hands return to rest in front of her, express her readiness to listen rather than continuing her active turn; *this is fun* gives her expected evaluation of the material to be listened to.

S1's forwards lean in (4) – as she prompts S2 to self-revelation – is not paralleled in (3) where she is instead offering self-revelation. The unusually

extended palm-down forwards reach is extremely similar in the two examples, however, marking a common factor of stress on solidarity when face is at risk for one of the two participants. The forwards lean is also present in another example (5) where S1 is saying something which potentially puts her addressee's face (rather than her own) at risk.

In (5), S2 is discussing a past roommate who did not do a good job of dish-washing. As she explains the problem, S1 is amused – the usual problem between roommates is simply that someone fails to wash dishes. S1 teases S2, laughing as she interjects a rephrasing of the described situation as *OK, so she'd wash the dishes but you had a problem with how she did it*. *OK* here takes the floor, and marks agreement or shared content. *So* seems to more explicitly mark S1's utterance as a rephrasing of S2's, and together with S1's slightly rising intonation it invites S2 to accept S1's teasing assessment that S2 is being fussy and demanding ("hyper-anal") by asking not merely that dishes be washed, but that they be washed well. Since there is no indication that S1 thinks it would really be OK to leave the undersides of the dishes unwashed, the teasing is pretty safe – a shared ground of judgment is not really given up.

(5): *OK, so she'd wash the dishes*

S2: She would never clean the undersides of the dis[hes]
S1: [OK],
so she'd wash the dishes
but you had a problem with [how she did it.]
S2: [And I…and I…]

S2 mimes dishwashing during her first utterance (not illustrated). S1 leans far forward on *OK, so she'd*, with palm-down 5 right hand (slightly

spread) projecting forwards. At *wash* she places her palm on table close to S2. She starts laughing and laughs through her second clause (from *but* onwards). S1 is covering her face, in demonstration of embarrassment. Right after *problem*, S1 leans back again, satisfied that she has made her point and still laughing – and now ready to allow S2 to continue her narrative.

The extended forwards reach in (5) certainly accompanies the kind of attention to both (a) floor-claiming (S1 is interrupting, though interjecting rather than "permanently" claiming the floor) and (b) emotional solidarity which we have seen in earlier examples. The hand-shape, interestingly, is the flat hand rather than the deictic point – perhaps because S1 is making an interjection, but not a real attempt to claim a disputed floor? The forwards lean is shared with (4), another example where the speaker could potentially be seen as threatening the addressee's face and is thus extra eager to show accompanying solidarity.

6. Interpersonal space vs. extrapersonal space

Speakers make radically different use of the space between their two personal spaces (on the line between them), and the space which is adjacent to one of their personal spaces but not "shared" or interpersonal. In the next example, we will see both of these spaces used in quick succession.

In example (6), S1 and S2 are discussing a different set of housemates, who also failed to wash dishes thoroughly. As happens often in the recorded conversation, S1 is getting somewhat in the way of S2's floor-use by finishing S2's utterances (…*the underside*), and suggesting her next utterances (*You'd stack dishes*). S1 finally claims the floor, and does so with gestural reach into the interpersonal space, as well as with the linguistic form *Listen* and contrastive markers such as the stressed and lengthened *buut*. Once she has claimed the floor, she describes a situation where she would *reach in to get a plate* and there would be grease on the bottom (of the plate). This description is also accompanied by gestures, but performed in an extrapersonal space rather than in the interpersonal spatial zone.

(6): *Listen*

S1: …the underside.
S2: OK, this is what would happen.
S1: You'd stack dishes.

S2: Listen.
We did stack dishes
buut
I'd like reach in to get a plate
to get ready to eat
and there'd be like [grea –
S1: [laughs]
S2: – there'd be like grease on the bottom]
S1: yeah
S2: And I'd be like…

[S1 mimes washing the underside of the dishes as she says *the underside*, then shapes a stack of plates (or makes a stacking gesture) as she says *you'd stack dishes*.]

S2 is meanwhile trying to break into S1's high-involvement feedback, which is keeping her from the floor. She first says, *OK, this is what would happen,* with hands shaping a new topic in her own gesture space, which return to rest as she fails to get the floor. She then tries again with *Listen* - accompanying her attempt with three left-hand D-points (on *listen, did and buut*), which reach well out of her own space into the shared interactional gesture space. (Recall that her left hand is her dominant gesture hand.) She gains the floor – indeed, after *listen* and its accompanying reach, S1 seems momentarily quiet, but S2's reaches and emphatic stresses continue, holding onto the floor as she gets going on her narrative segment.

As S2 describes her past household situation, she reaches up repeatedly to the left, not along the line between herself and S1 but to the left of that line and up. This is where she has located the cupboard with the dishes in it. She makes 4 reaches, on *reach, ready to eat, grea-* and *grease*; the third and fourth reaches are apparently two repetitions of the same reach, one for each instance of the interrupted phrase *there'd be like grease on the bottom.* These gestures add information to the linguistic structure; at the very least, the speech track is unclear exactly what is meant by *reach in to get a plate,* but the iconic gesture makes it clear that she is talking about reaching into a

cupboard to get a plate from a shelf – rather than, for example, reaching into a dish rack to extract a plate.

The contrast between these two of S2's gestural sequences is highly relevant to our point. Each sequence involves a series of reaches outside of S2's personal space, performed with her dominant left hand. But the first sequence of pointing reaches are directly towards her interlocutor, into interpersonal space, while the second sequence of reaches (bent-5 hand, fingers upwards) are to her left side, into the ipsilateral extrapersonal space to the left of her personal space. Our claim is that she could not have reversed these spatial locations. Speakers do not reach out to the interpersonal space to get a plate from a cupboard, any more than they claim the floor by reaching out into ipsilateral extrapersonal space.

As mentioned earlier, the work of Özyurek (2000) documents her comparison of speakers narrating the plot of a Sylvester and Tweety Bird cartoon in two classes of situations, (1) a dyadic setting with only one addressee seated to one side of the speaker, and (2) a triadic setting with two addressees seated on opposite sides of the speaker. In both cases, the speakers made iconic gestures of "throwing out" as they narrated a scene where Tweety Bird's owner catches the cat Sylvester and throws him

forwards from her body out a window to keep him from catching her bird. However, in the single-addressee setting, the speakers tended to make these iconic throwing gestures to one side (away from the addressee); in the two-addressee setting, they tended to make the throwing gestures backwards over their dominant-hand shoulder. Özyurek argues that this is one evident case of "recipient design," showing that gestures are not shaped only to further the speaker's cognitive and/or linguistic processes, but are also responsive to addressees' communicative needs. This may well be an example of precisely the same phenomenon noticed in (6) above. Özyurek's subjects in the one-addressee setting needed to avoid interpersonal space in choosing the goal of this gesture. And subjects in the two-addressee setting simply had no completely extrapersonal space adjacent to them, except in back of them: the rest of their adjacent space was "saturated" with claimed areas, whether individual speakers' personal spaces or the interpersonal space on the line between them. Rather than make use of interpersonal space to represent a target of a "throwing out" trajectory, they altered their iconic representation of the motor routine significantly, producing a gesture which was much less faithful to the represented action.

Similarly, Hoque (2003) documents the differential use of contrasting subspaces in the gestures of architecture students making project presentations. Different classes of content are gesturally expressed in (1) the speaker's personal space, (2) the space of the architectural drawing, (3) the space above the drawing, (4) the space of the architectural model, and (5) the space above and around the model.

This contrast is worthy of added exploration in a wide range of contexts. Although we have so far only done a complete analysis of the uses of subspaces in this particular conversation, it is our overall impression that similar contrasts hold in our full corpus. Speakers would not set up a cupboard in interpersonal space, any more than they would claim the floor by gesturing into unclaimed extrapersonal space.

7. Space in a lecturer's gestures

As we mentioned in our introduction, lecturers are fascinatingly different from small-group conversational participants in their use of gesture. First, of course, they often take up a larger personal gesture space. They are free to do this, since their personal gesture space is not closely adjoined by other personal spaces; and it is natural to gesture on a larger scale to keep the

attention of a larger group of people who are farther away. (Most of us, for example, will wave our arms higher and more extremely to greet or catch the attention of a more distant person.) The lack of encroaching limits on the lecturer's personal gesture space is simply a property of the situation, rather than being (as far as we can tell) related to either the speaker's special cognitive processing needs in producing the lecture, or the listeners' processing needs. However, to the extent that a lecturer's gestures are (consciously or otherwise) adjusted in scale to suit a larger and less adjacent audience, "recipient design" in gesture seems to be instantiated here.

Because lecturers' personal space is both larger and also more flexible than those of small-group interlocutors, it is extremely hard to draw a division between personal space and extrapersonal space in lecturers' gestures. Hoque (2003), looking in detail at spatial divisions in the gestures of architectural project presenters (e.g., the functions of the space in and on an architectural model versus the functions of the space immediately above the model), did not notice a division between personal space and overall extrapersonal space (excluding the model and drawing spaces).[4] We have had the same feeling in analyzing lecture data. At another point in the lecture from which our next example is taken, the speaker gesturally "drags" himself across the room and momentarily out of the camera's view, as he eagerly describes an ongoing process with large rotating arm motions. If he were seated in a small intimate group, such gestures would be made in a single stable space, very probably within his personal gesture space or slightly extending its limits. Presumably the speaker could walk up to an audience member and grab his arm; but (although stage performers may discomfit audience members in this way) our lecturer data contains no such examples. So – what counts as "extrapersonal," if the speaker never approaches the effective limits of the size of her personal gesture space? We pose this as a question, rather than offering a definite answer.

However, in other respects, lecturers follow the same regularities observed in more conversational gesture. The same physical iconic and metaphoric mappings of the real space onto conceptual domains are observed (Compare the analyses of metaphoric gesture in smaller-group settings in McNeill 1992 and Cienki 1998 with the analysis of metaphoric gesture in lectures presented in Sweetser 1998). Gestural beats seem to fill the same functions of rhythmic structuring of production and information presentation. And many of the same deictic structures are involved, as we are about to see.

Example (7) is taken from a lecture presented to the Cognitive Science Colloquium at UC-Berkeley, videotaped by the colloquium organizers with the consent of the speaker, and subsequently made available to the campus community for viewing. The segment we have chosen to comment on here is the speaker's boundary-marker of the transition between the talk's conclusion and the following question session. He is directly addressing the audience as *you* at this point, and is in effect turning the floor over to them, so awareness of the dialogic nature of the situation is high.

(7)**:** *stop here and interact*

Utterance: *to..uh for me to stop here and interact with you at this point and and and – take some – take questions and…so I think I'll do that here. Thank you.*

Gesture 1: (*to…uh…for me to*) The speaker's RH (Right Hand) comes down from head to shoulder in L hand-shape, with index pointed at shoulder (right periphery), and makes three circles.
Gloss: Iconic/metaphoric: word retrieval is circular motion.

Gesture 2: RH then moves down and center a little and makes two beats (one on *stop*). RH then moves further down and to center, with index now horizontal and pointing across the body to the speaker's right. .
Gloss: Horizontal barrier – metaphorically refers to "stopping."

Gesture 3: By *interact*, the speaker's forearm has begun to pivot so that index now points out at audience on *you*; body also turns to right although slightly behind motion of arm. He holds this for 2:20 seconds with a slight beat on *questions* while head turns left.
Gloss: The audience is picked out to indicate request for them to participate; change in discourse focus.

Gesture 4: From position of previous gesture R index points directly down making three beats, the last of which is much more emphatic. This coincides with *I think I'll do that here* and *thank you.*
Gloss: The downwards point has the literal semantics of *here* and the metaphoric semantics of *now*. This is a spatiotemporal metaphor common in gesture systems and in both signed and spoken languages; the concomitant utterance here has the same metaphoric reference, since the speaker does not mean "stop on this spot in the room" but "stop at this moment in time." The beats give emphasis to the reference to the moment of transition and to the final speech act of thanking the audience.

We can find no real division between personal and interpersonal space here, or elsewhere in this lecturer's gestures. In transferring the floor, he does not reach out particularly far from his body in the direction of the audience (indeed, he has made iconic gestures about content which reached farther out than any of the interactive regulative gestures in this sequence). Later, during the question and answer period, when turn-taking is more of an issue, we also do not find particularly extended reaches involved in new topics or in turn-taking.

On the other hand, the pointing hand which accompanies *you* is pointed essentially at the "center of mass" of the audience. More systematic examination of points at groups is needed, but it seems to us that it would have been odd for the speaker to point towards one side of the audience, while referring to the whole group as a collective addressee. But assuming that the "center of mass" generalization can be added to the structuring of the space, then deictic pointing works the same way for individual addressees

and groups. This aspect of interactive gesture is very similar in the two situations.

Similarly, the downwards point which accompanies *here* (and metaphorically means "now") makes use of speaker and hearer locations – the precise location of the speaker and the generally shared larger location of speaker and audience – to access shared temporal reference.

Our immediate conclusion here is that more systematic comparison of gesture accompanying different speech genres is badly needed. Lecturers are clearly not engaged in monologues, but really are addressing their silent partners in the exchange. Their gestures as well as their speech are richly and pervasively engaged in interactional regulation. Sweetser (1998) has documented the use of the B "barrier hand" and the palm-up "offering hand" by lecturers, meaning (for example) "don't interrupt now" and "here's my point." Our example here is only for comparison, but does show that a lecturer's gestures are discourse-regulating as well as expressing content.

8. Conclusions

Gesturers divide up space in functionally relevant (i.e., meaningful) ways. Gestures made in different places therefore complement the linguistic communicative track in different ways. There are regularities across speakers about these divisions, but we are barely beginning to grasp them; we need further research in this area.

In examples (1–6), we see two interlocutors both reaching well beyond their usual gestural boundaries. Such reaches into interpersonal space, or into the interlocutor's personal space, mark the gesture as serving the function of a discourse marker in Schiffrin's (1987) sense. Reaches into extrapersonal space do not serve discourse functions in this way in our data, but may serve other content functions. The handshape is also relevant to the function; we saw that pointing appears to serve a different range of discourse functions from palm-down flat-handed gestures, although both handshapes clearly serve much wider ranges of functions in other contexts (see Kita 2003 for discussion of the range of functions of pointing).

We know that these are not the only potential divisions of use of gestural space. LeBaron and Streeck (2000), Smith (2003) and Hoque (2003) document ways in which objects and the structure of the physical environment shape gestural functions; a blackboard or an architectural model or sketch, for example, sets up a relevant space for certain gestural

content. However, whenever two speakers are co-present and in proximity, their personal and interpersonal spaces are relevant to the interaction, as well as other spatial divisions.

Larger groups complicate these spatial structures. Multiple speakers result (as Özyurek found) in added interaction between potentially competing appropriations of space. A lecture situation is in some ways simpler: during the lecture – as opposed to in individual question-interaction between speakers and specific listeners – it involves one primary speaker, and a single "collective" listener. The speaker has a large and flexible personal gesture space, not directly abutting that of the listener; and interpersonal space may be less well defined, although there still seems to be a crucial line between the speaker and the "center of mass" of the audience.

All of these thoughts are partial conclusions, from (so far) limited data. We need more comparative analysis of functional divisions of space in gestures accompanying different speech genres, as well as ongoing analysis of larger numbers of subjects. It seems clear from many sources that gesture is speech-regulating as well as content-expressive (see particularly Kendon 1995; Sweetser 1998). Here we hope we have shown that the contrasts between personal, interpersonal and extrapersonal space interact with these gestural functions.

Finally, in all situations of speaker co-presence, including both lectures and smaller group interactions, linguistic markers of discourse interaction appear to work alongside gestural ones. Many of our gesture examples also show both verbal markers (*OK, so, allright, listen, so then*). However, some do not; example (2) shows introduction of a new topic with a question, but no specific discourse marker of topic-change besides the gestural one. A question which well deserves further study is what factors motivate speech-and-gesture discourse regulation, as opposed to speech-alone or gesture-alone. There are some obvious factors which seem relevant. In the case of the lecturer described in Sweetser (1998) as raising a palm-out hand to fend off interruption, the gesture had the advantage of not halting the lecture's linguistic flow at all. But larger data sets need to be studied to examine the relationships of complementarity and overlap between between linguistic and gestural discourse regulation. This topic clearly deserves some of the attention which has been so fruitful in examining the relationships between linguistic and gestural content.

Notes

1. An attested example from Hoque (2003).
2. Cf. Cienki (1998); Goldin-Meadow and Alibali (1999); Goldin-Meadow (2003); Kendon (1990, 1995, 2000); LeBaron and Streeck (2000); McNeill (1992).
3. See McNeill (1992) as a basic reference; the same space is used for manual aspects of signed language production (see Liddell [2003] for a recent summation concerning sign space).
4. Hoque's work shows spatial and physical affordances particular to the presentation, since models and drawings are always present at such events. For more analysis of how such affordances affect gesture, see Goodwin (2000), Haviland (2000), LeBaron and Streeck (2000).

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The role of compound pragmatic markers in the construction of Catalan oral narrative

Montserrat González

1. Introduction

Pragmatic markers play a decisive role in the telling of events. When English speakers make use of *well, then, so, I mean, you know* or *anyway*, for instance, they do it to organize, recover, reformulate and segment the information that they provide to the hearer. They also use them to constrain possible inferences and presuppositions. These lexical cues have a meaning related to the sort of coherence relation they set up with preceding and following propositions and to the pragmatic discourse structure within which they are found: to the rhetorical, sequential, and cognitive-inferential components. Because of the grammaticalization process that they have gone through, some of these units still keep some traits that belong to the ideational structure, directly related to the ideas described in the text-world. However, form and function do not always find their corresponding lexical counterparts across languages. This paper aims at providing strong evidence of this in the Catalan language. Based on Schiffrin's (1987) and Redeker's (1990) proposals on the role of markers in a discourse coherence model, and on Sander's (1997) distinction between pragmatic versus semantic discourse coherence relations, this paper presents the core function of pragmatic markers in the different discourse structures of Catalan oral narratives, particularly concentrating on the relevance that *compound pragmatic markers* (CPMs) have in the construction of the text-world and in the processing of information by the listener. The notion of CPM stems from Maschler's (1998) study of pragmatic marker clustering and on the view that these units are one of the main linguistic devices through which cognitive frame shifts become manifest. A study carried out with an English and Catalan corpus of oral narratives (González 2001) has shown that structural shifts facilitated by English CPMs are mostly found in the rhetorical structure, where the speaker's intentions and thoughts are planned and shown, with practically no involvement of the inferential component, whereas Catalan structural shifts facilitated by markers typically occur from the sequential to the rhetorical and inferential

components. Finally, the findings also show that the use of CPMs in Catalan narrative is richer than in English both in quantitative and in qualitative terms.

2. Theoretical framework: Pragmatic markers in a discourse coherence model

The attempts to clarify the status of discourse markers have been varied, almost as many as the numerous labels attached to them, offering different explanations depending on the researcher's interests, framework and methodology used. Although there seems to be a general agreement that their core function is to signal a relationship between prior and following segments, there are questions that are still open to discussion: What sort of relationship do markers signal? Structural, involving an aspect of discourse management, as Schiffrin's exchange structure (1987), Redeker's sequential component (1990) and Roulet's hierarchichal module (1997) suggest?[1] Inferential, involving constraints on implicatures and presuppositions, as relevance-based approaches (Blakemore 1987; Blass 1990) claim? Illocutionary, guiding the speaker's intentions, thoughts and actions, as Schiffrin's action structure, Redeker's rhetorical component, and Grosz and Sidner's intentional structure (1986) propose? Or, solely grammatical-pragmatic, making explicit the relationship between segment one and segment two (prior and following segments), as Fraser (1999) suggests? Finally, there is also the approach that sees a primary role of markers in setting up semantic and/or pragmatic coherence relations between prior and following segment (Hobbs 1985; Mann and Thompson 1988; Knott and Dale 1994; Sanders 1997, among others).

This paper takes this latter approach, integrating Schiffrin's and Redeker's framework. Thus, I suggest that the polyfunctionality of pragmatic markers is directly related, first of all, to its propositional value and degree of lexicalization[2] and, second, to their semantico-pragmatic interface.[3] It proposes an approach that takes the semantic versus pragmatic source of coherence (Sanders 1997) as point of departure. According to Sanders, although the limits are sometimes fuzzy, there is always a dominant tendency towards one or another. Making that distinction facilitates, to a large extent, the understanding and treatment of lexical devices that, although they have barely any referential value, have a strong procedural meaning, specifying how the segment they introduce is to be interpreted in relation to the prior segment. See the proposal in figure 1.

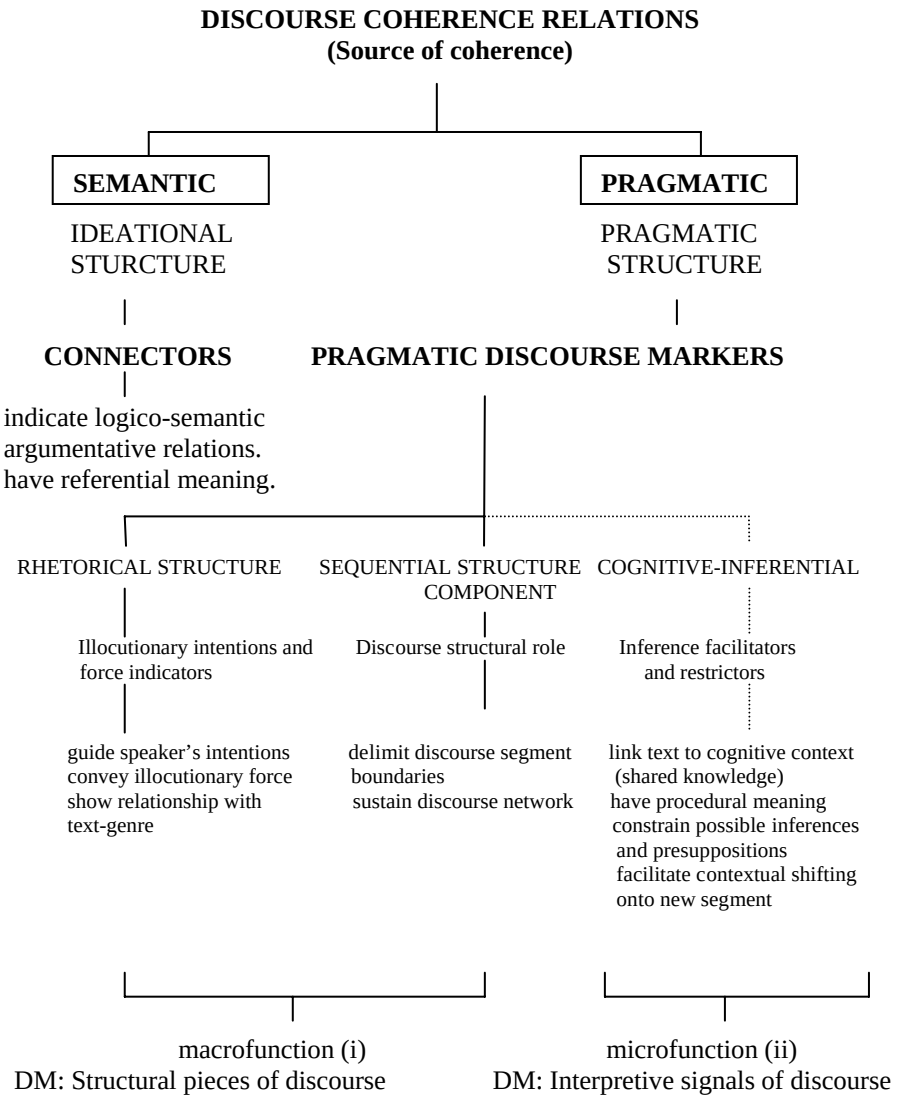

Figure 1. Proposal for the distribution of pragmatic discourse markers in the discourse structure components, taking the *source of coherence* as reference point

Figure 1 presents the distribution of markers in the discourse structure components. From the *source of coherence* stem two primary functions: (i) structural devices that help the speaker organize segments, intentions, ideas, thoughts and actions; and (ii) interpretive elements that link the text to the speaker and hearer's cognitive context and shared knowledge. These two macrofunctions emerge in the rhetorical and sequential pragmatic structures. In the ideational structure we find those relations which are logico-argumentative, normally undertaken by units that have full referential and descriptive meaning (Redeker 1990, 1991).[4] The cognitive-inferential component is present throughout as a cooperative principle of any communicative event, although this component is not found in any of the above discourse structures; markers play a decisive role in constraining and facilitating assumptions and presuppositions (Blakemore 1987; Blass 1990). In the analysis of the corpus, I ascribed the function(s) of the markers to the different discourse structures and components.

3. Corpus, informants, instrument and aims

The analysis of pragmatic discourse markers undertaken in this study was carried out on English and Catalan corpus of forty oral narratives, twenty in English and twenty in Catalan. The informants from whom the oral narratives were elicited are all native speakers of Catalan and English. The forty informants are adult men and women whose ages range from twenty-five to thirty-five years old. Their educational level is university studies.[5] The variables which have been controlled are, therefore, mother-tongue (English and Catalan), age, and educational level; sex was not taken into account, so both men and women were chosen at random. External variables were not taken into consideration. The English informants are all from different areas of Great Britain; The Catalan informants are all from different parts of Catalonia. Dialectological variables were not taken into account. The instrument used to elicit the forty oral narratives was one of the modules of the sociolinguistic interview (Labov 1972a). According to Labov (1972c: 113), *Danger of Death* is one of the most successful questions[6] for involving the speaker to such an extent that the formal situation (i.e., *principle of formality* and *observer's paradox*) is frequently overridden. The question I posed to the informants did not exactly match Labov's original one; I omitted the fragment *'of being killed'* since I considered that very few people would be able to respond 'yes' to such an extreme situation: whereas practically everybody has sometimes been in a

situation of danger, hardly anybody has been in a situation of serious danger of being killed. With the changes made, the question was then: *"Have you ever been in a situation where you thought you were in serious danger?"* With the exception of three informants (one English and two Catalan), who responded 'no' and went on with somebody else's experience (rf. vicarious experience), the rest answered 'yes' and got involved in the telling of the story.

My working assumption is that there is a close relationship between text-genre and presence of certain pragmatic markers in specific narrative segments. Markers play a decisive role in the telling of a past personal experience since they guide the listener through the different stages, and thus actions, emotions, beliefs and attitudes, of the narrative. Most of the studies on discourse markers are based on conversational genre that takes the form of adjacency pairs and turn-taking moves. In this case, the participants often make use of markers to hold the floor, express deference or save face. Storytelling embedded within conversations also presents similar characteristics: the speaker is either interrupted by the hearer or is offered the floor. Although the telling of an elicited narrative also involves a speaker-hearer interaction, the fact that the hearer does not verbally interrupt the narrator until the story is over[7] results in a textual piece that presents structural differences from dialogic discourse and that has a regular pattern.[8] My aim is to see the ideational, rhetorical, sequential and inferential functions of markers within this regular pattern, and how markers help convey the point of the story.

See the segmental distribution of some markers in excerpt (1). Misha is explaining a dangerous skiing experience that he had in France; because of the bad weather conditions, he and his friends had difficulties coming down.[9]

(1)
@Bg: da
*NAR: they were coming down sideways # sideways.
@Eg: da
@Bg: ei
*NAR: because it was so dangerous.
@Eg: ei
@Bg: da
*NAR: and I was coming down sideways as well.
*NAR: and ah:: # <***well***\> # now and again_.
%pra: $DEL (rhetorical) $SIT (cognitive-inferential)

@Eg: da
@Bg: ee
*NAR: <***I mean**\> # you get bored going sideways for about three kilometres\.
%pra: $FRA (sequential) $COM (rhetorical)
@Eg: ee
@Bg: da/ei
*NAR: <***so**_> I let myself go\.
%pra: $FRA (sequential) $REC (rhetorical) $CON (ideational)
*NAR: and I was going down this mountain really dangerous.
*NAR: one side of the mountain was straight up.
*NAR: one side of the path # if you want # of the sloan was straight up on the mountain.
*NAR: and the other side was straight down.
@Eg: da/ei
(*NAR18 Misha*)

In the developing action segment, Misha makes use of *well* to, first, let himself think about the event and, second, to anchor the listener on what is about to come, that is, a change in his plans and the decision to start a risky action. Notice how *well*, in this case, works as a textual hinge that facilitates the inclusion of a new element into the account. The following segment is an external evaluation. Misha makes use of *I mean* to initiate it and at the same time to introduce a comment that he thinks is informative (one gets bored going sideways for about three kilometres). Finally, Misha returns to the developing action by means of *so*, a primary resumptive marker. It opens up the segment and it helps him continue the argumentative thread. Finally, the *so* facilitates the cause-consequence relationship between prior and following propositions (*because one gets bored going sideways ... I let myself go*). Misha's narrative continues with another evaluative segment that includes a compound pragmatic marker. Its definition and relevance is fully explained in the following point.

4. The role of compound pragmatic markers in the construction of oral narrative

A *compound pragmatic marker* (CPM) is defined as a functional co-occurrence of two (or sometimes more) pragmatic markers whose combinatory functions result in: a) a change of attentional state of the

speaker (cf. Grosz and Sidner 1986) or shift in his/her cognitive frame; and/or b) a remarkable emphasis on the illocutionary point of the segment. Let's see in (2) the external evaluation segment that follows the developing action of Misha's narrative above:

(2)
*NAR: one side of the path # if you want # of the sloan was straight up on the mountain.
*NAR: and the other side was straight down.
@Eg: da/ei
@Bg: ee
*NAR: <***so_# you know***\> # do you understand the shape_.
*NAR: I'm talking about/.
%pra: $FRA (sequential) $REC (rhetorical) $COM (rhetorical)
@Eg: ee
@Bg: da
*NAR: and I let myself go.
*NAR: and I started to go quite fast.
@Eg: da
(NAR18 Misha)

Misha breaks the flow of the telling of events to pause for a moment and make sure that his interlocutor gets his point; he has described the shape of the mountain in detail so as to convey the full risk involved in going down. The *so* is intended to make a return to the thread of the story, but Misha wants to check whether his interlocutor understands his words so as to fully grasp the danger involved. It is because of this that he uses you know. From an objective description, he jumps into a straightforward question addressed to his interlocutor: "so, you know, *do you understand the shape I'm talking about*?" By means of *you know* there is an intended sharing of narrator-interlocutor implicit common ground that aims at facilitating the illocutionary point of the narrative. The combination of these two markers, whose functions come from two distinct discourse structures (sequential and rhetorical), results in a shift of focus of attention and speaker's cognitive frame. The narrator's move from *so* to *you know* in (2) involves then a shift of 'contextual realm.'[10] The richness of CPMs in general, and in this study in particular, lies in their qualitative, rather than quantitative, potential: the type of coherence relation they set up, the procedural and

propositional meaning of the unit, sentence distribution, grammatical properties, prosody, etc.[11]

Maschler's (1998) study of the use of discourse markers for segmenting Israeli Hebrew talk-in-interaction discourse deals with the notion of 'frame shifting', coming from Goffman's work (1981). He argues that, according to Goffman, a change of frame (or footing, as also termed by Goffman) "implies a change in the alignment we take up to ourselves and the others present as expressed in the way we manage the production or reception of an utterance" (Goffman 1981: 128).[12] Maschler investigates discourse markers as one of the main cues through which frame shifts become manifest. These shifts involve distinct 'contextual realms' since they refer to not only the speaker's alignments, but also to the text-world, the linguistic structures, the prior and shared knowledge, etc. (Maschler 1998: 24). Following Labov's scheme of narrative, Maschler defines a 'narrational frame shift' in terms of a three-level-hierarchy in the story, where discourse markers would function as referential, interpersonal, structural, and cognitive cues (1998: 32). He points out that 'discourse marker clusters' (term used "for at least two consecutive discourse markers", p.47) "result from shifts in constraints from a number of contextual realms, such that each marker in the cluster marks a shift in a different realm" (p.48). I can see a plausible parallelism between Maschler's contextual realms and the four discourse structure components (i.e., ideational, rhetorical, sequential, and cognitive-inferential) that I propose as framework for the study of pragmatic markers in oral discourse. Similarly, the notion of CPM that I suggest runs parallel to Maschler's discourse marker clusters definition.

Although the cooccurrence of two pragmatic functions does not result in a unitary function, it can be said that they both complement each other. Similarly to what happens when a pragmatic marker is omitted from an utterance, if one of the units forming a CPM is taken out, the ideational meaning of the utterance is not altered; it is just restricted as far as explicitness of speaker's intentions and illocutionary force of the utterance is concerned. Because of the procedural meaning of pragmatic markers, when a CPM is used the processing cost of information is lowered. This works for the sequential, rhetorical, ideational, and cognitive narrative structures/components. Moving from one of these contextual realms to another, in Maschler's terms, becomes easier for the speaker who, by means of the CPM, segments and at the same time facilitates the possible inferences to the hearer. See the structural shifts carried out by English CPMs in figure 2.

	Sequential	Rhetorical	Inferential	Ideational	*structural shift*
<well I mean>		com		ref	(RHE> IDE)
<well so>	frc	clu			(SEQ > RHE)
<so anyway>		rec clu			(RHE> RHE)
	fra	rec clu			(RHE> RHE)
<so you know>		rec com		seq	(SEQ> RHE > RHE)
<then well>	fra	clu			(IDE > RHE)
<okay anyhow>		rec top			(SEQ > RHE>RHE)

Figure 2. English CPM structural shift [13]

According to the data above, the commonest shift is from sequential to rhetorical structure functions: <*well so*> is used to close a segment and to introduce a conclusive remark; <*so you know*> is used to open up a new segment, to return to the argumentative thread, and to introduce a comment; <*okay anyhow*> is used to open up a narrative segment, to return to the argumentative thread, and to shift topic. There are two instances that involve a functional shift to and from ideational and rhetorical structures: <*well I mean*> is used to introduce a comment and reformulate previous discourse; <*then well*> is used to introduce the sequencing of events and to introduce a concluding remark. Finally, there are two cases of illocutionary force reinforcement, that is, when the shift occurs within the same contextual realm: the two instances of <*so anyway*> are used to regain the argumentative thread and to introduce a conclusion.

From the data in figure 2 it can be concluded that, as with single pragmatic markers, functions linked to the rhetorical structure are the most frequent ones, followed by those related to the sequential component. This may suggest that the richness of CPMs lies, to a great extent, on their expressive value, in the first place, and on their effect on the processing cost of information, in the second place.

Let us see now the use of CPMs in Catalan narratives. Findings show that the use of these units in Catalan is not only higher in quantitative terms, but also qualitatively richer than in English since there is a profuse shifting from one discourse structure to another. An example appears in (3). It is the beginning of a story about a car accident. The three segments -*abstract, orientation, and external evaluation*- start with a CPM.

(3)
@Begin
@Participants: NAR19 Joan Narrator
@Age of NAR: 26;
@Sex of NAR: male
@Bg: a
*NAR: <***bueno\doncs_ # en fi***> # no ho sé\. [*well\[so\anyway*] I don't know]
%pra: $FRA (sequential) $DEL (rhetorical) $CLU (rhetorical)
*NAR: ah # mmm # he triat això. [I've chosen this]
*NAR: com podia haver triar una altra cosa. [as I could have chosen something else]
*NAR: però és una cosa. [but this is something]
*NAR: que em va passar. [that occurred to me]
*NAR: i que em va quedar. [and I remember it]
*NAR: a més és una cosa ben tonta. [though it's something silly]
*NAR: que és un petit accident de cotxe que vaig tenir. [it's a minor car accident that I had]
@Eg: a
@Bg: ocs
*NAR: <***aleshores_ah # bueno***> mmm # jo anava amb una # amb una noia\.
[*then_well* I was going out with this girl]
%pra: $FRA (sequential) $DEL (rhetorical) $SIT (cognitive-inferential)
*NAR: i anàvem tot sovint de Llagostera. [and we usually went from Llagostera]
*NAR: que és on ella vivia. [that's where she lived]
*NAR: fins a Girona per agafar l'autobús. [to Girona to take the bus]
*NAR: per venir aquí a l'Autònoma. [to come here to the Autònoma]
@Eg: ocs
@Bg: ee
*NAR: <***llavors_bueno***> # jo feia poc_.
*NAR: que # que tenia el meu landrover i el meu carnet de conduir simultàniament\.
[*then_well* I had just got my landrover and my driving license, simultaneously]
%pra: $FRA (sequential) $ADD (rhetorical)
(NAR19 Joan)

The three multi-word forms in (3) carry out sequential, rhetorical and inferential discourse component functions. By means of the multi-word marker, there is a speaker's frame shift onto different contextual realms. The cognitive operation carried out by the speaker takes place just by using one linguistic form so, as previously mentioned, the processing cost of information is lowered as there is an economy of efforts when so doing.

Let us analyze the three markers in (3) in detail. First of all, the three markers have a clear structural role since they are all used to open up a new segment (framing function). The switch from the sequential to the rhetorical component comes, in the first case, when Joan responds to the interviewer's question (*have you ever been in a situation of danger?*) doubting about the appropriateness of his answer (<bueno doncs en fi> *no ho sé*). Such stalling is carried out by *doncs*, an illative marker that often leads to conclusive assertions and is sometimes used to play for time to think; finally, the use of *en fi* closes up the stalling process and facilitates the declarative utterance.

In the second case, the shift of the speaker's cognitive frame – and therefore of focus of attention – comes with *bueno*. The narrator has introduced the orientation of characters and space by means of *aleshores*, a marker that has proved to have a primary role in the sequential structure, at segment boundaries in particular, and wants to anchor the listener in the text-world from the start. He makes a shift from a sequential to a cognitive contextual realm.

The third compound marker introduces external information that Joan considers is relevant for what he is about to tell: (<llavors bueno> *jo feia poc que tenia el meu landrover i el meu carnet de conduir*). He does it by means of *llavors*, a marker that is basically used to introduce the succession of events, intentions, and thoughts. Here, the marker is used to introduce a piece of information that the narrator thinks is important for the listener; there is, within the same linguistic unit, a shift from sequential to rhetorical discourse structure components. Notice that the three CPMs include *bueno*, a polyfunctional marker that has a strong presence in the rhetorical structure of the narratives (54.1%). But the most outstanding fact is that, in the three patterns, this marker is used, in cooccurrence with another, to facilitate a shift to distinct contextual realms: in the first, it is the structural realm; in the second, the cognitive; and in the third, the rhetorical. This is a proof of the pragmatic richness of discourse markers as procedural linguistic pieces that help the listener interpret and at the same time process the information given.

Most of the frame shifts carried out by *bueno*- CPMs are from sequential to rhetorical contextual realms. In the case of *bé*- CPMs, this also occurs but since this marker has a strong role as a text-world anchoring device, the shift is also done to and from the inferential component. The *llavors* CPM departs from either the ideational or sequential structures and shifts to the rhetorical and inferential. *Aleshores* and *doncs* CPMs are also used to facilitate the shift from the sequential to the rhetorical structures. Let us see some of these shiftings in figure 3.[14]

	Seque -ntial	Rheto -rical	Infere -ntial	Ideat -ional	*structural shift*
<bueno doncs>	fra		sit		(SEQ > INF)
<bueno doncs en fi>	fra	del clu			(SEQ > RHE>RHE)
<bueno clar>		clu evi			(RHE > RHE)
<bé bueno>	fra	top	sit		(SEQ > RHE > INF)
<bé doncs>		rec	sit		(RHE > INF)
	fra ini	clu			(SEQ > SEQ > RHE)
	fra	rec	sit		(SEQ > RHE > INF)
<bé llavors/llavorens>			sit	seq	(INF > IDE)
<llavors bueno>	fra	add			(SEQ > RHE)
<llavors bé>	fra	com			(SEQ > RHE)
<llavors pues>		clu	ctx	con	(IDE > RHE)
<llavorens res>	fra		sit	seq	(SEQ > IDE > INF)
<llavores doncs bueno>			sit	seq	(IDE > INF)
<aleshores bueno>	fra	del			(SEQ > RHE > INF)
		rec clu	sit	seq	(RHE > IDE > RHE)
	fra	rec			(SEQ > RHE > INF)
	fra ini	rec	sit		(SEQ > SEQ > RHE)
		rec	pre	seq	(RHE > INF)
<aleshores clar>		evi			(IDE > RHE > INF)

Figure 3. Catalan CPMs structural shift[15]

Besides showing the structural shift undertaken by CPMs, figure 3 also shows their functional distribution. Notice that rhetorical and sequential

structures are, in this order, those that present the highest number of functions. Within these, framing, conclusion, resumption, text-world anchoring, and temporal sequencing of events are the most relevant roles carried out. Note that all of them involve an important movement within the text. The fact that this phenomenon occurs materialized in a two or three-membered linguistic unit tells us the strong potential of CPMs in oral discourse.

Finally, as for distributional features, all the forms found in the narratives are systematically placed at the beginning of the clause, so it could be concluded that Catalan CPMs (and I would suggest CPMs in general) work as lefthand discourse markers. It is probably the distributional nature (in the clause) of the first pragmatic marker that co-occurs that causes such regularity. However, contrary to what happens with single forms, their mobility within the clause is restricted. In addition, a reversal is not possible. Let's take, for instance, the three compounds in (3) above.

*NAR: <*bueno**doncs_ # en fi*\> # no ho sé\.
*no ho sé <*bueno**doncs_ # en fi*\>
[*well*\ *so_anyway*\ I don't know]
[*I don't know\ *well*\ *so_anyway*]

*NAR: <*aleshores_ah # bueno*\> mmm # jo anava amb una # amb una noia\.
*jo anava amb una # amb una noia\.<*aleshores_ah # bueno*\>
[*then_well*\ I was going out with this girl]
[I was going out with this girl\ *then_well*]

*NAR: <*llavors_bueno*\> # jo feia poc que # que tenia el meu landrover i el meu carnet de conduir simultàniament\.
* jo feia poc que # que tenia el meu landrover i el meu carnet de conduir simultàniament\ <*llavors_bueno*\>
[*then_well*\ I had just got my landrover and my driving license, simultaneously]
[*I had just got my landrover and my driving license, simultaneously\ *then_well*]

Note also that in the case of temporal adverbials like *aleshores* and *llavors* the reversal of the form results in a change in meaning, from pragmatic to referential (i.e. 'at the time'). The possibility of reversing the

members sometimes exists but, again, there is a restriction when the units involved have ideational meaning, that is, when they work as temporal, reformulative, or consecutive markers.[16] The more grammaticalized the unit is, the higher its pragmatic value, so only with units where the referential meaning is totally lost is switching possible (bé bueno > bueno bé; doncs bé > bé doncs; bueno clar > clar bueno). But even in these cases there are exceptions since there is not always a form-function correlate when the members are switched (see figure 3).

5. Concluding remarks

The cooccurrence of various pragmatic markers cannot be viewed in purely descriptive terms. It responds to the speaker's need to set his/her footprint in the different discourse levels, from referential to interpersonal, structural, and cognitive. By means of the compound marker the speaker moves from one of these contextual realms to another easily, segmenting and at the same time narrowing down and facilitating the possible inferences and presuppositions. Because of the intrinsic procedural meaning of pragmatic markers, these compound units reduce, to a large extent, the processing cost of information. This is especially true of the colloquial oral register since, contrary to what occurs with written discourse, when the speaker is engaged in the flow of speech there is no time to stop and think about the coming utterance. The frame shift to and from a contextual realm, in Maschler's terms, is then much easier if a CPM is used.

Notes

1. Besides the many studies carried out in the field of artificial intelligence, which share a cognitive approach to linguistic phenomena. Their aim is to establish the link between discourse segments and those expressions used in natural language to structure ongoing interaction and to signal the structure and coherence of the discourse (Grosz and Sidner 1986; Grosz et al. 1989; Mann et al. 1992; Oversteegen 1997; Besgen 1998, among others).
2. By this I am referring to the degree of grammaticalization: the more lexicalized – or grammaticalized – a unit is, the higher its pragmatic value. See Traugott (1995a, 1995b, 2003) and Cuenca and Marín (1998a, 1998b) for a thorough discussion on the process of semantic loss of lexical units that have progressively acquired a strong pragmatic value and, with it, a change in their discourse use and grammatical category. See also Pavlidou (1991) and King

(1992), who refer to the 'grammaticalization of particles' and the different types of meaning they can combine.

3. Although the interface can offer blurred coherence relation boundaries.
4. The Geneva School and the Argumentative Theory linguists (Moeschler 1994; Lusher 1993; Roulet 1991; Ducrot 1983, among the most representative) have traditionally named these units *textual, argumentative and/or pragmatic connectors*.
5. A preliminary study with two groups of informants – one with and the other without university studies – was carried out. Since there was no difference between the two groups in terms of use of pragmatic markers, the group that had university studies was finally chosen.
6. *Have you ever been in a situation where you thought you were in serious danger of being killed -where you thought to yourself, "This is it?"* (Labov 1972: 93). If the response is affirmative, then the question is: "What happened?" At that point, the interviewee feels obliged to show the interviewer that the story that is about to start is about a real personal experience, not a fictional story.
7. Back-channeling is done by means of face gestures and non-verbal expressions.
8. According to Labov (1972): abstract, orientation, developing action, evaluation (internal and external), result, and coda.
9. As previously mentioned, when I analyzed the corpus of narratives I ascribed the functions of markers to the different discourse structures and components. Due to lack of space, now I will just provide the codings and explanations of the markers that appear in the excerpt. *DEL*: staller or delayer (playing for time to think); *SIT*: text-world's anchorer (the speaker anchors the hearer in the narrative's world, making him/her aware of the important points to bear in mind in the text-world that is being constructed); *FRA*: opening segment boundary marker (the speaker makes use of it to initiate a narrative segment, be it the first of the account or another. It is one of the commonest functions carried out by Pms in monologed discourse); *COM*: comment marker (the narrator steps out of the narrative's world to introduce a personal comment or a piece of information that s/he considers is relevant for the full understanding of the story, not necessarily related directly to the events); *REC*: resumption marker (the speaker recovers or regains the argumentative thread or line of thought usually broken by a previous narrative segment); *CON*: resultative (cause-consequence) marker (the speaker introduces a consequence of the argument provided in the previous proposition).
10. Term from Becker (1995), taken from Maschler (1998: 24).
11. In fact, Maschler (1998) poses many questions for future research on the nature of clusters/CPM: "do markers indeed cluster such that there are no two markers from the same contextual realm [i.e., discourse structure]? If not, as some exceptions suggest ... are there any constraints concerning which markers from the same realm *may* co-occur in a cluster? What about the order of markers within a cluster?" (1998: 48).

12. I cite from Maschler (1998: 23).
13. The structural shift follows a certain order (shown in parenthesis), although in cognitive terms it is clear that all these planes overlap.
14. Again, due to lack of space I only include a few CPMs, although, as previously mentioned, Catalan has proved to be rich in the use speakers make of them. For a full list, see González (2001).
15. The structural shift follows a certain order (shown in parenthesis), although in cognitive terms it is clear that all these planes overlap.
16. Cuenca (2002) refers to the free mobility of some of the members that I have found in Catalan CPMs. With the category of *parenthetical connectors*, some of these units (formally, prepositional phrases, verb phrases and adverbs) can appear at clause-initial, clause-internal, or clause-final position. However, there are some restrictions with units which only admit initial position (*és a dir, ara (bé), això és, o sigui, així): També cal dir que hi ha llamps i llamps. *Hi ha, és a dir, llamps potents i llamps menys potents.* They are all reformulative markers that involve an argumentative movement within the text so that the order of the propositions affects the meaning of the message. I have found a similar case in <*bueno és a dir*>, where the second member cannot be switched by the first.

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Analyzing narrative informativeness in speech and writing

Ruth A. Berman and Dorit Ravid

1. Introduction

The topic of organization of information has been considered in functional linguistics at the level of both sentence and extended discourse. At sentence level, various approaches have been proposed to account for such contrasts as old versus new, given versus non-given, topical versus nontopical, activated versus nonactivated information (e.g., Lambrecht 1994; Prince 1981; Vallduví and Engdahl 1996). Our study is more closely aligned with research on extended discourse (e.g., Biber, Conrad, and Reppen 1998; Chafe 1994; Halliday 1989). Like these scholars, we view the "discourse event" as being shaped by the interaction between the two dimensions of modality (speech and writing) and genre (narrative and non-narrative). To these, we add a *participant* dimension by comparing the information packaging in texts produced by gradeschool children, adolescents, and adults. Our study also differs from much other research by using as its database the "raw", unedited texts elicited from non-expert native speaker-writers as recorded and transcribed in speech and writing (Section 3.1).[1]

We compare spoken with written texts, on the assumption that the flow of information in discourse is modality-dependent and that different pressures of on-line processing apply in speech compared with displaced time in writing, and that these distinctions lead to information being processed and hence presented differently in the two modalities (Chafe 1994; Strömqvist, Nordqvist, and Wengelin 2004). In order to focus on these facets of modality-driven differences, the present analysis disregards other important facets of writing versus speech. In what follows, we thus avoid such issues as: writing as a notational system and concern with features of alphabetization (Tolchinsky 2003) or spelling (Pacton and Fayol 2004); the nature of written language "as a special discourse style" (Ravid and Tolchinsky 2002); and the more complex forms of linguistic expression and higher level of usage associated with written compared with spoken texts (Malvern et al., 2004; Berman, Nir-Sagiv, and Bar-Ilan 2007; Ravid 2004). Rather, we consider here the effects of processing constraints on the

flow of information in narrative text construction, with the aim of demonstrating that texts produced in speech are less carefully monitored and show more effects of the pressures of online production of linguistic output in speaking compared with the offline activity of writing.

Underlying the analysis are several assumptions. First, we propose that the way in which information is presented in extended discourse can be treated as distinct from (although not unrelated to) linguistic means used for achieving discourse connectivity (Berman 1998), "clause combining" (Haiman and Thompson 1988) or "syntactic packaging" (Berman and Slobin 1994: 538–554). Second, this idea of informativeness is also distinct from, although not independent of, thematic or referential content. That is, in principle, the same type of analysis should apply to the sub-genre of narratives investigated here (personal-experience narratives dealing with interpersonal conflict) and to other narrative subgenres such as adventures or mysteries. But since we view discourse information as essentially *genre-dependent*, rather different principles might apply to the categories of information characterizing other types of discourse such as conversation, description, or expository texts.

Third, in developmental perspective, we assume that even nine-year-olds (the youngest group in our study) make some distinction between texts they produce in the two modalities – although it has been shown that their online processing of written texts is still more locally confined than that of older children (Wengelin and Strömqvist 2004). We also assume that the texts written by gradeschool children are less differentiated from their spoken counterparts in level of usage and linguistic register than those of older children – especially from high school up (Bar-Ilan and Berman 2007; Jisa 2004).

The goal of this study is to present an empirically anchored, text-based model of "information parsing" that will account for differences in text construction along the variables of modality, genre, and development. To this end, we propose criteria for characterizing narrative information packaging along the two dimensions of level of informativeness and types of informative material in narrative discourse as illustrated by personal-experience narratives produced in speech and writing by children, adolescents, and adults (Section 2). This is followed by description of findings from initial application of these criteria to narratives produced by speaker-writers of English and Hebrew (Section 3), concluding with a discussion of the cross-modal, cross-linguistic, and developmental implications of these preliminary findings (Section 4).

2. Informativeness in narratives: A proposed analysis

The notion "level of informativeness" derives from the distinction between two major components of textual material: informative – defined as *novel contentive material* (Section 2.1) and *non-informative material*, which includes both novel but redundant and non-novel or extraneous material (Section 2.2).

2.1. Eventive, descriptive, and interpretive information units

The basic element of analysis for what we count as "informative material" is an *information unit* or "Infu", which by definition must contain novel information. Since Infus provide novel contentive material, they cannot simply reiterate or reformulate previous information. Semantically, Infus correspond to discourse-functional units comparable to Chafe's (1994) "idea units"; syntactically, they may be less than a clause, but are typically one or more clauses long.

In discussing facets of narrative content, different, though largely complementary, perspectives have been adopted on issues relating to "referential" versus "evaluative" elements as proposed by Labov (1972, 1997) – as re-evaluated and re-analyzed by Aisenman and Assayag (1999), Reinhart (1995), Segal (2001) – or background states versus foreground events – as considered in Berman and Slobin (1994), Hopper (1979), Reinhart (1984). Here, following Berman (1997), we distinguish three types of informative material in narratives – eventive, descriptive, and interpretive. *Eventive Infus* are similar to Labov's (1972) "narrative" or referential clauses; they encode plot-advancing, typically sequentially ordered events, and serve to anchor descriptive and interpretive Infus within a narrative frame. *Descriptive Infus* provide factual information on the circumstances surrounding these events; they make reference to states of affairs and motivations that provide the background to the events that constitute the story. *Interpretive Infus* are closer to canonic notions of narrative evaluation; they express narrators' subjective perspective on the events recounted and their interpretations of the attitudes or internal states which they attribute to participants in these events.

Below, we define and motivate these three types of novel informative material on the basis of narratives produced by English and Hebrew speakers of different ages who were asked to write and tell a story about an incident in which they had been involved in interpersonal conflict (see

Section 3.1). As our basic unit of text division we use the *clause*, in the sense of "a unified predication", following Berman and Slobin (1994: 660–664). In contrast, an Infu is a unit of discourse rather than a semantic proposition or a syntactic construction, and so it can be defined both within and beyond the boundaries of a single clause.

Different types of Infus occur in the text in (1), the written narrative produced by an 11th grade boy at a Californian high school who had been asked to tell and write a story about an incident where he had been involved in interpersonal conflict. Clauses are numbered consecutively, embedded clauses are marked in angle brackets, and material defined as Eventive Infus is marked in bold.[2]

(1) Written Narrative of High School Boy – Grade XI

1) *When I was in the seventh grade,* 2) *I had a conflict with a boy* 3) *who was in a few of my classes.* 4) *As it turned out,* 5) *his father was an executive vice-president at the company* 6) *where my father worked.* 7) *The boy was constantly giving me grief,* 8) *saying that* 9) *if I ever did anything* 10) *to upset him,* 11) *he would have* 12) *my father fired.* 13) *I knew* 14) *this was ridiculous,* 15) *but nevertheless it was plenty annoying.* 16) *The boy was not just annoying to me,* 17) *he had conflicts with at least ten other people* 18) *I knew,* 19) *not exaggerating.*

20) ***So one day we went to the counseling office at the school.*** 21) ***The counselor told us*** 22) *that* <23) *since the teachers had not reported anything*>, 22) *we had no proof of the boy's actions.* 24) *So* ***the administration at the school did nothing.*** 25) ***I visited the principal***, 26) ***but he did not take any action either,*** 27) *so the boy kept up his incessant pestering.* 28) *And* ***one day I finally snapped.*** 29) *When the teacher was out of the room,* 30) ***the boy said something to me,*** 31) ***and I turned around*** 32) ***and confronted him***. 33) *The boy told me* 34) *that I would not* 35) *or could not do anything to him,* 36) *so I proved him wrong.* 37) ***I hit him.*** 38) *And from that day on he stayed away from me.* 39) *I probably should not have resorted to that action,* 40) *but nothing else* 41) *I had done* 40) *worked.*

The text in (1) starts out largely with what we define as Descriptives – as motivated below. The first *Eventive* Infus occur in clauses #20–#21, starting canonically with "So one day" (Berman 2001), followed by other Eventives in Clauses #25 "I visited the principal" and #28 "I finally snapped." These illustrate canonical narrative clauses, chronologically

sequential and temporally specific. As such, these Eventives constitute the episode that forms the background to the confrontation between the narrator and his antagonist in Clauses #31 to #33 and the narrator's action in Clause #37 "I hit him."

Bear in mind that Information Units – that is, narrative material that constitutes novel information – cannot be unequivocally identified by semantic content or syntactic form alone. Infus of the type we term "Eventives" are relatively easy to identify; but drawing the line between Eventives and Descriptives, and specifying the material that we analyzed as Descriptive (and hence non-Eventive) proved to be rather less straightforward. Issues that we addressed in demarcating different types of Information Units involve both discourse functions and linguistic features, including: background events; reported and direct speech; negation; use of habitual, iterative, and protracted aspect; and stative predicates. In what follows, we outline our decisions in defining such material as either Eventives or Descriptives.

Background Eventives – like clauses #20–21 in (1) above – represent material that is clearly dynamic and plot-advancing, hence "eventive", even though it refers to background events, the setting (Berman 2001), or orientation (Labov 1972) to the events making up the episodes that constitute the story. We therefore treated such material as a subclass of Eventives.

Reported and Direct speech: Another issue in defining what constitutes "a plot-advancing sequential event" concerns complement clauses, particularly in cases of reported and direct speech. These are discussed in the literature as either 'verbal representations' or as 'demonstrating representations' (Clark and Gerrig 1990; Coulmas 1986). In our analysis, complement clauses that are introduced by speech act verbs like *told, demanded* were coded as Descriptive while their introducing clauses were counted as Eventives. This is represented by the sequence in (1) "The counselor told us [EVENTIVE] that we had no proof of the boy's actions" [DESCRIPTIVE]. Thus, in (2), an excerpt from the oral story of a Hebrew-speaking man about a student of his named Paul in biology class, the bolded material represents Eventives while all the rest are Descriptive.

(2) Excerpt from Story Told in Hebrew by Adult[3]

And Paul started to interrogate, and to ask *where I found it, and where he could find some and how you get there and what not.* **…** *[Later]* ***Paul explained to them*** *how he caught the mantises and his methods of*

hunting, and where he saw them, and how he saw to food for them, and that they normally eat crickets and where he caught them and what he caught them with.

Negative Eventives: In Labov's original scheme, negative clauses were regarded as "evaluative" rather than referential narrative elements (and see, too, Bamberg and Damrad-Frye's [1987] study of children's narratives). However, following other studies that have queried this criterion (Aisenman and Assayag 1999; Berman and Slobin 1994: 6–9; Segal 2001), we do not automatically treat negated propositions as non-Eventive. The fact that a protagonist refuses to do something, does not do something, or avoids doing something is quite often a plot-advancing element, or it may be the trigger for what happens next. For example, Clause #26 in the text in (1) "but he did not take any action either," like the preceding negative in Clause #24 "The administration at the school did nothing" are both clearly events that trigger what the boys did in response, and so were analyzed as Eventives.

Aspectually Marked Descriptions: Predications in habitual, protracted, or iterative aspect cannot strictly speaking be counted as events since they are not temporally anchored in a specific time. We generally defined these as Descriptive, taking into account their discourse role in context rather than as an across-the-board grammatically determined criterion (Hopper 1979). In our analysis, Descriptive material includes grammatically inflected progressive and perfect forms (e.g., "the boy was constantly giving me grief," "the teachers had not reported anything" in (1) above); aspectual verbs (e.g., "kept up his incessant pestering"); and also aspectual adverbials like *for a long time, all the time, over and over, continually* – particularly relevant to a language like Hebrew, that lacks grammaticized aspect. The bolded material in the excerpt in (3) illustrates such aspectually marked non-eventives.

(3) Excerpt from Oral Story of Woman Graduate Student

***For months** he **would write** me letters, **call me** on the phone, and **come over** to my house. At parties he **would follow** me around and **bug me**. At school he **would constantly try to talk** to me. This was satisfaction. He **had screwed up** and he **was going to** pay.*

Stative Verbs, including *be* and *have* as main verbs, are treated as Descriptive background, e.g., in (1) "When I was in 7th grade, I had a

conflict", as are verbs referring to mental or affective states, e.g., "I know that I am not always cooperative" or "I really hated her for what she did." Non-dynamic predicates like "have an argument" may, however, be treated as Eventive, as periphrastic versions of, say, "We argued about it."

A combination of criteria were thus required to distinguish Eventive and Descriptive material in narratives. In contrast, *Interpretives* – the narrator's subjective commentary and perspective on events – are quite clearly distinct from these other two types of Information Units. The high school text in (1), as noted, consists largely of Descriptives, with relatively few Eventives and even fewer Interpretive elements. These occur in the protagonist's perception of his classmate's threat to have his father fired as "(I knew) this was ridiculous, but …," and of his own behavior in response to the antagonist at the end of the story, when he says "I probably should not have resorted to that action." These interpretive elements typically occur in, but are by no means confined to, the setting and coda of narratives as in (1). For example, towards the middle of her account, a woman narrator says of her co-worker antagonist that she "had a very volatile disposition," and of herself that "I am not usually a very confrontational person and it takes a lot for me to get mad."

We have gone into some detail about our decisions in demarcating Eventive compared with Descriptive material, while briefly illustrating what we interpreted as Interpretation. This appeared necessary, since the tripartite division into types of narrative information proposed by Berman (1997) on the basis of oral narratives produced by young children is applied here to both written as well as spoken narratives from adolescents and adults. Most critical for the present analysis is the fact that the three classes of narrative content we identify – Eventive, Descriptive, and Interpretive – represent different types of *Information Units,* which together make up the informative substance of narrative discourse and so contribute uniquely to its "informativeness."

2.2. Non-novel and non-informative material

The other major block of narrative content consists of what we define as "non-informative" material since it fails to encode *new* narrative information, eventive, descriptive, or interpretive. We identify three classes of non-novel material: (1) contentive, but non-novel; (2) non-contentive; and (3) extra-contentive. The first class of non-novel contentive material refers to reiterations of propositional content and to reformulations of

information that has already been mentioned. These different types of non-informative material are bolded in the text in (4), the oral version of the narrative of the high school boy who had previously written the same story that is reproduced in (1) above.

(4) Oral Version of Story Written by High School Boy – Grade XI

1) ***I guess*** 2) *the first one that comes to mind,* 3) *since we were talking about my dad, I went to* ***school*** *middle school out in La Jolla.* 5) *And one of the kids in my class,* 6) *<it turned out>* 5) *his dad was my dad's boss,* 7) *not directly,* ***but he*** *his dad was* ***a*** *an executive vice president of the company,* 8) *and my dad was uh* ***one of the lab*** *one of the guys* 9) *that* ***works actually*** *works in the lab.* 10) ***And so*** *he was constantly uh* 11) *<****I don't know****>* 10) ***just*** *bugging me,* 12) *saying* 13) *"****you know*** *if you mess with me* 14) *my dad can have your dad* 15) *fired* ***and all this stuff****."* 16) *I was like,* 17) *"Shut up!"* ***you know****.* 18) ***And he, I don't know,*** *he just eventually got on my nerves really bad.* 19) ***And the teacher was out of the classroom*** 20) *and he said something,* 21) *and I* ***just*** *turned around* 22) *and* ***like*** *uh* ***how can I say****?* 23) *I didn't really assault him,* 24) *but I* ***like*** *pushed him real hard* ***you know****,* 25) *and I was like* 26) *"Don't mess with me,* 27) *you know* 28) *it makes me mad* 29) *when you talk about my dad that way."* 30) ***And*** *he's like* 31) *"****Yeah****, what are you going to do about it?"* 32) *So* ***then*** *I smacked him,* 33) *and I didn't get in trouble* 34) *because the teacher was out of the classroom.* 35) *But he never bothered me again.* 36) *So I got lucky.*

The bolded "non-informative" material in (4) accounts for over 20% of this text (51 out of 233 words). This is in marked contrast to its written counterpart in (1), where the only material that might be counted as lying outside the three types of Infus, that is, as non-referentially informative, is the qualifying expression "not exaggerating" in Clause #19.

The first class of "non-informatives" we identify are, in fact, contentive, but they are non-novel, since they *reiterate* information that has already been provided or will be provided later in the narrative – like "the teacher was out of the classroom" in Clause #19 and again in Clause #34 of (4).

The second class of such elements divides up into *disfluencies* and *discourse markers*. Disfluencies include false starts, repairs, and repetitions – like the bolded items in Clauses #3 and #8 of (4).[4] These noncontentive elements, which form part of what Clark (1996) terms "collateral" material,

typically arise due to the pressures of rapid, online processing of linguistic output in the course of producing spoken discourse.

The other "noncontentive" elements are items termed variously discourse markers (Fleischman and Yaguello 2003; Jucker and Ziv 1998; Schiffrin 1995), pragmatic markers (Brinton 1996), or *particules énonciatives* (Fernandez 1994). These take the form of non-reiterated lexical elements which, like repairs and other disfluencies, are not part of the referential contentive material of a given proposition, We identified four types of discourse marking elements: (i) "interactive" items that are sender- or addressee-oriented (Berman, Ragnarsdóttir, and Strömqvist 2002) and communicative in intent, e.g., *I guess, you know* in (4) above; (ii) "segment-taggers" at segment beginnings – e.g., *okay, well , yeah*, and also frequent use of utterance-initial *and, so* in the text in (4) – and at segment endings – *that's about it*; (iii) "qualifiers" – both intensifiers like *a whole lot, really* – and hedges like *basically* or *just, like* in (4); and (iv) online "monitoring" remarks, e.g., *how can I put it, let's say.*

In our analysis, these different types of discourse markers were counted by occurrence as tokens rather than as types. And care was taken to consider their use in the text, so that the term *like* would not be counted as a discourse marker in a context such as "and then she *went like / and I was like* 'don't mess with me' " since it is, rather, a slang variety of the speech act verb *say*.

The elements bolded in (4) are typical, although not confined to, oral discourse, and mark a distinct contrast between written texts produced by the same person on the same topic across the data-base. This difference is clear in comparing the high schooler's written and spoken texts in (1) and (4). And these features of oral monologic text production are clearly noticeable in the bolded elements in the oral narrative of a 7th grade girl who first wrote and then told the same story.

(5) Oral Story Told by Junior High School Girl – Grade VII

Um ***well***, ***alright***, ***okay*** *we have this one friend, and* ***and*** *she's* ***like really*** *rude.* ***And*** *so because she didn't like our other friend, because she was jealous of her, because she was* ***like*** *better than her,* ***so*** *she* ***didn't so she want*** *so she didn't want us to be her friend. And* ***so we um*** *so she would* ***kind of like*** *exclude her, and* ***so*** *we* ***just*** *like "You can either be our friend and her friend or not be our friend."* ***And so***, ***well***, *she accepted* ***her you know*** *that,* ***but so*** *now she's* ***like*** *better friends with her. But there's still* ***like*** *some problems with them.*

A third and final class of non-informative material differs from the other categories discussed so far in this section (reiterations, disfluencies, and discourse markers) since it lies outside the story frame and so is analyzed as "story-external" material**.** This includes expository-like generalizations and various kinds of meta-textual and inter-textual commentary. This is illustrated by the end of the story written by the woman whose text is excerpted in (3) above, about her breakup with a longtime boyfriend.

(6) Closing Part of Narrative Written by Woman

Trust is something that is earned over time, during which you do not get caught lying. This is something I live by today. Conflict can teach you a lot about people and about yourself. I learned a lot from that conflict.

The closing sentence in (6) is a classic coda since it goes back to the story itself, hence is by definition not extraneous to it, and so would be classed as an Interpretive Infu. But the three sentences preceding it are story-external material in the form of generalized comments lying outside the story frame. These represent a sophisticated departure from the narrower framework of narrative action structure, and are typical of more maturely proficient story-tellers.

To sum up this section, figure 1 shows the conceptual structure of the model for analyzing our data, distinguishing two major components of Informative versus Non-Informative material.

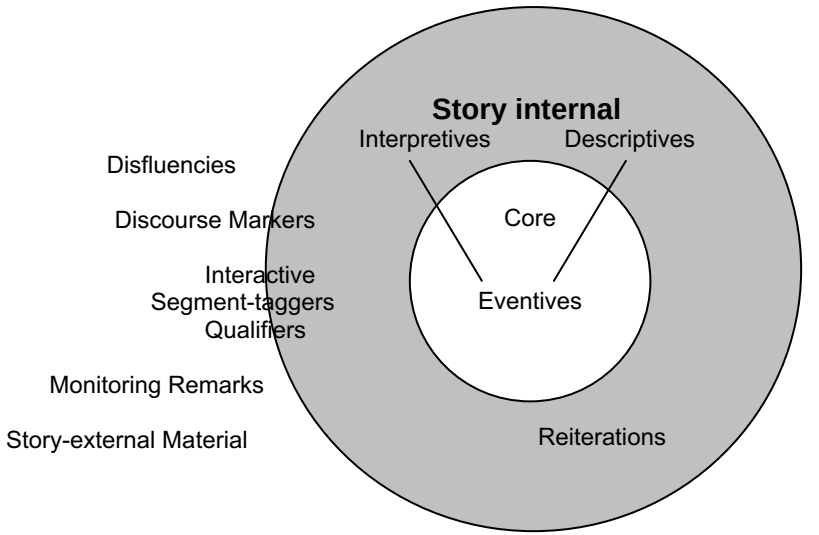

Figure 1. Informative and non-informative elements within, across, and beyond the story frame

Information Units – eventives, descriptives, and interpretives – frame the story, with eventives at the core of the narrative, anchoring descriptives and interpretives within a narrative frame. Reiterative non-informative units repeat the same narrative information, also within the narrative frame. Cutting across the narrative frame is non-informative, although communicative material (disfluencies and discourse markers). Monitoring remarks are more text-oriented and, together with story-external material, lie outside the narrative frame.

3. Preliminary analysis

The categories described in Section 2 were applied to spoken and written personal-experience narratives produced by schoolchildren, adolescents, and adults, native speakers of Californian English and Israeli Hebrew, who were asked to tell and write a story on an incident of interpersonal conflict in which they had been involved.

3.1. Sample database

The database of the present study is taken from a subset of the Hebrew and the English-language sample of a large-scale cross-linguistic project in which closely comparable written and spoken texts were produced by schoolchildren and adults, native speakers of different languages (Berman 2005; Berman and Verhoeven 2002).[5] Subjects in seven countries, in the same four age-groups (grade schoolers aged 9–10 years, junior high schoolers aged 12–13, high school seniors aged 16–17, and graduate-level university students) were shown a three-minute wordless video clip depicting different conflict situations in a school setting. After seeing the video clip, each participant was required to produce four texts in randomly balanced order. They were asked to write and tell a story about an incident where they had been involved in a situation of "problems between people" (a personal-experience narrative) and to write a composition and give a talk in which they discuss the topic "problems between people" (an expository discussion). Thus both narrative and expository texts were elicited on the shared, socially relevant theme of interpersonal conflict. The vast majority of subjects across the different languages – around 90% from the youngest age-group up – followed these instructions, in the sense that they told a story in one case (typically in past tense and/or perfective aspect, with highly specific, personal reference to people, times, and places) and expressed general ideas (typically in the timeless present, with mainly impersonal or generic reference to people and situations) in the other.

The study reported here analyzes part of the written and spoken narrative texts produced in speech and writing by 26 different subjects – 4 in English and 4 in Hebrew at each of the three school-age groups (Grades IV, VII, XI) and one adult in each language – yielding a total of 52 narrative texts. These are all "authentic" texts, since they are unpublished, and were elicited from "naïve" speaker-writers without any editing or revision on our part. And they are elicited from speaker-writers of middle-class "standard language" background (Jisa 2004), where the adults were non-specialists in language and non-experts in writing but well-educated and "mainstream" in social class and literacy background.

3.2. Initial trends for narrative information packaging

The present study adopts a "case-study" approach, applying the model we have formulated to individual instances out of a far larger data-base, aimed at initial testing of its applicability.[6]

Our analysis involves the two variables of modality (speech versus writing) and age or level of literacy. We predicted, first, that written texts would reveal denser information packaging than their spoken counterparts, where informational density is defined as proportion of informational, "contentive" material compared with extraneous "non-informative" material. Second, this proportion would change as a function of age and increased literacy, and there would be less difference in level of informativeness between the written and spoken texts of the younger children compared with high schoolers and adults. Third, these age-related differences would reflect not only differences in amount, but also in kind of information packaging. Fourth, our general model for characterizing developmental and cross-modal distinctions was expected to apply similarly to texts in both English and Hebrew.

Findings are presented for 52 out of a total 320 English and Hebrew narrative texts. Each text was analyzed in terms of informative (eventive, descriptive, interpretive) versus non-informative (non-novel contentive, non-contentive, extra-contentive) elements, with non-contentive material broken down into disfluencies and four types of discourse markers. Tables 1 to 3 sum up findings for the spoken and written narrative texts of three groups of English- and Hebrew-speaking schoolchildren (8 in grade school, 8 junior high, and 8 high school [48 texts], plus two adults [4 texts]).

Table 1 presents raw figures for average text length in terms of number of clauses per text across the variables of age, modality, and language.

Table 1. Mean number of clauses in spoken and written texts in English and Hebrew, by age group

	Modality	Spoken		Written	
Group	# Texts	English	Hebrew	English	Hebrew
G [9-10]	8 + 8	114	93	67	59
J [12-13]	8 + 8	70	84	79	65
H [16-17]	8 + 8	179	113	176	68
Adults	2 + 2	33	28	25	21

Table 1 shows that, except in one case, English texts are longer than the Hebrew, a trend that was strongly confirmed by subsequent statistical analysis of a total 160 written and spoken narrative texts in the two languages.[6] Because of the unequal length of texts, informative versus noninformative material that they contained was analyzed by proportional distributions – as shown in the following tables.

Tables 2a and 2b present the mean percentage of informative versus non-informative units by age group, modality, and language, out of the total number of units counted in these 52 texts.

Table 2a. Distribution of informative material in spoken and written English and Hebrew texts (N=52), by age group

Modality	Spoken			Written		
Group	English	Hebrew	Average	English	Hebrew	Average
G [9-10]	57.6	55.6	56.6	94.6	84.8	89.7
J [12-13]	50.4	54.7	52.5	88.5	88.7	88.6
H [16-17]	47.3	48.2	47.8	82.8	80	81.4
Adults	52.9	46	49.5	85	76.7	80.8

Table 2b. Distribution of non-informative material in spoken and written English and Hebrew texts (N=52), by age group

Modality	Spoken			Written		
Group	English	Hebrew	Average	English	Hebrew	Average
G [9-10]	42.4	44.4	43.4	5.4	15.2	10.3
J [12-13]	49.6	45.3	47.5	11.4	11.3	11.3
H [16-17]	52.7	51.8	52.2	17.2	20	18.6
Adults	47.1	54	50.5	15	23	19

The figures in tables 2a and 2b confirm our predictions regarding *modality*: Written texts indeed reveal higher informativeness and hence denser information packaging than their spoken counterparts as measured here: 80–90% of written text material consists of informative units, compared with only around half of the spoken text material. As predicted, this distribution is stable across English and Hebrew, as averaged for each modality. Tables 2a and 2b further reveal a slight tendency towards an increase in non-informative material in the older age groups in both speech and writing. (Subsequent statistical analysis of the larger sample reveals that this trend exists, but is non-significant). Relatedly, there appeared to be

a difference in the *quality* of non-informative units as a function of age, as shown below.

Table 3 presents the mean percentage of each type of informative units out of the total number of informative text units, by age group, modality, and language.

Table 3. Distribution in percentages of types of informative material (eventive, descriptive, interpretive) in spoken and written English and Hebrew texts (N=52), by age group

Modality		Spoken			Written		
Informative units (100%)	Group	ENG	HEB	Average	ENG	HEB	Average
Eventives	G	45.8	56	50.9	53.9	48.7	51.3
	J	36.7	34.6	35.6	35.2	36.2	35.7
	H	40.4	16.2	28.3	34.2	21.2	27.7
	Adults	33.3	34.8	34	35.3	39.1	37.2
Descriptives	G	51.4	40	45.7	42.3	46.2	44.3
	J	60	48.1	54	57.4	55.3	56.4
	H	48.1	61.8	54.9	47.7	59.6	53.7
	Adults	44.4	34.8	39.6	41.2	34.8	38
Interpretives	G	2.8	4	3.4	3.9	5.1	4.5
	J	3.3	17.3	10.3	7.4	8.5	8
	H	11.5	22.1	16.8	18	19.2	18.6
	Adults	22.2	21.7	21.9	23.5	26.1	24.8

The figures in table 3 bear out our predictions. The distribution of Infus is similar across English and Hebrew, especially in the written texts. Further, table 3 underscores the *developmental* aspect of our analysis: The averaged means across the two languages reveal that, with increased age and literacy, the amount of eventives goes down, with a concomitant rise in descriptives and interpretives (supported by statistics from the larger sample). This change is especially marked in the interpretive component, which increases dramatically from under 5% to close to one quarter of the informative material, particularly in the written texts.

Our last analysis is of the three types of non-informative material by modality, age group, and language. Table 4 shows their frequencies in raw scores, in terms of text length measured by number of clauses, since there were relatively few such elements, particularly in the written texts.

Table 4. Distribution of types of non-informative material in spoken and written English and Hebrew texts (N=52), by age group

Modality		Spoken		Written	
Non-Informative Units: Frequency	Group	ENG	HEB	ENG	HEB
(1) Non-novel contentives: *Reiterations*	G	12	5	1	2
	J	4	6	1	1
	H	10	13	2	2
	Adults	2	6	0	2
(2) Non-contentives: *Disfluencies*	G	20	16	0	0
	J	13	14	1	1
	H	22	15	1	0
	Adults	3	5	0	0
(2) Non-contentives: *Discourse Markers*	G	21	19	1	2
	J	40	23	3	4
	H	78	40	11	9
	Adults	10	16	3	5
(3) Extra-contentives: *Story-Externals*	G	0	0	1	3
	J	2	1	2	0
	H	6	5	9	2
	Adults	1	0	0	0

The distributions in table 4 reveal clear modality effects: Spoken texts contain many reiterations, disfluencies, and discourse markers, while written texts contain almost no collateral material, and far fewer discourse markers. Adolescents (group J and especially H) use relatively more such elements than the two other groups. This apparent U-shaped curve in use of discourse markers in both spoken and written texts is strongly confirmed by findings from the larger sample, which included 10 subjects in all four age groups, in both languages. And again, the tendency for extra-contentive, expository-like reflective comments to increase with age and literacy, is confirmed when more adult texts are added.

4. Discussion

This analysis has focused on modality-driven differences between spoken and written narratives produced by speaker-writers of American English and Israel Hebrew. In our proposed model of narrative informativeness, Eventive information units form the story core, anchoring Descriptive and

Interpretive novel contentive units as satellites within the story frame. Across and beyond this frame, non-contentive and extra-contentive units governed by factors of ongoing text production express listener-reader orientation and inter-textual commentary.

Our preliminary findings indicate that this model effectively captures essential differences between spoken and written narratives across development: Spoken texts contain twice, sometimes four times, as many "non-informative" elements as their written counterparts. These non-informative elements are mostly either non-novel reiterations or non-contentive "collateral" type material, peaking in adolescence. With age, speaker-writers produce information units that are less eventive and more evaluative in nature, with story-external generalizations and (inter)textual commentary constituting a larger part of "non-informative" material.

In terms of modality, spoken texts are across age groups far more cluttered and less informative than their written counterparts, in the sense in which the term "informative" was defined in the present context. Within the story-frame, spoken texts contain more reiterations of contentive material, while across the story frame, they contain more communicatively- and processing-motivated material of the kind we termed "non-novel" or "non-contentive."

Note that our prediction that with age and increased literacy we would find less difference in level of informativeness between the written and spoken texts was *not* confirmed. We interpret the fact that quantitatively, the overall ratio of informative to non-informative material remains the same across age-groups as due to the impact of the differences in processing constraints and circumstances of online versus offline text production that apply in speech compared with writing (see Section 1). That is, these types of modality effects appear to be constrained by general cognitive factors that are in operation from early on. On the other hand, there is a marked *qualitative* change in the types of non-informative material as a function of age. With increased age and literacy, recognition of the requirements of written language as a special style of discourse makes narrators increasingly constrained in use of highly colloquial type discourse markers (interactive, segment tagging, and qualifying) as they come to adopt an increasing text-oriented perspective and a more removed discourse stance as befitting the more formal and highly monitored nature of written discourse (Berman 2005; Berman, Ragnarsdóttir, and Strömqvist 2002). Interestingly, this difference in treatment of written text construction with increasing age and literacy is found even in the genre of personal experience narratives, known to elicit less formal and high-level language

usage than expository type prose (Bar-Ilan and Berman 2007; Berman and Nir-Sagiv 2004).

Moreover, these differences cut across the two languages, suggesting that in western cultures, at all events, differences in basic processing of the two modalities applies in very similar ways. This finding is consistent with comparisons of written and oral narrative productions of schoolchildren and adolescents in Swedish (Strömqvist, Wengelin, and Nordqvist 2004) and French (Gayraud 2000). On the other hand, there is some reason to expect that written language as a special style of discourse rather than as a special mode of production might be more affected by cross-cultural differences. For example, French schooling requires and inculcates very different styles of expression in writing compared with speech (Jisa 2004), compared with the more egalitarian school systems in, say, Sweden and the United States, whereas official written Hebrew differs markedly from colloquial spoken usage but this is not directly taught in the schools. These issues were not addressed in the present study and are worthy of further consideration.

Analysis revealed a clear age-related change shared across English and Hebrew in the nature (although, again, not in the proportion) of contentive narrative material in our database. Development reveals a steady elaborating of bare-bones narrative information: Reference to descriptive and, among older narrators, interpretive elements increases to flesh out the eventive narrative frame, embedding it in the attendant circumstances and motivations that form the background to events. And more mature, literate narrators enrich their accounts by "story-external" commentary, evidence of an increased ability to adopt a more distanced, text-oriented discourse stance. These developments are driven by an internalized narrative schema and developing storytelling abilities that are common to speakers of different languages, illustrated here by Californian English and Israeli Hebrew.

These findings support the idea that discourse development involves greater variety of textual information, in the sense of divergence from canonic, genre-typical elements of text construction – recounting of past events in narratives or formulating of timeless generalizations in expository discussions. The narratives of grade school children start out with a single, mainly eventive, informational layer, which is gradually expanded and elaborated by adding layers of descriptive and interpretive content.

Notes

1. Our data thus combine features of both what are termed "natural" and "contrived" data in a recent debate in the journal *Discourse Studies* 4 (4): 511–548.
2. In examples, punctuation and orthography are standardized from the original transcripts.
3. Hebrew texts are given in free translation rather than morpheme-by-morpheme glosses. For example, progressive and perfect aspect is indicated, although Hebrew does not have grammatical aspect, and so is the indefinite article. But we try to retain some flavor of the original register of usage and rhetorical text even where this results in awkward English.
4. Our analysis excludes nonlexical filler syllables like English *er, um* (Clark and Fox Tree 2002).
5. The project on Developing Literacy in Different Languages and Different Contexts was supported by a major grant from the Spencer Foundation, Chicago, to Ruth Berman as PI. Data collection was supervised by Dorit Ravid for Hebrew in Israel and by Judy S. Reilly for in San Diego, California.
6. Since submitting this paper for publication, the authors have concluded investigation along largely similar lines of 160 texts in English and Hebrew. Statistically-based analyses reported in Ravid and Berman (2006) fully substantiate the predictions and initial findings presented here.

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Usage-based and form-focused SLA: The implicit and explicit learning of constructions

Nick C. Ellis

Psycholinguistics substantiates that language acquisition is usage-based. The first half of this paper reviews psycholinguistic research showing how language processing is intimately tuned to input frequency at all levels of grain: input frequency affects the processing of phonology and phonotactics, reading, spelling, lexis, morphosyntax, formulaic language, language comprehension, grammaticality, sentence production, and syntax. That language users are sensitive to the input frequencies of these patterns entails that they must have registered their occurrence in processing. I consider the implications of these effects for a usage-based model, the nature of language representations, and the *implicit* learning of constructions.

The second half of the paper concerns *explicit* language learning. There are 'fragile' aspects of second languages which learners fail to acquire despite high frequency in the ambient language: where input fails to become intake. Such situations arise because learners fail to notice cues which are lacking in salience and redundant in cuing meaning, or because of interference where the features need to be processed in a different way from that usual in their L1. I consider the role of noticing and attention in the initial acquisition of constructions, the effectiveness of form-focused instruction, and the nature of the interface between explicit and implicit learning. I review research concerning the cognitive neuroscience of complementary memory systems, and demonstrate that while they are separate representational systems, nevertheless, explicit knowledge can affect implicit learning in a variety of ways.

In these ways I illustrate how a usage-based account bridges linguistics, applied linguistics, SLA, psycholinguistics and brain science. The usage-based insight opens the study of language acquisition into the broad enterprise of cognitive science.

1. Implicit probabilistic processing of linguistic constructions

Counting from 1 to 10 is early content in most second and foreign language courses and learners of English as a foreign or a second language are soon secure in the knowledge of what 'wʌn' means. But should they be so sure? Consider the following wʌns: 'That's wʌn for the money, two for the show, three to get ready'; 'To love wʌnself is the beginning of a lifelong romance'; 'wʌnce upon a time...'; 'Alice in wʌnderland'; 'wʌn the battle, lost the war'; 'How to win life's little games without appearing to try – wʌn-Upmanship'; 'the human brain is a wʌnderful thing, it starts working the minute you're born and never stops until you're faced with the blank word-processor screen when starting a new article.' These are different wʌns. Form-meaning associations are multiple and probabilistic, and fluent language processing exploits prior knowledge of utterances and of the world in order to determine the most likely interpretation in any given context. This usually works very well and the practiced comprehender is conscious of just one interpretation – Alice in wʌn sense and not the other. But to achieve this resolution, the language processing mechanism is unconsciously weighing the likelihoods of all candidate interpretations and choosing between them. Thus there is a lot more to the perception of language than meets the eye or ear. A percept is a complex state of consciousness in which antecedent sensation is supplemented by consequent ideas which are closely combined to it by association. The cerebral conditions of the perception of things are thus the paths of association irradiating from them. If a certain sensation is strongly associated with the attributes of a certain thing, that thing is almost sure to be perceived when we get that sensation. But where the sensation is associated with more than one reality, unconscious processes weigh the odds, and we perceive the most probable thing: "*all brain-processes are such as give rise to what we may call figured consciousness*" (James 1890). Accurate and fluent langu-age perception, then, rests on the comprehender having acquired the appropriately weighted range of associations for each element of the language input.

Language learning is the associative learning of representations that reflect the probabilities of occurrence of form-function mappings. Frequency is thus a key determinant of acquisition because 'rules' of language, at all levels of analysis from phonology, through syntax, to discourse, are structural regularities which emerge from learners' lifetime analysis of the distributional characteristics of the language input. Learners

have to *figure* language out. It is these ideas which underpin the last thirty years of investigations of cognition using connectionist and statistical models (Elman et al. 1996; Rumelhart and McClelland 1986), the competition model of language learning and processing (Bates and MacWhinney 1987; MacWhinney 1987a, 1997), the recent emphasis on frequency in language acquisition and processing (Bybee and Hopper 2001; Ellis 2002a; Jurafsky 2002), and proper empirical investigations of the structure of language by means of corpus analysis (Sinclair 1991; Biber, Conrad, and Reppen 1998; Biber et al. 1999).

Fluent language processing is intimately tuned to input frequency and probabilities of mappings at all levels of grain: phonology and phonotactics, reading, spelling, lexis, morphosyntax, formulaic language, language comprehension, grammaticality, sentence production, and syntax. It relies on this prior statistical knowledge. Let me give an example or two from each domain just to illustrate the enormity of the learner's database of relevant knowledge. What follows is a very small sample from literally thousands upon thousands of published psycholinguistic demonstrations of learners' implicit statistical knowledge of language. You can track down more detail in Ellis (2002a, 2002b) if interested.

1.1. Orthographics

One of the earliest proofs, a defining study of psycholinguistics half a century ago, was the demonstration by Miller, Bruner, and Postman (1954) that we are sensitive to varying degrees of approximation to our native language. When young adults were shown strings of 8 letters for just a tenth of a second, they could, on average, report 53% of strings made up of letters randomly sampled with equal probabilities (zero-order approximations to English such as 'CVGJCDHM'). They could report 69% of strings where the letters were sampled according to their individual frequencies in written English (first-order approximations like 'RPITCQET'), 78% of second-order approximation strings which preserve common bigram sequences of English (e.g., 'UMATSORE'), and 87% of fourth-order approximating strings made up of common tetragrams in English (like 'VERNALIT'). Clearly, the participants' span of apprehension of more regular orthographic sequences was greater than for less regular ones. The advantage of first-order over zero-order demonstrates that our perceptual systems are sensitive to the fact that some letters occur in our written language more often than others and that our pattern-

recognition units for letters have their thresholds tuned accordingly. The advantage of second-order over first-order shows that our pattern recognition system is tuned to the expected frequency of bigrams. The advantage of fourth-order over second-order demonstrates that we are tuned to orthographic chunks four letters long. These chunking effects extend upwards through the levels of the representational hierarchy, and we can rest assured that in 1954 the undergraduate participants in the Miller et al. study would have been able to report rather more than the first eight letters of the string 'One, two, three o'clock, four o'clock, rock…'

1.2. Phonotactics

We are very good at judging whether nonwords are nativelike or not, and young children are sensitive to these regularities when trying to repeat nonwords (Treiman and Danis 1988). Phonotactic competence simply emerges from using language, from the primary linguistic data of the lexical patterns that a speaker knows (Bailey and Hahn 2001). Frisch et al. (2001) asked native speakers to judge nonword stimuli for whether they were more or less like English words. The nonwords were created with relatively high or low probability legal phonotactic patterns as determined by the logarithm of the product of probabilities of the onset and rime constituents of the nonword. The mean wordlikeness judgments for these nonword stimuli had an extremely strong relationship with expected probability ($r = .87$). An emergentist account of phonotactic competence is thus that any new nonword is compared to the exemplars that are in memory: the closer it matches their characteristics, the more wordlike it is judged. The gathering of such relevant distributional data starts in infancy. Saffran, Aslin, and Newport (1996) demonstrated that 8 month-old infants exposed for only 2 minutes to unbroken strings of nonsense syllables (for example, *bidakupado*) are able to detect the difference between three-syllable sequences that appeared as a unit and sequences that also appeared in their learning set but in random order. These infants managed this learning on the basis of statistical analysis of phonotactic sequence data, right at the age when their caregivers start to notice systematic evidence of their recognizing words.

1.3. Lexical recognition and production

The recognition and production of words is a function of their frequency of occurrence in the language. For written language, high frequency words are named more rapidly than low frequency ones (Forster and Chambers 1973), they are more rapidly judged to be words in lexical decision tasks (Forster 1976), and they are spelled more accurately (Barry and Seymour 1988). Auditory word recognition is better for high frequency than low frequency words (Luce 1986). Kirsner (1994) has shown that there are strong effects of word frequency on the speed and accuracy of lexical recognition processes (in speech perception, reading, object naming, and sign perception) and lexical production processes (speaking, typing, writing, and signing), in children and adults, in L1 and in L2.

Abstraction is an automatic consequence of aggregate activation of high-frequency exemplars, with regression towards central tendencies as numbers of highly similar exemplars increase. Thus there is a single voice advantage – words repeated in the same voice are better recognized than those in a different voice – and this advantage is greater for low frequency words: 'old' words which have been frequently experienced in various places by a variety of speakers inspire 'abstract' echoes, obscuring context and voice elements of the study trace (Goldinger 1998).

1.4. Phonological awareness

Children's awareness of the sounds of their language, particularly at the segmental levels of onset-rime and phoneme, is important in their acquisition of literacy (Ellis and Large 1987). It is an awareness that develops gradually. Thomson, Goswami, and Hazan (2003) demonstrated that 4-7 year old children are better able to identify the word with the odd sound in the Bradley and Bryant (1983) odd-one-out task when the spoken stimuli were from dense phonological neighborhoods where there are lots of words which share these rhymes (e.g., 'bag, rag, jack'), rather than when the stimuli came from sparse ones (e.g., 'pig, dig, lid'). The children were also better in short-term memory span tasks at remembering nonword triples from dense phonological neighborhoods (like 'cham, shen, deek') than triples like 'deeve, chang, shem' derived from sparse ones. These phonological neighborhood density effects are driven by vocabulary age, not by chronological age. Metsala and Walley (1998) proposed a 'lexical restructuring hypothesis' of these effects whereby, as vocabulary increases,

more and more similar words are acquired; this drives an increasingly well-specified representation of these words in terms of subunits like onset and rime, and is an effect which occurs first in dense phonological neighborhoods. It is the learner's knowledge of individual lexical items which drives the abstraction process.

1.5. Spoken word recognition

The most general probabilistic tuning is that auditory word recognition is better for high frequency than low frequency words (Luce 1986). Thus the recognition units for high frequency words have been primed and are set at higher resting levels than those for infrequent words. But the speech signal unfolds over time and the processes of word recognition begin with the very onset of speech. The 'Cohort Model' of speech perception (Marslen-Wilson 1990) proposes that the initial phoneme of a word activates the set of all words in the lexicon which begin that way. Consider the recognition of the word *elephant* according to the cohort model. Phonemes are recognized categorically and on-line in a left-to-right fashion as they are spoken. Hearing **/ɛ /,** a large cohort of words might be activated in the unconscious mind of an educated English listener [aesthetic, any, .., ebony, ebullition, echelon, ... , economic, ecstasy, .., element, elephant, elevate, ..., entropy, entry,…, extraneous,…], if every English word beginning in this fashion, the cohort would comprise 324 recruits or more. As further information comes in, words inconsistent with the phoneme string are eliminated from the cohort. Thus at **/ ɛ l /** the number of possible words in the cohort set might drop to a maximum of 28: [elbow, elder, eldest, elegance, elegiac, elegy, element, elemental, elementary, elephant, elephantine, elevate, elevation,…,]. At the next point in processing the spoken word, **/ɛ l ɔ/**, there are perhaps 12: [elegiac, elegy, element, elemental, elementary, elephant, elephantine, elevate, elevation, elevator, elocution, eloquent; N=12]. At **/ɛ l ɔ f /**, just 2: [elephant, elephantine]. And one more phoneme reduces any uncertainty, with **/ɛ l ɔ f /** unambiguously signaling the single candidate [elephant]. This is the "uniqueness point," the point in a word at which it can be uniquely identified.

This model explains basic neighborhood effects in speech recognition whereby word recognition is harder when there are lots of words that begin in the same way. But the frequency tuning of individual word detectors affects cohort selection too. Marslen-Wilson (1990) proposed that activation in the cohort varies so that items are not simply "in or out."

Rather, higher frequency words get more activation from the same evidence than do low frequency words. This assumption provides a means for accounting for lexical similarity effects, whereby a whole neighborhood of words is activated but the higher frequency words get more activation. Listeners are slower at recognizing low frequency words with high frequency neighbors because the competitors are harder to eliminate. In sum, the Cohort Model proposes that the initial phoneme activates a cohort of words starting with that phoneme, words in the cohort are activated according to their frequency, initial activation is bottom-up, and context effects play a top-down constraining role after initial cohort activation. Such effects demonstrate that our language processing system is sensitive both to the frequency of individual words and to the number of words which share the same beginnings (at any length of computation).

Language learners are sensitive to the frequencies and consistencies of mappings that relate written symbols and their sounds. To the extent that readers are able to construct the correct pronunciations of novel words or nonwords, they have been said to be able to apply sub-lexical "rules" which relate graphemes to phonemes (Coltheart et al. 1993) or larger orthographic units to their corresponding rimes or syllables (Ehri 1998; Goswami 1999; Glushko 1979; Treiman et al. 1995). For the case of adults reading English, words with regular spelling-sound correspondences (like *mint*) are read with shorter naming latencies and lower error rates than words with exceptional correspondences (cf. *pint*) (Coltheart 1978). Similarly, words which are consistent in their pronunciation in terms of whether this agrees with those of their neighbors with similar orthographic body and phonological rime (*best* is regular and consistent in that all *-est* bodies are pronounced in the same way) are named faster than inconsistent items (*mint* is regular in terms of its grapheme-phoneme conversion (GPC) rule, but inconsistent in that it has *pint* as a neighbor) (Glushko 1979). The magnitude of the consistency effect for any word depends on the summed frequency of its friends (similar spelling pattern and similar pronunciation) in relation to that of its enemies (similar spelling pattern but dissimilar pronunciation) (Jared, McRae, and Seidenberg 1990). Adult naming latency decreases monotonically with increasing consistency on this measure (Taraban and McClelland 1987). Because of the power law of learning, these effects of regularity and consistency are more evident with low frequency words than with high frequency ones where performance is closer to asymptote (Seidenberg et al. 1994).

1.6. Morphosyntax

Morphological processing, like reading and listening, shows effects of neighbors and false friends where, even within the regular paradigm, regular inconsistent items (e.g., *bake-baked* is similar in rhyme to neighbors *make-made*, and *take-took* which have inconsistent past tenses) are produced more slowly than entirely regular ones (e.g., *hate-hated*, *bate-bated*, *date-dated*) (Daugherty and Seidenberg 1994). These neighborhood effects, like all of the frequency effects across all domains of language processing that are so well modeled by connectionist simulations, attest the veracity of the core assumption of usage-based accounts: the language processing system is affected by every instance of usage, echoes of each usage are retained in memory, and the collaboration of these exemplars tunes the operations of the processing system. Ellis and Schmidt (1998) measured production of regular and irregular forms as learners practiced an artificial second language where regularity and frequency were factorially combined. Accuracy and latency data demonstrated frequency effects for both regular and irregular forms early in the acquisition process. However, as learning progressed, the frequency effect on regular items diminished whilst it remained for irregular items – a classic frequency by regularity interaction which is a natural result in connectionist models of morphological ability of simple associative learning principles operating in a massively distributed system abstracting the statistical regularities of association using optimal inference (MacWhinney and Leinbach 1991; Plaut et al. 1996).

1.7. Formulaic language

Just as we learn the common sequences of sublexical components of our language, the tens of thousands of phoneme and letter sequences large and small, so also we learn the common sequences of words. Formulae are lexical chunks which result from binding frequent collocations (Pawley and Syder 1983). Large stretches of language are adequately described by finite-state-grammars, as collocational streams where patterns flow into each other. Sinclair (1991) summarized this as the Principle of Idiom “a language user has available to him or her a large number of semi-preconstructed phrases that constitute single choices, even though they might appear to be analyzable into segments. To some extent this may reflect the recurrence of similar situations in human affairs; it may illustrate

a natural tendency to economy of effort; or it may be motivated in part by the exigencies of real-time conversation." Rather than its being a rather minor feature, compared with grammar, Sinclair suggested that for normal texts, the first mode of analysis to be applied is the idiom principle, as most of text is interpretable by this principle. We process collocations faster and we are more inclined therefore to identify them as a unit (Schooler 1993; Bod 2001). These processing effects are crucial in the interpretation of meaning: it is thus that an idiomatic meaning can overtake a literal interpretation, and that familiar constructions can be perceived as wholes. Much of language production consists of piecing together the ready-made units appropriate for a particular situation, and much of comprehension relies on knowing which of these patterns to predict in these situations.

1.8. Language comprehension

The Competition Model (Bates and MacWhinney 1987; MacWhinney 1987a, 1997) emphasizes lexical functionalism where syntactic patterns are controlled by lexical items. Lexical items provide cues to functional interpretations for sentence comprehension or production. Some cues are more reliable than others. The language learner's task is to work out which are the most valid predictors. The Competition Model is the paradigmatic example of constraint-satisfaction accounts of language comprehension. Consider the particular cues that relate subject-marking forms to subject-related functions in the English sentence, *The learner counts the words*. They are preverbal positioning (*learner* before *counts*), verb agreement morphology (*counts* agrees in number with *learner* rather than *words*), sentence initial positioning, and use of the article *the*. Case-marking languages, unlike English, would additionally include nominative and accusative cues in such sentences. The corresponding functional interpretations include actor, topicality, perspective, givenness, and definiteness. Competition model studies analyze a corpus of exemplar sentences which relate such cue combinations with their various functional interpretations, thus to determine the regularities of the ways in which a particular language expresses, for example, agency. They then demonstrate how well these probabilities determine (i) cue use when learners process that language, and (ii) cue acquisition – the ease of learning an inflection is determined by its cue validity, a function of how often an inflection occurs as a cue for a certain underlying function (cue availability) and how reliably it marks this function (cue reliability) (MacWhinney 1997).

For illustration of some more particular cues in sentence comprehension, consider the utterance "*The plane left for the …*" Does *plane* refer to a geometric element, an airplane, or a tool? Does *left* imply a direction, or is it the past tense of the verb *leave* in active or in passive voice? Odds on that your interpretation is along the lines in *The plane left for the East Coast*, and that you would feel somewhat led up the garden path by a completion such as *The plane left for the reporter was missing*. But less so by *The note left for the reporter was missing* (Seidenberg 1997). Why? Psycholinguistic experiments show that fluent adults resolve such ambiguities by rapidly exploiting a variety of probabilistic constraints derived from previous experience. There is the first-order frequency information: *plane* is much more frequent in its vehicle than its other possible meanings, *left* is used more frequently in active rather than passive voice. Thus the ambiguity is strongly constrained by the frequency with which the ambiguous verb occurs in transitive and passive structures, of which reduced relative clauses are a special type. On top of this there are the combinatorial constraints: *plane* is an implausible modifier of noun *left*, so *plane left* is not a high probability noun phrase, and is thus less easy to comprehend as a reduced relative clause than *note left* because it is much more plausible for a note to be left than to leave.

Studies of sentence processing show that fluent adults have a vast statistical knowledge about the behavior of the lexical items of their language. They know the strong cues provided by verbs, in English at least, in the interpretation of syntactic ambiguities. Fluent comprehenders know the relative frequencies with which particular verbs appear in different tenses, in active vs. passive and in intransitive vs. transitive structures, the typical kinds of subjects and objects that a verb takes, and many other such facts. This knowledge has been acquired through experience with input that exhibits these distributional properties and through knowledge of its semantics. This information is not just an aspect of the lexicon, isolated from 'core' syntax; rather, it is relevant at all stages of lexical, syntactic and discourse comprehension (McKoon and Ratcliff 1998; Seidenberg and MacDonald 1999). Frequent analyses are preferred to less frequent ones.

1.9. Implications for language learning and instruction

There is no scope here for further review of psycholinguistic effects. I refer you to Altman (1997), Ellis (2002), Gernsbacher (1994), Harley (1995). McKoon and Ratcliff (1998) and Jurafsky (2002) for more complete

treatment of these phenomena at all levels of language processing, in comprehension and production, in first and second language, from semantics, through syntax and grammaticality, right down to the tuning of infants' iambic/trochaic bias in their language-specific production of prosody. But what is here is surely enough to illustrate that the constructicon is huge indeed, involving tens of thousands of pieces, large and small, and mappings across several input and output modalities and to semantic and conceptual systems. And *all* of these associations are probability tuned.

Fluent native speakers have figured out language by an implicit tallying of frequencies of occurrence and mapping. Language learners have to do the same: they simply cannot achieve the optimality of nativelike fluency without having acquired this probabilistic knowledge. Luckily, of course, they don't have to consciously count the occurrences and their interpretations. As is clear from introspection, this frequency information is acquired implicitly; it is an incidental product of usage. It doesn't seem like we spend our time counting the units of language, instead, when we use language, we are conscious of communicating. Yet in the course of conversation we naturally acquire knowledge of the frequencies of the elements of language and their mappings. As Hasher and Chromiak (1977) put it: "the processing of frequency may fall into the domain of what Posner and Snyder (1975) have called 'automatic processes.' That is, of processes which the organism runs off both without any awareness of the operation, with no intention of doing so, and with little effort, in the sense that the tagging of frequency has little impact on one's ability to simultaneously attend to other aspects of a situation, such as the interpretation of an ongoing conversation" (Hasher and Chromiak 1977: 173). This knowledge, at the very core of communicative competence, is acquired on the job of language processing. The activation of existing mental structures (representing letters, letter clusters, sounds, sound sequences, words, word sequences, grammatical constructions, etc.), whatever the depth of processing or the learner's degree of awareness as long as the form is attended to for processing, will result in facilitated activation of that representation in subsequent perceptual or motor processing. Each activation results in an increment of facilitated processing. It's a power function which relates improvement and practice, rather than a linear one, but it's a process of counting and tuning nonetheless (Ellis 2002a). Whatever else traditional grammar books, teachers, or other explicit pedagogical instruction can give us towards effective language learning, it is not this frequency information. A dictionary can't give you

the odds, nor a grammar. The only source is the number of appropriate usages. Which is why an essential component of language experience and language instruction is communicative input and output.

In summary of the first half of this account of language acquisition, the bulk of language acquisition is implicit learning from usage. Implicit learning supplies a distributional analysis of the problem space: frequency of usage determines availability of representation according to the power law of learning, and this process tallies the likelihoods of occurrence of constructions and the relative probabilities of their mappings between aspects of form and interpretations, with generalization arising from conspiracies of memorized utterances collaborating in productive schematic linguistic constructions. In these ways, unconscious learning processes, which occur automatically during language usage, are necessary in developing the *rationality* of fluency (Anderson 1989; Ellis 2003, 2005; Jurafsky 2002).

2. Explicit attentive registration of linguistic constructions

A central and longstanding theme in second language research has concerned the interface between explicit and implicit knowledge. Krashen's (1985) Input Hypothesis was a non-interface position which posited that although adults can both subconsciously acquire languages and consciously learn about language, nevertheless (i) subconscious acquisition dominates in second language performance; (ii) learning cannot be converted into acquisition; and (iii) conscious learning can be used only as a Monitor, i.e., an editor to correct output after it has been initiated by the acquired system. The phenomena gathered thus far lend support to the importance of implicit/subconscious acquisition of language. Nevertheless, these incidentals are not sufficient. Many aspects of language are unlearnable, or at best only very slowly acquirable, from implicit processes alone. Which is why an attentive focus on the form-meaning relation is also necessary in the initial registration of pattern recognizers for constructions.

If implicit naturalistic acquisition was all there was to it, then second language acquisition would be as effective as first language acquisition, and would routinely proceed to an endpoint of fluent and proficient success for all individuals who engage naturalistically in communication in their L2. But this is not the case. It is a defining concern of second language research that there are certain aspects of language to which second language learners

commonly prove impervious, where input fails to become intake (Corder 1967).

Schmidt's paradigm case, Wes, was very fluent, with high levels of strategic competence, but low levels of grammatical accuracy. He was described as being interested in the message, not the form, and as being impatient with correction. In discussing Wes's unconscious naturalistic acquisition of ESL in the five years since coming to America, Schmidt (1984: 5) reported:

> If language is seen as a medium of communication, as a tool for initiating, maintaining and regulating relationships and carrying on the business of life, then W has been a successful language learner… If language acquisition is taken to mean (as it usually is) the acquisition of grammatical structures, then the acquisition approach may be working, but very slowly… Using 90% correct in obligatory contexts as the criterion for acquisition, none of the grammatical morphemes counted has changed from unacquired to acquired status over a five year period.

Schmidt concluded his report of Wes with a call for research on the proposition that: "in addition to communicative effort, cognitive effort is a necessary condition for successful adult SLA" (Schmidt 1984: 14). Clearly he was suggesting a cognitive effort above and beyond the implicit learning that I have been describing so far. Six years later, Schmidt (1990) proposed in his *noticing* hypothesis that a conscious involvement, explicit learning, was required for the conversion of input to intake: it is necessary that the learner notices the relevant linguistic cues.

This idea has rightly become a cornerstone of second language research. A strong form of the noticing hypothesis is that attention must be paid to some aspect of the stimulus environment and that aspect must be noticed before a mental representation of it can first be formed. I believe that this is broadly correct, although with two provisos. The first is the strong form of the implicit tallying hypothesis which I have explained in the first half of this paper – that once a stimulus representation is firmly in existence, that stimulus need never be noticed again; yet as long as it is attended for use in the processing of future input for meaning, its strength will be incremented and its associations will be tallied and implicitly catalogued. The second is that implicit learning is clearly sufficient for the successful formation of new chunks from the binding of adjacent or successive items which are experienced repeatedly. Implicit learning is specialized for incremental cumulative change: (i) the tuning of strengths of preexisting representations,

and (ii) the chunking of contiguous or sequential existing representations. Otherwise, new associations are best learned explicitly.

Attention is required in order to bind features to form newly integrated objects. Attention carves out for conscious experience the correct subset of conjunctions amidst the mass of potential combinations of the features present in a scene. Attentional focus is the solution to Quine's (1960) 'gavagai' problem that single words cannot be paired with experiences since they confront experience in clusters. Imagine a second language community who say 'gavagai' when confronted by a rabbit. Other things being equal, it is natural to translate the word as 'rabbit,' but why not translate it as, say, 'undetached rabbit-part' since any experience which makes the use of 'rabbit' appropriate would also make that of 'undetached rabbit-part' appropriate. But guided attention, focused by sharing the gaze and actions of another, scaffolded by interaction that creates some focus on form or consciousness-raising, makes salient the appropriate features. Explicit, episodic memory systems then rapidly and automatically bind together disparate cortical representations into a unitary representation of these new conjunctions of arbitrarily paired elements (Squire 1992) – a unitary representation that can then be recalled by partial retrieval cues at a later time. Thus attention, noticing, and explicit memory are key to the formation of new pattern recognition units.

The noticing hypothesis subsumes various ways in which SLA can fail to reflect the input (Ellis 2002b point 3). In what follows here I will consider just two of these: failing to notice cues because they are not salient, and failing to notice that cues need to be processed in a different way from that relevant to L1.

2.1. Failing to notice cues because they are not salient

While some grammatical meaning-form relationships are both salient and essential to understanding the meaning of an utterance (e.g., Spanish interrogatives 'qué' [what?] and 'quién' [who?]), others, such as grammatical particles and many morphological inflections like that third person singulars in English, are not. Inflections marking grammatical meanings such as tense are often redundant since they are usually accompanied by temporal adverbs which indicate the temporal reference. The high salience of these temporal adverbs leads L2 learners to attend to them and to ignore the grammatical tense.

The remedy is explicit learning. In these situations, some type of form-focused instruction or consciousness raising (Sharwood-Smith 1981) can help the learner to 'notice' the cue in the first place. Schmidt summarized it thus: "since many features of L2 input are likely to be infrequent, non-salient, and communicatively redundant, intentionally focused attention may be a practical (though not theoretical) necessity for successful language learning" (Schmidt 2001). Terrell characterized explicit grammar instruction as "the use of instructional strategies to draw the students' attention to, or focus on, form and/or structure" (Terrell 1991), with instruction targeted at increasing the salience of inflections and other commonly ignored features by firstly pointing them out and explaining their structure, and secondly by providing meaningful input that contains many instances of the same grammatical meaning-form relationship. An example is 'processing instruction' (VanPatten 1996) which aims to alter learners' default processing strategies, to change the ways in which they attend to input data, thus to maximize the amount of intake of data to occur in L2 acquisition. Once consolidated into the construction, it is this new cue to interpretation of the input whose strengths are incremented on each subsequent processing episode. The cue doesn't have to be repeatedly noticed thereafter; once consolidated, mere use in processing for meaning is enough for implicit tallying.

2.2. Preservation and transfer – The magnetism of L1

Other common situations where implicit learning does not take place in SLA involve L1 entrenchment. The initial state of the neural stuff involved in language processing is one of plasticity whereby structures can emerge from experience as the optimal representational systems for the particular L1 they are exposed to. Infants between 1 and 4 months of age can perceive the phoneme contrasts of every possible language, but by the end of their first year they can only distinguish the contrasts of their own (Werker and Tees 1984; Werker and Lalonde 1988). In contrast to the newborn infant, the starting disposition of the neural stuff for second language acquisition is already tuned to the L1 and is set in its ways. What might be examples of two separate phonemic categories, /r/ and /l/, for an L1 English language speaker are all from the same phonemic category for an L1 Japanese speaker. And in adulthood the Japanese native cannot but perceive /r/ and /l/ as one and the same. The same form category is activated on each hearing and incremented in strength as a result. And whatever the various

functional interpretations or categorizations of these assorted hearings, their link to this category is strengthened every time, rightly or wrongly. The phonetic prototypes of one's native language act like perceptual magnets, or attractors, distorting the perception of items in their vicinity to make them seem more similar to the prototype (Kuhl and Iverson 1995). Under normal L1 circumstances, usage optimally tunes the language system to the input. A sad irony for an L2 speaker under such circumstances of transfer is that more input simply compounds their error; they dig themselves ever deeper into the hole begun and subsequently entrenched by their L1.

Proven remedies here make use of exaggerated stimuli and adaptive training (McClelland, Fiez, and McCandliss 2002). This, like errorless learning techniques more generally, ensures that subsequent responding correctly differentiates the new contrast rather than compounding the old confusion (Baddeley and Wilson 1994; Baddeley 1992; Evans et al. 2000). Contrastive pairs such as "rock" vs. "lock" are made more exaggerated by extending their outer limits beyond the normal range until L2 learners can perceive the difference. They start with these discernible poles and then, as repeated occurrences are correctly identified, the discrimination is made more difficult. The use of such exaggerated stimuli and adaptive training leads to rapid learning, while the use of difficult stimuli with no adaptive modification produced little or no benefit (McCandliss et al. 2002; McClelland 2001).

Other examples of learner's first language experience leading them to look elsewhere for their cues to interpretation include English learners of Chinese who have difficulty with tones, and Japanese learners of English with the article system, both problems resulting from zero use in the L1. Similarly, with case marking, word order, agreement, and noun animacy, along with other cues, all helping to identify the subject of a sentence to lesser or greater degree in different languages, learners carry their L1 cue strength hierarchy across to their L2, only gradually resetting the ordering after considerable L2 experience (MacWhinney 1987b), if at all (MacWhinney 2001). Under normal L1 circumstances, usage optimally tunes the language system to the input; under these circumstances of low salience of L2 form, all the extra input in the world might sum to naught, and we describe the learner as having 'fossilized.' Again, the instructional techniques that are commonly marshaled in such circumstances accord to the general principle of explicit learning in SLA: If you can change the cues that learners focus upon in their language processing, so you change what their implicit learning systems tune.

And the data show that these forms of attentional focus are effective and that language acquisition can be speeded by such provision. Reviews of the experimental and quasi-experimental investigations into the effectiveness of L2 instruction (Doughty and Williams 1998; Ellis and Laporte 1997; Hulstijn and DeKeyser 1997; Lightbown, Spada, and White 1993; Long 1983; Spada 1997), particularly the comprehensive meta-analysis of Norris and Ortega (2000), demonstrate that focused L2 instruction results in large target-oriented gains, that explicit types of instruction are more effective than implicit types, and that the effectiveness of L2 instruction is durable. This is not to say that just providing learners with pedagogical rules will make them into fluent language users. Far from it (Krashen and Terrell 1983; Krashen 1985), because then the learner neither gets the exemplars nor the tuning. Pegagogical rules are only properly effective when demonstrated in operation with a number of illustrative exemplars of their application (Ellis 1993) and when they can subsequently thus affect input processing in usage.

We learn language while using language. When things go right, when routine communication comes easy and fluent, this time on task tunes our skills without us giving much thought to it. When things go wrong, when communication breaks down, we try hard to negotiate meaning, and we learn a lot about linguistic construction in the process. Implicit learning of language occurs during fluent comprehension and production. Explicit learning of language occurs in our conscious efforts to negotiate meaning and construct communication. There is a wide range of attentive processes of working memory which contribute to noticing and the consolidation of a pattern-recognition unit, a unitized representation of a linguistic construction. I review the range of these in Ellis (2005).

2.3. Brain processes, complementary memory systems, and interface: Towards a cognitive science of usage-based acquisition

These are some of the psycholinguistic processes involved in second language acquisition. One can view them from many perspectives, focusing variously on learner, language, input, sociolinguistic context, cognitive representations and processes, or brain. I want to close by briefly considering related research in cognitive neuroscience into the ways the brain processes and represents language. There are important insights to be had about these psycholinguistic processes of language acquisition from current work in cognitive science (including the use of connectionist

models of learning and representation) and neuroscience (including cognitive neuro-psychology and brain imaging).

Humans have two separable but complementary memory systems (Squire and Kandel 1999). Explicit memory refers to situations where recall involves a conscious process of remembering a prior episodic experience; it is tapped by tasks like recall and recognition where the individual is consciously aware of the knowledge held. Explicit memories include all situations where we remember the context of learning, declarative learning (for example, of verbal rules like '<u>i</u> before *e* except after *c*'), one-trial learning that the Quinean for *rabbit* is *gavagai*, and our autobiographical record of specific episodes. Implicit memory is where there is facilitation of the processing of a stimulus as a function of a prior encounter with an identical or related stimulus but where the subject at no point has to consciously recall the prior event; it is tapped by tasks like perceptual priming or in procedural skills – you don't have to remember when you last juggled, or spelled 'receive,' to have improved as a result of the practice. Implicit and explicit memory are clearly dissociable: bilateral damage to the hippocampus and related limbic structures results in profound anterograde amnesia, a failure to consolidate new explicit memories, along with a temporally graded retrograde amnesia. Amnesic patients cannot learn new names or concepts or arbitrary paired-associates, they cannot remember any episode more than a few minutes after it has happened. But amnesic patients show normal implicit memory abilities: they learn new perceptual and motor skills, they show normal priming effects, they evidence normal classical conditioning.

Neural systems in the hippocampus and related limbic structures allow the consolidation of explicit memories. The hippocampus rapidly and automatically binds together disparate cortical representations into a unitary representation which can then be recalled by partial retrieval cues at a later time. Thus the hippocampal system confers a sense of unity to a particular experience (i.e., an episodic memory) – otherwise, these experiences would remain just a jumble of loosely connected features and facts (Squire 1992; Squire and Kandel 1999). By forming unitized memory representations, the hippocampal region performs the information-processing function of forming pattern-recognition units for new stimulus configurations, of consolidating new bindings; these are then adopted by other brain regions in the neocortex where they subsequently partake in implicit tuning (Gluck, Meeter, and Myers 2003; O'Reilly and Norman 2002).

The neocortical system underpins implicit learning and is the locus of the frequency effects. Whenever a stimulus is presented to our senses, say a

visually presented word, it produces a pattern of activity in the appropriate sensory system. This in turn gives rise to activity in the more central parts of the neocortical system, including those perhaps representing the visual appearance, the meaning, the sound of the word; and this in turn may give rise to an overt response, such as reading the word aloud. Any such event, any experience, produces a distributed pattern of activity in many parts of the cognitive system, and the information processing that we do occurs through the propagation of this activation through networks of neurons whose connection strengths have been tuned by prior experience. The neocortex underpins both the perception and the implicit memory of past experiences – we perceive the world through our memories of the world. Implicit memory is the result of small changes that occur in the synapses among the neurons that participate in this processing of the event. These small changes tend to facilitate the processing of the item if it is presented again at a later time. But the changes that are made on any given processing episode or event in the neocortex, as in the connectionist simulations of this implicit learning, are very subtle, and as such are insufficient to serve as the basis for forming adequate associative links between arbitrarily paired items that have never occurred together before, or new concepts, or new episodic records.

Recent brain imaging studies support this view of complementary memory systems in the cortex and hippocampus. Hippocampal structures in the medial temporal lobes are very active early in training, when subjects are learning about stimulus – stimulus regularities and evolving new stimulus representations, but less active later in training when other brain regions (including the striatum and basal ganglia) are using these representations to perform on the task (Poldrack et al. 2001). Other imaging studies also demonstrate hippocampal system activations during the encoding of memories, with these encoding activations indexing stimulus novelty in that they are greater for stimuli seen initially rather than repeatedly (Tulving et al. 1994; Stern et al. 1996). Repeated memories result in activation elsewhere: lesion and imaging studies provide convergent evidence that implicit memory as indexed by different forms of repetition priming reflect process-specific plasticity in separate neocortical regions, with visual, auditory, and tactual priming being mediated by changes in visual, auditory, and somatosensory neocortices respectively (Gabrieli 1998). Thus, repetition priming in a given domain appears to reflect experience-induced changes in the same neural networks that subserved initial perceptual processing in that domain, with these changes facilitating the subsequent reprocessing of the stimuli.

The two complementary memory systems, the hippocampal system and the neocortical sensori-motor areas, allow the co-existence of instances and abstractions, thus solving the two basic knowledge functions of an organism which needs to be able to acquire both specifics (Where did you park your car today? What is the L2 phrase for 'Two beers, please'?) and generalizations (What's the script for purchasing petrol at the garage? How does the L2 form a plural?), and they prevent the problem of catastrophic interference suffered by purely implicit connectionist mechanisms (McClelland 1998, 1995; O'Reilly and Norman 2002). The neocortex has a slow learning rate to gradually integrate new information with existing knowledge, using overlapping distributed representations to extract the general statistical structure of the environment. In contrast, the hippocampus learns rapidly, assigning distinctive sparse representations to input patterns to encode the episodic details of specific events while minimizing interference.

Further such research into these complementary learning and memory systems, as well as into the unique contributions of the attentional systems of the prefrontal cortex in binding features to form newly integrated object representations, and how neuronal synchrony is related to perceptual integration, buildup of coherent representations, attentional selection, and awareness (Cleeremans 2003; Ellis 2005, 2006) gives promise, I think, for understanding the cognitive neuroscience of the ways that linguistic constructions are first noticed and registered, and thence figured and tuned into the system (Ellis 2003, 2008). As the focus of GURT 2003 rightly affirmed, these issues lie at the heart of language acquisition and cognitive science both.

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Perspective shifts in ASL narratives: The problem of clause structure

Terry Janzen

1. Introduction[1]

When we are engaged in discourse, we commonly relate stories, dispense advice of what to do in some situation, describe our surroundings, give directions, and so on, and in doing so, conceptualize and present the situation from some vantage point. This vantage point may be clearly our own, but it does not have to be. We regularly see an event mentally from someone else's view. Kuno and Kaburaki (1977: 628) use the term empathy, which they describe as "the speaker's identification, *with varying degrees*…, with a person who participates in the event that he describes in a sentence." This suggests that speakers and signers have choices in how they might wish to portray an event, and as such make subjective perspective choices in their discourse. Langacker addresses subjectivity and its impact on grammatical structure in the following:

> The term perspective subsumes such factors as "orientation" and "vantage point." Many expressions invoke, not a "neutral" conception of the situation described (if such be possible), but rather one that embodies a particular viewing arrangement; the effects of that arrangement on the situation's appearance then constitute an inherent aspect of the expression's linguistic semantic value (Langacker 1991: 315).
>
> [One aspect of "vantage point" is] the degree of "subjectivity" or "objectivity" with which the conceptualizer construes a particular entity or situation (Langacker 1991: 316).

Important here is that if a particular point of view is presented in discourse, there are likely to be grammatical consequences. In the discussion below, I address the interaction of perspective and grammar in American Sign Language (ASL), which presents an illuminating case of overt perspective marking. ASL signers necessarily incorporate a three-dimensional spatial component to their articulation – a signed language is articulated in the space around the signer, and conceptualized space, which primarily takes

its cue from some real space event, is mapped onto the signer's articulation space. This mapping clearly reflects iconic structures, but as will be shown below, this iconic effect is dependent on conceptualized, subjective construals of situations rather than on more objective features of real space events.

Perspective and perspective shifts have been shown to be coded overtly in a number of signed languages, but the present discussion describes discourse in ASL that opts for a kind of perspective coding that has not been described until recently in Janzen (2002, 2004a, 2005). This research shows that rather than building and maintaining a static spatial layout, with entities placed around the space and the signer shifting location to align with them, the signer interacts with spatial relationships without shifting from her own stance. That is, the signer rotates her conceptual space so that spatial relationships, as seen through the eyes of each interacting referent, are oriented and reoriented to the signer's own more central location. This may have the effect of rotating the space 180 degrees if the two interacting referents in the discourse are positioned across from one another, which is often the case since interactants in a real space quite typically face one another. This spatial dimension does not pose a problem for verbal predicates in and of itself. The verb morphology (described below) aligns with the corresponding perspective the signer wishes to convey, although without a body shift toward spatial loci in a static space the interlocutors must keep track of which referent's perspective is the one currently being expressed by making inferences from available phonological, syntactic, semantic and pragmatic cues.

The problem outlined in the present discussion is not primarily with the signer's use of space, the perspectives chosen subjectively by the signer, or the basic shifts in perspective being conveyed, but instead concerns issues of clause structure. It has long been the goal of signed language researchers working on syntax (and to some extent morpho-syntax) to define elements of the clause, basic word orders, adjuncts, and the like, often going to great lengths to show that clause structure in a signed language obeys the same types of constraints that operate on clauses in spoken languages. In the narrative data in the present discussion, however, a number of utterances challenge a more traditional notion of clause structure that depends on a linearly ordered string of lexical items.

In the next section we look at the significance of perspective coding in spoken language, followed, in section 3, by an outline of some proposals for word order in ASL clauses. In 4, I describe two spatial orientations for perspective coding, that of using a "static" space versus a "mentally

rotated" space. We then look at some examples of signers' use of mentally rotated space and their impact on our ability to define the structure of the clause. Several complex examples are given in 6, and in section 7, I draw some preliminary conclusions.

2. Perspective coding in spoken languages

In spoken languages numerous coding mechanisms indicate, or contribute to, a particular perspective a speaker wishes to convey. Changes in perspectives may be reflected grammatically in, for example, definite versus indefinite articles, the use of nouns or pronouns, deictic expressions, or tense alternations (Canisius 2002). Active-passive alternations are commonly used to shift perspective between two referents in a transitive construction (Givón 1984; Shibatani 1985). In the active clause the perspective is that of the agent, but in the passive alternate, the agent is defocused and the situation is presented from the patient's perspective. An example showing this difference is given in (1).

(1) a. *Active:* The police arrested John.
b. *Passive:* John was arrested/got arrested.

Another grammatical domain indicating some particular perspective is that of relational terms, of which (2) is an example, taken from Talmy (1983: 252).

(2) a. The path was off to his left.
b. The bike is to the right of the silo.

In (2a) the referent, a person, has an inherent front and back, so that "his left" is necessarily on only one side, which we can visualize most clearly if we adopt the perspective on the space that the person must have. However, if we conceptualize this scene from an external view of the space, we cannot know where "his left" is unless we know what direction he is facing. Talmy (1983) points out that such relational terms as expressed in (2b) are only interpretable from the point of view of a third, non-codified referent, because in this case the silo has no inherent front or back, and therefore no left and right side. We can only know where the bike is if the sentence is interpreted as the bike being to the right of the silo *as we see it*. In other

words the bike must be on our right hand side from the position of the silo in our view.

An example of perspective expressed by lexical differences can be found in Japanese. Consider the contrast in (3) from Kuno and Kaburaki (1977: 630).

(3) a. *Taroo wa Hanako ni okane o yatta*. (Subject-centered)
T H to money gave
'Taroo gave money to Hanako.'

b. *Taroo wa Hanako ni okane o kureta*. (Nonsubject-centered)
T H to money gave
'Taroo gave money to Hanako.'

Both *yatta* and *kureta* mean 'gave' but with *yatta* the action is viewed from Taroo's perspective whereas *kureta* is used when the speaker empathizes with Hanako's perspective.

The above examples are but a few that show how perspective coding can be manipulated by language speakers and how speakers have access to various morphological and syntactic choices that contribute to the perspective on an event they wish to present. As will be seen in some detail below, a signed language such as ASL critically utilizes aspects of space to identify perspective and perspective shifts in discourse, but it is also clear that ASL signers have a range of perspective coding mechanisms to choose from. Before addressing some of these options, however, we look at some elements of clause structure in ASL.

3. Clause structure in ASL

Clause structure, and specifically the word order in a clause, has been debated from the earliest work on ASL syntax until the present. Fischer (1975) claims that there is evidence for a change in basic word order from SOV around the 1870s to SVO in present day ASL. Friedman (1976), however, finds that in discourse contexts SVO order is somewhat rare, and that several word order possibilities exist with some tendency for V to be clause final. Underlying SVO is claimed by Liddell (1980), with other word orders possible depending on which element is topicalized. Topicalization here means that some element is fronted and separated from the other clause elements by an intonation break (and topic marking). Wilbur (1997)

also claims underlying SVO order, although surface alternations exist, motivated by the sentence elements that are stressed, with the stressed element always appearing sentence-finally. Liddell (2003) reiterates his earlier claims of SVO order, suggesting that SVO order in ASL is quite strict, with topicalized subject or object NPs appearing leftward outside the clause boundary. In spite of these claims, studies such as Friedman (1976), Ingram (1978), McIntire (1982), and Janzen (1998) claim a preference for topic-comment structure in ASL, suggesting that clauses with clear SVO order cannot always be found. As well, complex verb and classifier constructions[2] are prevalent that are unaccompanied by freestanding nominals, but which are fully clausal in and of themselves. This is claimed for example in Armstrong, Stokoe and Wilcox (1995) for transitive verb complexes composed of nominal handshape and verbal movement elements. Many of the examples below illustrate that word order sequences are not definable nor significant in certain clauses, and that there are numerous unresolved issues concerning structural relationships among the parts.

4. Perspective in static and mentally rotated space

Shifts in perspective occur frequently in the discourse of ASL signers, most notably in narrative sequences when the signer relates a series of events that have taken place. In signed languages, when the signer shifts her perspective on a scene to a story character (which could be herself in the story or someone other than herself), the observer has the advantage of seeing the signer manipulate aspects of her articulation space to identify relative spatial relationships among the story characters. That is, the use of space helps to encode the differences in perspectives taken at various points in the narrative in addition to the lexical or grammatical cues that exist. For example, if a narrator wishes to portray an event from the viewpoint of one particular referent, she can realign her own stance in with the location of the character she has designated in her articulation space.

A body shift toward a locus in articulation space has long been understood as the definitive marker of a change in perspective in ASL. Recent accounts, however, have shown that not all perspective shifts are accompanied by such a physical shift in space (Janzen 2004a, 2005). In these studies, I describe instances of ASL narratives where a signer does not use loci around her articulation space to position referents, and subsequently does not use body shifting to align with their point of view.

These findings are summarized below, but a more detailed description of perspective taking and shift in ASL without the use of body shift can be found in Janzen (2005). The differential use of space is referred to as "static space" and "mentally rotated space." Perspective shifts in and of themselves are not necessarily a significant problem for clause structure but in at least some cases, as seen below, they contribute a level of complexity that makes defining the structure of the clause more problematic. Perspective shifts, and in particular those utilizing a mentally rotated space, co-occur in some of the most complex and most problematic clauses, described in section 6 below.

4.1. Treating space as static

Most treatments of perspective taking and the signer's use of space describe the signer as positioning an entity at some locus in her articulation space, and then using a physical body shift toward that locus to enact that referent's viewpoint on the scene laid out in the space in front of the signer as a whole. This type of body shift has been noted in ASL by, for example, Friedman (1975), Padden (1986), Aarons, Bahan, Kegl and Neidle (1994), and Lillo-Martin (1995), and as well in other signed languages such as Irish Sign Language (Ó Baoill and Matthews 2000), Danish Sign Language (Engberg-Pedersen 1993, 1995), British Sign Language (Morgan 1999), and French Sign Language (Sallandre and Cuxac 2002), to name a few. When the signer employs such body shift repositioning to empathize with a story character's viewpoint, the spatial scene being viewed is seen as "static" in that the positioned entities in the conceptualized space remain in place while the signer moves from locus to locus around the periphery of the space, viewing the scene from these designated loci.

To illustrate, Lillo-Martin (1995) provides an example of what she terms a "Point of View (POV) Predicate," shown in (4).[3]

(4) ‹ $_{a}$shift›
$_{a}$MOM $_{a}$POV $_{1}$PRONOUN BUSY
'Mom (from Mom's point of view), I'm busy.'
'Mom's like, I'm busy!' (Lillo-Martin 1995: 162)

Lillo-Martin's example is instructive on two accounts. First, it is a good illustration of the sequence of locating a referent at some point in space, here arbitrarily labelled with the subscript "a," and then using a body shift

to represent a 3s point of view. In this example, the signer designates locus "a" as the reference point for 'mom,' with a body shift toward "a" to present the mom's utterance, presumably directed at some other story character(s) who just as likely may be represented at other loci in the articulation space. Once again, in an instance such as this the spatial arrangement of entities remains absolute or "static" – entities stay positioned in static loci, with the signer moving to each locus as the discourse dictates. Such loci appear to be situated around the periphery of the conceptualized space, with interactions in the narrated event taking place *between* spatially located referents.

The second relevant feature of Lillo-Martin's example is that she considers the POV shift itself to function in the role of verb in this clause. However, the action of the POV shift does not belong to any referent in the clause whatsoever, but is a discourse element of the *narrator's* choosing. Lillo-Martin's motivation for this analysis might presumably be that something must occupy a V node, which leads to the problem of how a well-formed clause should be structured in ASL. What constitutes the verbal constituent of the clause or is this non-essential? As will be seen below, numerous elements can compound the problem of what constitutes a well-formed clause and how the elements that are present in grammatically well-formed clauses are understood structurally.

4.2. Mentally rotated space

In the studies described in Janzen (2002, 2004a, 2005) I discuss narrative sequences in which the signer does not use body shifts to portray the perspectives of story characters. While space does not permit a full discussion of the relevant data, the main features of this discourse strategy are illustrated in the examples below. In instances such as these, the signer does not move to loci around the periphery of a spatially mapped scene, but shifts or "rotates" the mentally conceived scene so that the vantage points of referents located around the space come into line with the more central viewpoint of the signer herself. Thus, the signer's conceptualized space is not a static space, but one that can be mentally "rotated." In the following example, the signer is recounting an incident that took place as she and some of her family were driving along a highway. They encounter a police officer pulling everyone off the road, but don't know why. The officer is positioned ahead on the road as they approach. In the narrative, the signer indicates this by eye gaze – her eye gaze is directed ahead as if she were

looking down the road as she was driving along; in fact the signer positions this imaginary point just to the left of her addressee.[4]

(5)[5]

a. *eye gaze* 2----------

facial gesture _____t
rh POLICE MOVE.OVER+ TRUE HURRY$_a$++,

lh CL:4(*line of cars*)

b. *eye gaze* left----- 2-------- left/down---------- 2------

facial gesture neg nod _____t
rh NONE *pause* DISCUSS$_a$ EXPLAIN$_b$ WHAT'S.UP NONE

lh EXPLAIN$_b$ *hold*---------)
'The police motioned for us to move over, quickly, (but)
no discussing why, no explaining about why.'

The utterance immediately preceding (5) is about the signer's mother, who is driving the car they are in, and has the meaning 'my mother pulled off to the side of the road, wondering what was going on' (this utterance is not shown above). In (5) the utterance indicates a shift to the police officer's perspective, although this does not represent the first mention of the officer in the narrative. As the signer's stance in figure 1 shows, however, there is no body shift away from the signer's own position and in fact, she has not overtly located the police officer at any locus in her articulation space. The only indication the signer has given as to where the officer is located is by eye gaze, which has been directed distally just to the left of the addressee.

Figure 1. Perspective of the police officer waving traffic off the road.

Employing a mentally rotated space to portray others' perspectives is problematic in certain respects. Note that the interchange the narrator is relating is between the signer's own mother and a police officer. In the narrative from which (5) is taken, the signer does not designate loci in her space with which to associate the two referents, say, one in her leftward space and one rightward. Instead she initially views the scene as if from her mother's view, or more correctly, she views the scene *as if she were her mother*, so that her mother's vantage point coincides with her own centrally facing viewpoint. Problematic in this viewpoint and use of space is that when the signer shifts reference, how does her addressee know that a new perspective is being taken? In effect, rather than keeping the space static and moving to the vantage point of a spatially located referent, the signer mentally rotates the conceptualized scene so that the entire space re-aligns with her own view. In (5) this means that when the signer enacts the actions of the police officer, she has rotated the conceptualized space 180° so that now her view on the scene coincides with that of the officer standing on the highway looking toward the on-coming traffic, which would include the signer's own car with her mother driving.

One issue that arises for this and other instances described in Janzen (2004a, 2005) is that when a mentally conceptualized scene is rotated, everything in the scene rotates as well, meaning that another entity that might be referred to spatially will be in one position relative to one perspective, but in a different position relative to a second perspective. This affects numerous aspects of the signer's reference to space, from where pronouns are directed to locational features of agreement verbs (or

'indicating verbs' in Liddell's 2000, 2003 analysis). This in fact is one of the indicators that the space has been rotated: in the utterance preceding (5) the signer has indicated that her mother has steered the car onto the right-hand shoulder of the highway with a rightward movement, but in (5), from the police officer's perspective, that would be to his *left*, and the signer articulates MOVE.OVER toward her leftward space.

A second issue concerns how a referent might be identified. In a static space, where it is likely that two referents have been positioned at distinct loci, the signer can use a simple body shift toward either of these loci with the effect that the referent associated with that space will be evoked and re-evoked because it has become topical. That is, reference to the space itself by pointing, eye gaze, body shifting, etc., equates to reference to the entity positioned there previously in the discourse (see Winston 1995). Any of these markers assume the topicality of the referent, but they also represent an overt reference in the grammar, either morphologically or syntactically. When a referent's actions are presented via a mentally rotated space, the same types of overt grammatical features do not occur. Two alternative referencing mechanisms are available in this case, however. In one, the signer assumes that the referent is sufficiently topical such that an overt reference is unnecessary. In Janzen (2004b) I propose a topicality hierarchy that positions reference shifting with no overt marking such as a body shift as higher on the hierarchy than reference shifting with an overt body shift because the overt marker is more explicit coding. A second alternative, most likely chosen when the signer cannot assume the identifiability of a referent is to name the referent with a full NP. This is what happens in (5). Note that using a pronominal point in space is not an option: such an index would be directed toward the distal location for the police officer, but from the officer's perspective, the exact same locus is occupied by the signer and family in the their car, which would make the pronoun ambiguous, much like two non-co-referential instances of *she* occurring in an English speaker's speech without disambiguating.

It might be argued that perspective employing a mentally rotated space is a discourse effect with no grammatical-level features, but this cannot be the case for a number of reasons. First, there are constraints on the use of pronouns as shown in the discussion above, and there are phonological effects regarding the feature of location in the verb form, for example movement to a rightward location versus movement to a leftward location. Second, this phonological effect has spatial co-referencing implications. In the signer's overall space, both the rightward and leftward loci co-refer to the same entity. Third, as seen in section 5 below, taking the perspective of

a patient rather than an agent in an otherwise transitive construction contributes to passivization.

5. Perspective and agent/patient marking

Janzen, O'Dea and Shaffer (2000, 2001) demonstrate that two alternate arrangements of verbal morphology give either an active or passive reading to the situation. When the active alternate is signed, the situation is viewed from the agent's vantage point, the hand configuration and movement represent the action of the agent, and typically the movement path of the verb is in the direction of agent to patient. The signer is aligned with the agent, either by shifting in space toward a referent locus in a static space or in a mentally rotated space, as described above. In an active clause the signer's body, hand, and movement all align with the agent, and usually the signer looks toward the space associated with the patient.

Conversely, in a passivized verbal construction, the signer takes the perspective of the patient. This alternate is characterized by body partitioning (Dudis 2004) in that the path movement of the verb still moves in the direction of agent to patient, with the hand configuration representing the agent's action. But because the signer aligns with the patient or recipient of the action, the signer's body represents the body of the patient, the movement is toward the signer, and the signer looks in the direction of the agent. In the examples from Janzen et al., the agent may never be specified even though a spatial point is chosen, typically somewhat distally from the signer, which coincides with Shibatani's (1985) general definition of the passive: the agent of an otherwise transitive verb is demoted (and may not appear at all), and the situation is viewed from the perspective of the patient. Structurally, a passive may be coded by a rearrangement in the syntax of the sentence as in English, or a passivizing element may appear in the verbal complex as in Ute (Givón 1990) without regard to the syntactic arrangement of nominals in the clause. Janzen et al. claim that the distinct combination of morphological features in the ASL verbal complex when a patient perspective is coded qualifies it as a passivized clause. The appearance and positioning of nominal elements external to the verb do not affect the passivized reading. The example in (6) illustrates these points.[6]

(6) _____t
FATHER SEEM EMBARRASS HAVE DEAF SON *gesture*

MEAN $_{a}$(*multiple*)STARE.AT$_{1}$.POV$_{1}$
'His father seemed embarrassed about having a deaf son. It meant that he would be looked down upon.'

In (6) the first clause is about the father's experience and is presented from the father's vantage point in that the signer enacts the father experiencing embarrassment with his own face and body. In the second clause, however, the action shifts to someone other than the father's, but the perspective remains with the father. The verb complex $_{a}$(*multiple*)STARE.AT$_{1}$.POV$_{1}$ indicates that a number of (unnamed) people located out in space in front of the signer would look at the father somewhat disparagingly, thus the subscripts "a" for the beginning of the path movement and "1" (for 1s) for the end of the movement.

This is a clause about what the father is experiencing, with the action happening *by* someone else *to* him. He is "in focus," while the people staring are downgraded: they occupy a region of space but are not identified in the clause (presumably because their identity is unimportant). The significance of this example is that it shows that agency and perspective are not one in the same and that both are identifiable in the structure of the complex. A better transcription of this verb might rather be:

(7) $_{a}$(*multiple*)**AGT**.STARE.AT$_{1}$.**PAT.POV**$_{1}$

If then perspective is distinguishable in the structure of verb, and may or may not be associated with the agent of action, we might consider how it co-occurs in more complex utterances, and what this contributes to how we understand the utterance as a whole. If it contributes a kind of focus in the utterance, as is argued here, this impacts what we must consider the structure of the utterance to be. These points are explored in section 6.

6. More complex instances of perspective coding in clause structure

In what follows I examine three ASL utterances that present various problems for a structural analysis. In each of the cases, the signer tells of some action and simultaneously encodes a perspective on the scene from an observer not directly involved in the action itself. Each of these utterances

is an example of simultaneity and body partitioning. In Miller's (1994) description of simultaneous constructions in Langue des Signes Québécoise (LSQ) and in Leeson and Saeed's (2004) discussion of simultaneity in Irish Sign Language (ISL), the focus is on the ability of the signer to represent two different lexical or morphological items on each of the two hands simultaneously. This type of simultaneity occurs in the examples discussed below, but the type of simultaneity in which I am most interested distinguishes what is articulated with the hands and what is contributed by the signer's face, which is apparent in many of the examples discussed in Dudis's (2004) work on body partitioning. In each of the three examples below, the signer constructs a sequence in which someone is undertaking some action while simultaneously a viewer external to the action is portrayed by the signer's face and body features.

6.1. Emergency room: A con walks by

In (8) the signer is describing an incident that took place while he was in a hospital emergency room waiting to be seen by a doctor. While waiting there two police officers bring in someone in hand- and ankle-cuffs, and they make their way across the room.

(8)

eye gaze	left → → → → → → → → → right
head/face	slight bouncing ----------)

POV:1s.CL:F(*2h - 'eyes'*).ROTATE(l→r)
'I watched an entity move along a path in front of me from left to right (I watched the con walk past in front of me).'

Here the signer uses the classifier form of [F] handshapes, typically meaning small round objects (in this case, two of them), to indicate someone's eyes and the direction of their eye gaze. POV:1s means that the verbal action in the classifier construction is taking place from a first person perspective. The leftward to rightward rotation of the sign, articulated by the simultaneous rotation of the two wrists, indicates that the person's eyes followed a path in that direction; the signer's eye gaze follows this path as well. There is no overt subject NP. This classifier construction and 1s perspective is shown in figure 2.

Figure 2. The [F] classifier for 'eyes watching'

Prior to the utterance in (8) the signer has told us that the con and police have entered the room, so even though this is not stated in the clause in (8) we know who it is he is watching. In addition to the above, the signer includes one further aspect to his articulation of the clause, that is, his head simultaneously bounces slightly as he turns from left to right, which indicates that the entity (the con) was progressing fairly slowly across the room.

The simultaneous aspect to this utterance accomplishes what in English would require two clauses – one capturing the action of watching someone, and the second the action of walking. The movement of the con is coded minimally – by the signer's eye gaze, palm orientation of the classifier handshape directed toward a particular space, and the temporal element (head bounce) regarding the pace of the con's movement – but this does signal this referent in the construction. The focus, however, is rather obviously on the signer as watcher: this is primarily a clause about what the signer is experiencing. This example thus demonstrates that the articulation system of ASL allows the signer to encode information regarding two distinct referents and their actions simultaneously within a single clause boundary. For obvious reasons the clause structure is not a simple thing to sort out and further, the question of word order in such a clause appears not to be applicable. This, however, is still a relatively simple case compared to those discussed next.

6.2. The van comes toward us

In the narrative that continues on from (5) above, the signer tells her addressee that the source of the problem is that down the road a van is being chased by some police cars, headed their way. In (9) this action takes place.

(9)

eye gaze	a (distal) ----------
facial gesture	eyes wide ----------)
lh	CL:3($_a$*vehicle moves* $_a$*distal→medial*) 'We watched, amazed, as the van came toward us.'

In some respects (9) appears to be simple, straightforward clause which we might translate as 'the van came toward us'. It is clear from figure 3, however, which shows the beginning of the path movement of the vehicle classifier form, that the action of the van is not the only element being indicated by the signer. The signer's eye gaze distinctly shows that a viewer is in the scene too. In fact, the classifier hand configuration located in a distal space can only be fully understood because of its relative spatial relation with the signer's body: the van is distant in terms of *her* position, as Talmy (1983) suggests is the case. The facial gesture and relative spatial positioning in (9) tell us that a clearly identifiable perspective on the scene is encoded in the construction, and once again we are faced with the problem of sorting out the structure of the clause.

Figure 3. The vehicle classifier in distal space

In terms of the overall discourse – the purpose of the narrative – there appear to be two themes. One is the obvious event concerning the van and the police, but secondly, and perhaps more importantly, this is a story of the signer's own experience as a young girl, of her own involvement with the action taking place out on the highway. Once again, the properties of articulation in ASL allow for multiple, simultaneously produced items, presumably within the limits of cognitive load. So we might then ask whether this utterance is primarily about the van, about the signer, or equally about both, and further, whether the structure should be represented as two distinct constructions (and therefore two clauses?) or as one multifaceted conceptualization of a single event. If a single event, then we are more apt to view the structure as a single complex construction, even though it includes two separate nominals and two distinct actions.

The next, and final, example is more complex yet because the perspective appears to shift from one viewer to another while the verbal action is being articulated.

6.3. The van goes by: My view or the police officers' view?

Eventually the van goes by. Classifier constructions in ASL are such that their articulation can often be extended temporally to somewhat iconically represent an event that is also extended in time. For a whole entity classifier moving along a complex path, the movement can also iconically reflect the perceived movement along this path, thus both the nominal handshape and

the movement itself are morphemic (Emmorey 2002). One example in the narrative about the van, given in (10), does exactly this. Space does not permit a detailed description or analysis of this utterance, but the point emphasized here is that the perspective on the action appears to change from the signer herself to that of the police during the temporally extended articulation of the action, which adds yet another dimension of complexity, and presents a further problem for describing the structure of the clause. In the interest of space, only (10b) is fully transcribed, because it is here that the perspective shift of interest takes place. The utterances in (10a and c) are given as translations only.

(10)

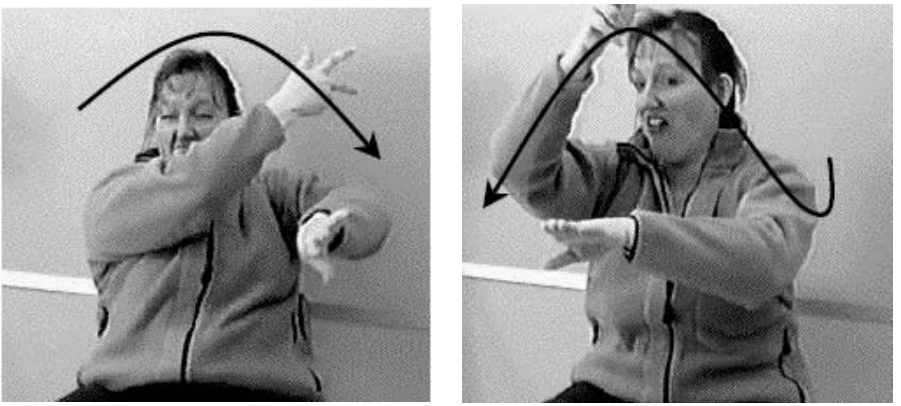
a. 'We ducked down in our seats.'

	POV 1	POV 2
b. *eye gaze*	a (distal; follows rh) ----------	2----------
facial gesture	eyes narrowed ----------)	
rh	CL:3(*vehicle:* $_{a}$*distal→lf rear→centre front→rt down*)	
lh	CL:B(*flat surface: rh contacts repeatedly along path*)	

'The van came careening by and into the ditch, finally coming to a stop…'

c. '…in a cloud of dust. The police surrounded the van, guns drawn.'

While the perspectives given by the signer may not be obvious from the transcription of (10b), figure 4 makes this somewhat transparent.



(a) (b)

Figure 4. The van moving past the signer's car (a), and the van coming to rest in front of the police (b). In the signer's conceptualization of the actual event space, these police officers were positioned some distance behind the signer's car.

Here, the spatial position of the vehicle path is signed relative to the view portrayed by the narrator, and this is the primary cue that the perspective shifts midway through the articulation of the path. We see first that the van moves past the signer's car (figure 4a) at some velocity. During this portion of the action the perspective (POV 1) is that of the signer in her car. The narrator then repositions her hands, still articulating the vehicle classifier on the right hand and the surface classifier on the left, back to a more central position in front of her (figure 4b). We can make the assumption logically that van did not turn around and careen back to such a position, but continued on past and into the ditch somewhat behind the signer's car. This is born out in a later utterance (not shown here) where the narrator says she looked back at the van and police behind her just before her mother drove away. Whatever prompts the repositioning, it is evident that the view on the scene, that is, the van coming to rest in the ditch, is portrayed from the perspective of the police (POV 2), because the narrator says they draw their guns on the driver of the van (10c), and this is directed toward the space directly in front of her. What this signals, then, is that the narrator articulates a classifier form to indicate the movement of the van, but as the action progresses, the perspective on the scene switches from one vantage point to another. For both of these viewers, their perspective is an integral part of the construction; again, the clause is not just about the van's action,

it is about the interaction of the viewers with the action. Thus the same difficulty with defining the structure of the clause is apparent, although in (10), the problem is exacerbated by the midstream switch in perspective. A final note here is that this complex perspective sequence is not accompanied by any associations between referents and points in space, nor body shifts in the space. To accomplish the sequence and resulting structure, we must conclude that the narrator has "flipped" the conceptualized space around from the view from the signer's car to the police in pursuit of the van mid-clause.

7. Conclusion

In each of these examples, it is clear that both an action and a perspective on the action are being coded overtly by the signer. Thus the structure of the clause, whether considered primarily as a complex morphological or syntactic construction, is not easily definable. The purpose of the present discussion has not been to resolve these structural issues, but to introduce some aspects of the complexity that overt perspective marking bring to the structure. In many cases, questions of word order appear moot.

One of the most important questions to ask has to do with the structural relationship between what is articulated on the face (and body) and what is articulated with the hands. Grammatical treatments of facial aspects have generally treated the facial information as entirely subordinate – or supportive – to the main clausal information articulated on the hands, which would include sentence-type information (e.g., topic, wh-question, yes/no-question, and relative clause marking), adjectival and adverbial morphemes, and so on. But it is clear that the signer's face and body are significantly present in the clauses presented here. We might even say that the information coded on the face and body is primary in terms of what the signer is attempting to convey. Wilcox (2004) discusses an autonomy-dependency relationship between the hands and face in signed language, suggesting that because information generally conveyed by facial marking is subordinate to what is conveyed on the hands, the relationship is decidedly lopsided – the information coded by the hands is autonomous, whereas facially-conveyed information is by and large dependent. In the cases discussed in the present paper, however, this is not quite so clear. Of course the referent portrayed by the signer's facial gestures must be viewing *something*, and might be considered "dependent" in this regard, but because this referent is not the same one doing the action articulated on

the hands, the facial coding represents someone entirely autonomous to the referent/actions coded by the hands.

These facts, however, also raise the question of subordination in sentence structure, although at this point the question must remain unresolved. Perhaps in many cases, however, the parallel between the ASL construction and the most natural English translation is instructive. For example, the first part of (10b) might be best translated as 'we watched as the van went careening past us,' which puts 'we watched X' as the matrix clause, and the clause about the van's actions as structurally subordinate to it. This may in fact well reflect the conceptualization of the co-occurrence of the two events, and yet puts the experience of the watcher in a primary position, especially given the seemingly overriding subjective nature of much of language use (Scheibman 2002).

This study also raises questions regarding the status of information in terms of bound versus free morphology and simultaneity. If it were the case that all of the simultaneous information concerned a single referent and her actions (and "action" here might take into account a second referent as theme or undergoer – the object of the verb, in structural terms), we might more easily be inclined to consider the more dependent facial markers as bound morphology (for example, manner of movement). But with obvious body partitioning, we encounter the possibility of two distinct referents and their equally distinct actions being encoded. When this is the case, we might be hesitant to suggest that the resulting complex is all one morphological structure. The structural implications of simultaneity of this type have yet to be fully explored, but in light of the examples given above, this would be a worthy enterprise.

Notes

1. In completing this chapter, I owe much to Barbara Shaffer and Sherman Wilcox for their helpful comments, along with participants at GURT 2003. As always, any errors remain my own.
2. The status of classifiers as a category in ASL and other signed languages has recently been the subject of much debate (Schembri 2003), but these issues are well beyond the scope of this chapter. Here I defer to the term "classifier" and acknowledge that alternate analyses are possible.
3. In Lillo-Martin's transcription, ‹ $_{a}$shift› appears above the sequence portrayed as the utterance of the referent whose point of view the signer is taking. In other words, it is this sequence that is signed while the signer

maintains the body shift near locus "a." $_1$PRONOUN means a 1s pronoun is used.

4. Examples in this study are from data collected as part of a larger study on ASL discourse at the University of Manitoba. Signers are members of the Winnipeg Deaf community who have ASL as their first language and who learned it at an early age. Examples are taken from utterances in spontaneous narrative sequences.
5. Upper case word glosses indicate ASL signs. Words separated by a period (e.g., MOVE.OVER) indicate that more than one English word is used to denote a single ASL sign. Plus signs (++) denote a repeated movement. Overlines indicate that a facial gesture is maintained throughout the phrase below it, with "t" representing topic marking (_____t). Subscript letters represent spatial locations associated with entities positioned in the space around the signer, and are labelled "a", "b", etc., arbitrarily. CL:X(*xxx*) represents classifier handshapes, with a semantic descriptor in parentheses. A leftward space or movement is designated *lf*, rightward space or movement as *rt*. In the eye gaze line, the signer looking directly at the addressee is shown as "2" (for second person), otherwise the direction of the eye gaze is given. Dashed lines indicate that the particular eye gaze is maintained. The labels *rh* and *lh* refer to articulation on the right or left hand, *bh* means that an item is articulated with both hands whereas only a single hand would normally be expected or sufficient. PRO.1 is a first-person singular (1s) pronoun. PRO.3 is a 3s pronoun. AGT is "agent," PAT is "patient," and POV is "point of view" or "perspective." The translation line is an English approximate that does not necessarily represent equivalent grammatical features or lexical categories to those found in ASL.
6. From the videotape *When the Mind Hears* (A synopsis in ASL), "My Family", © Harlan Lane. Transcription and translation from Janzen et al. (2000: 297).

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Making dative a case for semantic analysis: Differences in use between native and non-native speakers of German

Olga Liamkina

1. Introduction

This paper explores the possibilities of applying Cognitive Linguistics theories to analysis of second language (L2) learner data in order to develop cognitively-based pedagogical approaches to teaching grammatical concepts in general and a concept of German Dative case in particular. The study presented here takes a first step in this larger research agenda by establishing the differences between native and non-native speaker production patterns involving the use of Dative case.

Practitioners teaching German to speakers of English agree – and there is a large body of research validating their perceptions (Diehl 1994; Dietrich 1983; Magnusson 1997; Montrul 1998; Rubinstein 1995) – that using cases correctly from the accuracy standpoint, as well as using them appropriately from the semantic and discourse perspective, remains a formidable challenge even for very advanced learners. This is true, even though the case system is one of the first grammatical notions introduced in formal language instruction. In traditional instructional grammars (e.g., Dodd et al. 2003; Durrell, Kohl, and Loftus 2002; Fehringer 2002; Moeller and Liedloff 1995; Rankin and Wells 2001), explanations of the German case system are usually given within a structural approach, highlighting formal syntagmatic properties of a handful of verbs rather than illuminating meaning-motivated paradigmatic relationships within the entire case system. Thus, beyond introduction of formal markers of Dative and a short generic explanation of its most basic usage to designate a recipient of an object in a transfer, it is customary to provide alphabetically arranged lists of verbs or adjectives and their translations, with none or little explanations of the reasons for using Dative with them.[1] These simplistic treatments perpetrate a misconception that German grammatical system (or, for that matter, a system of any foreign language) is an aggregation of oddities or exceptions with no way of gaining insight into correct usage of

grammatical phenomena beyond memorization. In this paper I will argue that Cognitive Linguistics provides a particularly advantageous framework for developing instructional explanations that counterbalance this perception and help learners discover a complex and coherent nature of the Dative case.

2. Semantic structure of the German Dative and L2 learning challenges

One of the fundamental premises of Cognitive Linguists is the assumption that grammatical categories are not arbitrary but motivated by meaning. Langacker (1987) claimed that grammatical categories are themselves symbolic in nature and that grammatical constructions structure and construe situations in a particular way for linguistic purposes. More specifically, recent contributions in this line of inquiry have challenged the assumption, prevalent in the traditional formalist linguistic paradigms, that morphological cases are mere grammatical markers without inner semantic content; instead cases are seen as one of the primary tools for construal of non-linguistic material in a way that varies from language to language (Janda 1988; Nikiforidou 1991; Serra-Borneto 1997; Zubin 1977, 1979). One of the pioneering cognitive linguistic studies in the area of case was done by Michael Smith (1987), who, in large part based on Langacker's Cognitive Grammar (1987), established a semantic network for the range of meanings regularly associated with the German Dative case. Although many researchers have since then investigated the Dative in other languages (Dabrowska 1997, Polish; Janda 1993, Czech; Rudzka-Ostyn 1996, Polish) as well as many aspects of the German Dative (Blume 1998; Dewell 2000; Lamiroy and Delbecque 1998; Leys 1992), Smith's work remains, to the best of my knowledge, the fullest account of the German Dative case system based on the Cognitive Linguistics theory. Therefore the empirical investigation reported in this paper is based largely on his analysis.

In German, there are two syntactic constructions in which case is used: prepositional constructions and clausal constructions. In the study reported in this paper, I concentrated on the latter. Space limitations preclude me from presenting the theoretical framework and methodology used by Smith to identify participant roles coded by the German Dative case (for the full account, the reader is referred to his 1987 unpublished doctoral dissertation as well as to two papers published in 1985 and 1993), but a few remarks are in order.

According to Smith, participant roles associated with the Dative form a semantic network, clustered around the Experiencer prototype. Extensions are derived from the prototypical role through the notion of "bilateral involvement," which means that the Dative participants are conceived as participating in a situation simultaneously in a patient-like (i.e., affected by the clausal action) and in an agent-like (i.e., capable of independent action) fashion. Smith identifies six such extensions (Possessor, Indirect Object, Mover, Entity of Higher Status, Secondary Actor, and Interested Party) and does not postulate any hierarchical relationships between them. Having compiled the lists of the verbal and adjectival predicates that Smith used to illustrate the seven roles, I came to the conclusion that, if used for instructional purposes, not all of the names assigned to them by Smith would be readily apparent to the learners and hence would not "anchor" the roles in their memory. I had to consult other analyses of Dative in German and other languages (Dabrowska 1997; Janda 1993; Rudzka-Ostyn 1996; Wegener 1985) to see how other authors term groups of verbal and adjectival predicates used with Dative complements that are essentially similar to those delineated by Smith. I felt that the term "Recipient" is a more apt one at capturing the Dative role in a spatial scene of transferring a concrete object than the term "Indirect Object" is. Similarly, a widely used in the literature term "Beneficiary" is a more fortunate one than "Interested Party": although it seemingly narrows down the category, it also captures the prototype for this category more readily and thus would make it easier for the learners to understand what lies at the heart of this role. Appendix contains examples taken from Smith (1987) of all participant roles used for data coding in the present study.

Before turning to the analysis of the empirical data, let us consider why the German Dative case is a particularly fitting candidate for instructional treatments grounded in Cognitive Linguistics. There are three important challenges for the language learner in using cases in clausal environments: first, in contrast to prepositional constructions, the manifestation of case in the clausal realm is unmarked and perceptually less salient, and presumably harder for the learner to notice in the input and control in production (VanPatten 1990); in other words, there is no noticeable marker like a preposition to alert the learner that a certain case needs to be assigned to a noun.

Secondly, the use of a certain case is determined by the participant roles, assignment of which depends on a particular construal of the situation and is, therefore, not a categorical decision, but rather a function of perspective-taking and other discoursal factors. It means that the learner has to know

not only what kinds of role relationships between participants in a situation can potentially be expressed by each case in a case system, but also what influences the decision to express or not to express them linguistically in each particular context. For example, there are a number of instances in German where a "Dative object" is syntactically expendable, but is absolutely necessary from semantic and discourse standpoint. Because of this syntactic optionality, learners often leave Dative objects out in places where a German native speaker would not.

Thirdly, German clausal Dative signifies a variety of participant roles that also are present in English (such as Beneficiary, Experiencer, or Recipient). What poses yet another problem for native English speakers learning German is the fact that in English these concepts are coded with the help of lexical items – such as prepositional phrases and possessive pronouns – or word order, whereas in German they are usually grammaticalized into Dative case markings. For example, to code a Recipient role (in this case, Recipient of a verbal message), English often uses a *to*-construction, while German normally does it using clausal Dative case:

(1) *Quickly, I described the suspect* ***to the police officer****.*
Schnell habe ich ***dem Polizisten*** *den Verdächtigen beschrieben.*
Quickly have I the police officer:DAT the suspect described

But the learners often produce sentences like (2), which are completely comprehensible to their interlocutors, but don't sound native-like.

(2) *Schnell habe ich den Verdächtigen* ***zu dem Polizisten*** *beschrieben.*
Quickly have I the suspect to the police officer described

Under certain circumstances German native speakers may use prepositional constructions with *zu* ('to') or *für* ('for') to express Recipient or Beneficiary roles; however, meanings of Dative constructions and meanings of such alternative means will slightly vary, and the choice of one construction over another will depend on quite subtle contextual factors. Therefore, it is not difficult to see that the second and the third factors described above present a particular challenge for L2 instruction – since the choice of lexico-grammatical means is more often not a question of sentence-level grammaticality, but a question of subtle discourse requirements and sounding more native-like or less native-like, more or less precise, and more or less appropriate (cf. Achard 2004: 185). It thus may be

very difficult for an instructor to teach all the contextual and discourse variables that affect the choice of either clausal or prepositional Dative construction. As Carroll and her colleagues point out, in order to sound native-like, learners need to acquire grammaticalized means for taking a particular perspective consistent with that of native speakers (Carroll et al. 2000). In terms of the acquisition of a case system, one of the steps towards sounding native-like is to acquire a full range of senses and participant roles associated with a case.

Cognitive Linguistics, among other functional approaches to language and language learning, emphasizes cultural and situational embeddedness of language and its grounding in human neurobiology. It views teaching grammatical phenomena as teaching how to create contextualized meanings with linguistic resources within a discursive (rather than sentence-level) environment. Presenting grammar to learners as an inventory of symbolic resources at speaker's disposal provides them with tools for making situationally and linguistically appropriate choices – something that is particularly inherent in advanced language learning and something that traditional form-based instruction does not equip learners to do.

Before attempting to apply insights of Cognitive Linguistics to the task of teaching learners the semantic structure of the Dative case, it would be useful to conduct a learner needs analysis, i.e., to compare the range of participant roles that German native speakers associate with the Dative case and the range of roles that learners of German express with the Dative. The present study aimed at precisely that by comparing native speaker (NS) performance with that of English L1 advanced learners of German.[2]

3. Methodology

There are two groups of subjects in this study, each consisting of seven participants: college-age and college-educated NSs of German and English speaking advanced learners of German. German learners were recruited from the first semester course at the advanced level (third year) of the German department at a large university, into which they either had placed after taking a placement test or completing the department's intermediate level course. Since the study was conducted at the end of the semester, it means that they had the equivalent of five semesters of college non-intensive German instruction.

All participants were given seven humorous picture stories that depict adventures of a father and a son and come from a German picture story

book popular with elementary school children as well as adults (e. o. plauen 1996). These seven stories were chosen on the basis of a high probability of using Dative non-prepositional objects due to the participant roles that need to be linguistically expressed in retelling the stories. Participants were asked to tell each story based on the pictures. Their narratives were audio-taped and transcribed; all instances of clausal Datives used by the native speakers and all non-native speaker (NNS) attempts at using clausal Datives rather than a prepositional phrase were coded according to the network of Dative roles adapted from Smith.

4. Analysis and discussion

First, let me present a brief quantitative analysis to provide an overview of the data (see tables 1 and 2).

Comparing numbers and ratios of clausal Datives per T-Unit between NSs and NNSs, we can see that NNSs use Dative case far less often than NSs do. NSs used on average five times as many clausal Dative constructions per T-Unit as NNSs; this difference is statistically significant (see table 3). These results could be interpreted in at least two ways: either NNSs employ other linguistic means for coding the roles usually associated with the Dative or they avoid explicit coding of these roles altogether. To provide evidence for these hypotheses, the differences between the uses of the Dative by NSs and NNSs need to be examined qualitatively. Here I will elaborate only on three of them, namely the difference in expressing the roles of 1) Possessor, 2) Recipient, and 3) Beneficiary.

Table 1. Analysis of 7 stories together for each NS

	Number of words	Number of T-Units	MLU	s.d.	Number of clausal Dat.	Number of clausal Dat. per T-Unit
NS1	1444	95	15.20	11.06	18	0.19
NS2	925	76	12.17	7.55	14	0.18
NS3	875	52	16.83	9.14	10	0.19
NS4	1279	87	14.70	10.03	36	0.41
NS5	1242	114	10.90	5.65	18	0.16
NS6	1497	112	13.37	7.46	25	0.22
NS7	1787	69	25.90	17.51	27	0.39
Means	1292.71	86.43	15.58	9.77	21.14	0.25

Table 2. Analysis of 7 stories together for each NNS

	Number of words	Number of T-Units	MLU	s.d.	Number of clausal Dat. (attempts)	Number of clausal Dat. per T-Unit
NNS1	657	87	7.55	3.38	10	0.11
NNS2	601	68	8.84	3.65	2	0.03
NNS3	727	96	7.57	3.91	4	0.04
NNS4	671	84	7.99	3.58	1	0.01
NNS5	595	79	7.53	3.19	4	0.05
NNS6	925	93	9.95	4.84	5	0.05
NNS7	1332	174	7.66	4.32	6	0.03
Means	786.86	97.29	8.16	3.84	4.57	0.045

Table 3. T-test results

	NS mean	s.d.	NNS mean	s.d.	*p*-value (*p*<.05)
N of clausal Dat. per T-Unit	0.25	0.11	0.045	0.03	0.001

4.1. Expressing the role of Possessor

From table 4 it can be seen that across seven stories NSs used the Dative case to code Possessor ten times, whereas NNSs did not code Possessor by the Dative at all.

Table 4. Number of clausal Datives across all stories for native and non-native speakers

	NS1	**NS2**	**NS3**	**NS4**	**NS5**	**NS6**	**NS7**	**NST[a]**
Expe.	7	4	4	8	5	2	2	**32**
Recip.	6	5	2	6	3	9	9	**40**
+/-Be.	3	5	3	17	9	7	12	**56**
+/-Po.	0	0	1	4	1	3	1	**10**
Status	1	0	0	0	0	3	2	**6**
Move.	1	0	0	1	0	1	1	**4**
Total	**18**	**14**	**10**	**36**	**18**	**25**	**27**	**148**

	NNS1	**NNS2**	**NNS3**	**NNS4**	**NNS5**	**NNS6**	**NNS7**	**NNST[a]**
Expe.	1	1	0	0	2	2	3	**9**
Recip.	7	0	2	0	1	1	2	**13**
+/-Be.	2	1	2	1	1	2	1	**10**
+/-Po.	0	0	0	0	0	0	0	**0**
Status	0	0	0	0	0	0	0	**0**
Move.	0	0	0	0	0	00	0	**0**
Total	**10**	**2**	**4**	**1**	**4**	**5**	**6**	**32**

[a]NST – native speakers' total number of clausal Datives
NNST – non-native speakers' total number of clausal Datives

If we examine closer what kind of Possessors were expressed by NSs, it turns out that all ten instances denote what I call "Minus Possessors" (-Possessor). -Possessor can be defined as an entity, from whom something has been taken away (see example 2 in the Appendix). In the NS data four out of these ten instances were used to describe the scene in picture story 5, in which pirates take money away from the Father, threatening him with rifles. Below are examples from transcription of audio recordings that illustrate how four NSs choose to describe this scene:[3]

(3) *Doch später stellte sich heraus, dass das keine Rettung war, sondern vielmehr Piraten, die **dem Grossvater und dem Jungen** **[DAT]** ans Geld gingen.*
'But it turned out later that it was not a rescue, but rather pirates, that took money **from the grandfather and the son**.'

(4) *Die vermeintlichen Retter entpuppen sich als zwei Piraten, die **dem Vater** **[DAT]** noch das letzte Geld aus der Tasche ziehen.*
'The supposed rescuers turn out to be two pirates, that pull the last money from **father's** pocket.'

(5) *Und die Piraten kommen an Land, drohen sie mit Waffen und rauben **ihnen** **[DAT]** noch das letzte Geld.*
'And the pirates come to the shore, threaten them with weapons and rob **them** of the last money.'

(6) *Und sie greifen Papa Moll in die Tasche und rauben **ihm** **[DAT]** das bisschen Geld, das er noch retten konnte.*
'And they get into father Moll's pocket and rob **him** of a little bit of money that he was able to save.'

In description of this scene, the remaining three NSs choose the verb *ausrauben* ('to rob of all the belongings') that requires an Accusative object, because it portrays the act of robbing as much more direct, forceful and even violent (with use of weapons) and the victims of the robbery are presented as much more helpless and passive objects of thieves' actions (Zubin 1977):

(7) *Allerdings stellt sich dann heraus, dass es Piraten sind, die überhaupt nicht an Rettung denken, sondern daran, wie sie* ***den Vater und den Sohn*** **[ACC]** ***ausrauben*** *können, was sie dann auch tun.*
'It turns out that these are pirates, that don't think at all about rescue, but how **to rob the father and son**, which they subsequently do.'

(8) *Und dann stellen sie aber zu ihrem Entsetzen fest, dass das aber Piraten sind, die* ***die*** **[ACC]** ***ausrauben***.
'And then they realize to their horror, that these are pirates, who **rob them**.'

(9) *…und* ***rauben*** *dann unter vorgehaltenem Gewehr* ***Vater und Sohn*** **[ACC]** ***aus***.
'… and then **rob father and son** at gun point.'

If we compare how the NNSs describe the same scene, we see that the NNSs express -Possessor with a) possessive pronouns and the verbs *nehmen* ('to take') or *stehlen* ('to steal') – which are both inappropriate to describe the situation in the picture (examples 10 and 11), b) prepositional phrase "*von* + NP" ('from') and the verb *stehlen* (examples 12 and 13), c) Genitive construction ("father's money") (examples 14 and 15), or d) avoid expressing -Possessor altogether (16).

(10) *Und <sie> die Piraten nehmen* ***ihre Geld*** *und gehen zurück.*
'And <they> the pirates take **their money** and go back.'

(11) *Zwei Männer <mit Waffe> mit Waffen hatten* ***seinen Geld*** *gestohlen.*
'Two men <with weapon> with weapons had stolen **his money**.'

(12) *Und die Piraten haben* ***von die Vater*** *Geld gestohlen.*
'And the pirates have stolen money **from the father**.'

(13) *Und sie stielen **von der Vater und der Sohn**.*
‘And they steal **from the father and son**.’

(14) *Sie wollen das Geld aus der Vater; sie nehmen **das Geld des Vater**.*
‘They want the money out of father; they take **father’s money**.’

(15) *Und sie wollen **der Vaters Geld** nehmen oder stehlen und dann gehen sie weg mit der Vaters Geld.*
‘And they want to take or steal **father’s money** and then they go away with father’s money.’

(16) *Und sie haben nur das Geld gestohlen und haben gesagt, ok, danke für das Geld.*
‘And they have only stolen the money and have said, ok, thanks for the money.’

These results suggest that NNSs apparently have not yet acquired -Possessor role of the Dative case; instead, they employ lexical means or Genitive case markings for coding this role (since the primary function of Genitive in German is to express possession, it is not surprising that the learners use it in these situations). While from a formal standpoint all sentences except (15) are grammatical (with the exception of incorrect gender markings), they are inappropriate in describing the situation in the story; moreover, for each sentence, one would have to come up with a very specific and each time a different situation, in which these sentences could possibly be used by NSs. This finding underscores the fact that using various grammatical structures at the advanced level is more a question of discoursal and pragmatic appropriateness rather than pure grammatical accuracy.

4.2. Expressing the role of Recipient

Table 4 shows that Recipient is the highest category coded with the Dative case by the NNSs. Each attempt by NNS to use a non-prepositional phrase after the verbs that normally require Dative Recipients was coded as Recipient, regardless of whether case markings were correct or not. Table 5 illustrates what kinds of predicates NNSs use after which they attempted to express a Recipient by a non-prepositional phrase, i.e., through the case system.

Table 5. Verbs used by NNSs with the Dative Recipient role

	Correct case markings	Incorrect case markings
sagen 'to say, tell' (all produced by NNS1)	3	
schenken 'to give as a present'		1
danken 'to thank'		2
geben[a] 'to give' (4 produced by NNS1)	4	3

[a] *Schenken*, *danken*, and *geben* normally require a Recipient expressed by the Dative, whereas *sagen* can be used in quite a few contexts without necessarily explicitly expressing the interlocutor, or the Recipient of the verbal message.

From table 5 it is evident that the verb *geben* ('to give') in its sense "to transfer a concrete or abstract object from one entity to another" accounts for over a half of all instances in which NNSs attempt to use non-prepositional phrases to code a Recipient (7 out of 13). Therefore, it is interesting to compare the usage patterns of this most prototypical for the Recipient role verb between native and non-native speakers, especially considering the fact that both groups used it equally frequently, i.e., twenty one times each.

In nineteen out of these twenty one instances, the NS group coded the Recipient by the Dative case. In the remaining two cases *geben* was used without a Recipient. These instances appear to reflect subtle discourse and pragmatic elements having to do with focus. In one case the emphasis was neither on the transfer nor on the object being transferred, but on the repetitiveness of the action (the NS uses the same phrase two times in a row to emphasize that). In the second instance, the emphasis is on the goal of the action – so that the father stops playing violin:

(17) *Der nimmt sich seine Fiedel und spielt, dass dem Vater nur noch die Tränen kommen und* ***er noch mehr Geld gibt und noch mehr Geld gibt****, bis dem Vater dann schliesslich eine Idee kommt.*
'He takes his fiddle and plays, so that the father bursts out in tears **and he gives even more money and gives even more money**, until the father has an idea.'

(18) *…und der Geiger dann bereit willig* ***das ganze Geld zurückgegeben hat****, nur damit der Vater endlich aufhört zu spielen.*
'…and the violinist **gave** readily **back all the money**, so that only the father finally stops playing.'

Not once did the NSs use a prepositional construction *geben+zu*; while not ungrammatical, it is reserved for highly marked situations, in which a recipient needs to be very strongly emphasized. The absence of *zu*-construction in NS data stands in contrast to NNS quite frequent use of it: five NNSs used it for total of 11 times out of 21, all of which occurred in contexts, in which placing such a strong emphasis on the recipient wasn't contextually appropriate:

(19) *Der Sohn hatte ein gute Idee und **gab** das Essen **zu den Hund**.*
'The son had a good idea and **gave** the food **to the dog**.'

However, three NNSs also used a more native-like construction *geben*+DAT for the total of seven times:

(20) *Und dann der Sohn <gibt das Essen zu> **gibt dem Hund** **[DAT]** das Essen.*
'And then the son <gives the food to> **gives the dog** the food.'

Since *geben* is a prototypical verb for this role as well as a very frequent verb introduced quite early in L2 instruction, the students could have acquired a better grasp on its correct use through multiple exposures than on other less prototypical or less frequent verbs from the same category. A larger learner corpus is required to investigate learner production patterns of prototypical verbs for other roles and to compare them with production of less prototypical ones.

Additionally, three times *geben* was used by NNSs without indicating any Recipient as in (21), which is a highly marked usage in NS data, as we have seen earlier:[4]

(21) *Weil die Lied traurig war, **gibt** die Vater mehr Geld.*
'Because the song was sad, the father **gave** more money.'

From the above discussion it is evident that there are clear differences between the two groups. The preferred way for the NSs to express a Recipient would be using the Dative, particularly with such prototypical for the Recipient meaning verb as *geben*. NSs do not use the prepositional construction (with *zu*) at all. In contrast, it is the main strategy for NNSs to code a Recipient. In fact, NNSs employed *zu*-construction to code a Recipient fourteen times with three different verbs (*geben*, *sagen* 'to say',

bringen 'to bring'), whereas NSs used *zu*-construction only two times: both with the verb *sagen*.[5]

Two reasons can account for high frequency of prepositional construction use in the NNS data. First, one could argue that learners are transferring a structure from their English L1 and expressing a Recipient via lexical means rather than case markings: it is entirely possible to say in English "I gave the book to my father." [6] However, all three verbs (*to give*, *to say*, and *to bring*) allow the so-called "Dative alternation" in English, i.e., they can be used both with a prepositional object and a direct object, and thus mirror syntactic patterns of *geben*, *sagen*, and *bringen* (for an investigation of the reasons for Dative alternation in English from a discourse-functional perspective, see Thompson 1995):

(22) *I have given my father the book.*
Ich habe meinem Vater das Buch gegeben.

In this case, we cannot speak of the transfer as a factor influencing learner production, because otherwise learners should just as easily and appropriately be transferring an unmarked and more frequent direct object construction from English. Hence the second explanation: from the processing standpoint, it may be cognitively easier for the learners of German to produce prepositional constructions where relationships between participants are expressed via lexical means, than direct object constructions, where these relationships are coded by morphology. Givón (1984) claims that both diachronic development of languages and ontogenetic process of L1 and L2 acquisition occur as a shift along a continuum between pragmatic and syntactic modes of discourse. For these learners, the native-like syntacticization of role concepts hasn't happened yet, and may not ever happen without help of explicit meaning- and discourse-oriented instruction, for the reasons identified in section 2.

4.3. Expressing the role of Beneficiary

Let us look now at participant roles expressed by Dative in instances where use of Dative is syntactically optional, but semantically or pragmatically is required in order to provide the appropriate, native-like precision of meaning. One of such instances is when the Agent performing the action and Beneficiary of the action is one and the same person:

(23) *Jeder hat **sich** was bestellt.*
Everyone has himself:DAT something ordered
'Everyone ordered something for himself.'

In NSs stories I found sixteen instances of such co-occurrence of the roles expressed by Dative (with ten different verbs); in NNS stories – only one (see example (24), in which it was not entirely clear how the NNS intended to use the Dative construction.[7] Interestingly, sentence (24) was produced by NNS1, who consistently used the clausal Dative construction to code the Recipient after *geben* and never used *geben+zu* and who also used the most clausal Datives in the NNS group. Moreover, this NNS monitored his speech and corrected his use of Dative, which may be interpreted as a sign of this learner being more advanced than the rest of the group.

(24) <*Er sieht*> *er guckt **sich** an das Essen…*
(instead of: *er guckt sich das Essen an*)
<He sees> he looks himself:DAT/ACC(?) at the food
'He looks at food…'

Judging by the general absence of Dative in the NNS production of this construction, we can hypothesize that this co-occurring role (Agent +Beneficiary) is not part of the productive repertoire of roles that NNSs associate with the Dative case.

5. Implications for language instruction

The patterns in the data confirm the anecdotal impressions of German language teachers by suggesting that although the Dative case is introduced very early in classroom L2 instruction, even advanced learners have not acquired the full range of participant roles expressed by the Dative, at least not for productive use. An important next step might be to investigate how different instructional treatments (e.g., traditional vs. meaning-based) contribute to learner abilities to use the case system. Taylor (1993) advocates awareness raising, explicit, semantically-based grammar teaching as a way to promote insight into the foreign language and thereby facilitate its acquisition. He suggests that these insights might reduce the perceived arbitrariness of language and transform language learning from memorizing a host of exceptions into understanding how and why the

system works the way it does. Rather than language learning being primarily focused on the acquisition of arbitrary forms, it would focus on the acquisition of concepts and motivated usage, which would allow learners to generalize the conceptual knowledge to new situations for productive use.

Taylor's argument supports the views of many Second Language Acquisition researchers who claim that explicit meta-linguistic knowledge is indispensable when implicit knowledge is not yet available and when there is often not enough time to let implicit learning do the job (DeKeyser 1998; Ellis 2002; Hulstijn 2002). In recent years, there has been a surge in classroom-based studies that explore the benefits of Cognitive Linguistics theories' application to second language pedagogy (see a recent edited volume by Achard and Niemeier 2004); they document very encouraging results and demonstrate that instruction based on Cognitive Linguistics principles helps solve some difficult problems in various areas of L2 teaching. In this context, systematic investigation of the effects of meaning-based instruction that strives to teach the learners the conceptual structure of a case system, and not only its formal manifestations, is a promising and much needed research direction.

Appendix: Examples of Dative participant roles (adapted from Smith 1987)

1. Experiencer:	***Mir*** *ist kalt.* I:DAT is cold 'I am cold.'
2. +Possessor:	*Das Buch gehört* ***mir****.* the book belongs me:DAT 'The book belongs to me.'
-Possessor:	*Er nimmt* ***dem Kind*** *das Buch weg.* he takes the child:DAT the book away 'He takes the book away from the child.'
3. Recipient:	*Hans schickte* ***mir*** *einen Brief.* Hans sent me:DAT a letter 'Hans sent me a letter.'
4. Beneficiary:	*Fritz öffnet* ***der Dame*** *die Tür.* Fritz opens the lady:DAT the door 'Fritz opens the door for the lady.'
Maleficiary:	*Sie verletzte* ***ihm*** *die Hand.* she hurt he:DAT the hand 'She hurt his hand.'
5. Mover:	*Der Polizist folgt* ***dem Dieb****.* the policeman follows the thief:DAT 'The policeman is following the thief.'
6. Entity of higher status:	*Er diente* ***der Familie*** *seit vielen Jahren.* he served the family:DAT for many years 'He served the family for many years.'
7. Secondary actor:	*Er antwortet* ***mir****.* he answers me:DAT 'He answers me.'

Notes

1. The number of verbs and adjectives in such lists varies: some grammars give examples of only most frequent ones, others feature rather exhaustive lists. However, they invariably emphasize the necessity of memorizing individual lexical items and rarely attempt to group verbs or adjectives according to their semantics; when they do, such groupings account for a small portion of items in the original lists (such as "verbs of giving or taking" or "adjectives expressing sensation") and thus inadvertently promote the sense of futility of any attempts to find motivation behind using the form.
2. The present study investigated the issues of using the case in oral performance; results might be somewhat different if one were to investigate non-native speaker performance under a writing condition or with a different task, although I believe that the general patterns would still hold. Moreover, there are no claims made as to the differences in mental representation of the case system between native and non-native speakers.
3. Note on transcription: standard puncutation and capitalization are used in the transcription to facilitate comprehension; <…> denotes stretches of speech that are immediately repeated or corrected.
4. The following is the summary of the use of *geben* by the seven NNSs (numbers in parentheses indicate how many times each NS employed a construction):
   geben + DAT: NNS1 (4), NNS3 (2), NNS5 (1)
   geben + *zu*: NNS2 (2), NNS3 (1), NNS4 (3), NNS5 (2), NNS7 (3)
   geben + 0: NNS1 (1), NNS2 (1), NNS6 (1)
   It is interesting to note that NNS1 does not use *geben*+*zu* at all, but only more native-like *geben*+DAT (although once incorrectly). Incidentally, this person also uses most clausal Datives (ten) out of the NNS group in all stories, which to me suggests that he might be a slightly more advanced learner than the rest of the group – at least when the use of cases is concerned. NNS 3 and NNS 5 are in transition, both using *geben*+DAT and *geben*+*zu* constructions; others use prepositional phrase only, and NNS6 avoids coding Recipient explicitly altogether in any of the seven stories, even in the instances where it is necessary.
5. *Sagen* also appears in NS data three times with clausal Dative in very similar situations as the two *zu*-constructions; the present dataset is too small to attempt to discern discourse factors that would account for this variation.
6. This explanation could also account for NNS use of preposition *von* ('from') and the Genitive construction in expressing a -Possessor.
7. In German 3rd person singular pronoun is the same in both Dative and Accusative cases (*sich*). NNS1 appears to use the verb *gucken* instead of the separable-prefix reflexive verb *sich angucken* and might have treated *gucken* as a reflexive verb that requires a reflexive pronoun *sich*, but it is unclear, which case NNS1 assigned to *sich* – Accusative or Dative.

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Personal pronouns, blending, and narrative viewpoint

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The interpretation of pronouns in narrative discourse has traditionally been seen as requiring an approach in which the concepts of narrative viewpoint and narrative voice play a special role. The area of usage that has received the greatest amount of attention is the shift in pronominal reference required when the narrator represents a character's speech or thought. In the simplest case, a character's statement such as *I want to go home now* may be represented in the 3rd person narrative as *She said she wanted to go home right away*. The transformed narrative utterance requires that shifts of viewpoint be marked in virtually all areas of usage where deixis is involved (among others, expressions locating the utterance in time and space), but one of the most marked shifts is the change in the use of personal pronouns (cf. Banfield 1982; Fludernik 1993).

This paper attempts to show that choices of pronominal reference in the narrative invariably serve the establishment and maintenance of narrative viewpoint in ways which go beyond representation of character's speech and thought. At the same time, I will argue that all such viewpoint-related shifts are best interpreted in terms of the phenomena described by the theory of *conceptual integration*: blending and decompression.

Blending has been described by Fauconnier and Turner (1996, 1998a, 1998b, 2002) as a cognitive mechanism allowing us to conceptualize situations as mental constructs involving projections from two or more mental spaces. It explains clearly how we interpret a variety of ordinary language forms. For example, the ambiguity of the phrase *a blue pen* (*blue* can describe the color of the ink or the outer surface of the pen) results from two different ways in which the concept of color is blended with the conceptual frame of the object (pens can be described in terms of their physical appearance or their functional features).

However, conceptual integration gives the most interesting results when mental spaces undergo blending so that a new understanding of a situation can be achieved. For example, a politician who discusses his opponent's views may present the conflict of beliefs as a verbal exchange (he can say things like *I claim that we need a peacekeeping force, while Smith says we*

don't. My response is that he keeps overlooking important facts.). The opinions expressed by the two men in different temporal and spatial environments are thus being talked about as if they were exchanged in the course of a conversation, in a shared environment. The two original *input* spaces (of the two opponents' individual views) are now blended into one. The setting up of the *blended* space (in which the politicians share the same context and talk to each other) gives rise to an emergent structure of a debate-like interaction, in which opinions expressed can also be immediately responded to. The speaker and his opponent may have never met, and yet their positions can now be presented as a dynamic argument. What is more, beliefs which were never actually expressed, but can be deduced from what is known, can now be presented as uttered and thus available as a target of criticism. The blend thus builds on pre-existing mental constructs, but gives rise to new lines of reasoning, not available in any of the input spaces alone.

Blending is most conspicuously involved in creating new conceptualizations, but it may also underlie our common, everyday understanding of concepts. The concept of 'the self,' or identity, is an excellent example here. It is generally understood to refer to our perception of a person as being unique, essentially different from all others. An identity of a person is typically viewed (by him/herself as well as others) as a coherent whole, because we blend the person's character, physique, social/family role, behavioral patterns, etc. into a coherent sense of self. We also compress all the changes the person has undergone through time (changes in physical appearance, social maturity, etc., which inevitably occur in a person's life span) into a uniform understanding of who the person is. Thus blending underlies our basic sense of identity, whether our own or that of another person.

The everyday concept of the self (which is blended and compressed) can, however, be decompressed along a variety of dimensions. In our example of a political debate, the speaker's adversary is talked about as if he were present in the blended space, while in fact it is only his 'political persona' that is projected into the blend. For the purposes of the fictional debate his other characteristics (such as age, family role, views on art, or favorite food) are not considered or even known. The man's political role has been decompressed and projected into the blend, but it is still possible to use referring expressions such as *Smith, he,* or *my opponent*, which do not suggest decompression.

Similarly, if a person reminisces about the past and offers a comment such as *I was a different person then*, what is signaled is that the changes in

the person's understanding of his/her own self are too important to allow the blended image to be maintained, at least not for the purposes of the current exchange (cf. Talmy 1988). Temporal changes aside, a person may think of his/her identity as split with respect to a number of different co-occurring criteria. As Lakoff (1996) points out, there is a number of ways in which we might talk about ourselves as "split selves." Lakoff's examples, such as *I'm not myself today, I have to reward myself for all the hard work, I've been battling with myself over this*, represent a number of "split-self metaphors," or as we might now say, a number of viable decompressions of the blended sense of identity.

As Lakoff's examples clearly show, decompression of identity is well represented in colloquial discourse, as it satisfies the speaker's need to temporarily suspend the myth of a unique and coherent sense of self. Narrative discourse, on the other hand, often has additional tasks to perform. Not only does it have to represent the complexities of identity to a potentially higher degree, but it also needs to establish, shift and maintain narrative viewpoint. The choice of narrative viewpoint, in turn, influences the representation of identity, since the readers may be viewing a particular character through the character's own eyes, or through the eyes of the narrator or another character. The narrative may thus require that different aspects of a character or a narrator be talked about through different referring expressions (cf. Emmott 2002; Dancygier 2004). As I try to show below, the choice of personal pronouns in narrative discourse is also guided by all of the categories mentioned above: the uniform (blended) concept of self, decompression of self along the lines established by the narrative, and the maintenance or shift of narrative viewpoint.

The examples to be discussed below come from various fiction and non-fiction narratives.[1] First, I will analyze the use of the first person pronoun *I*, focusing on the cases where its interpretation requires a shift of viewpoint to a different narrative space. The next section will discuss the instances where an establishment of a new narrative viewpoint results in decompressing a character's identity in a way that requires the use of two different pronouns (first person or third person). The final section will show how third person pronouns may also represent decompression and shifting viewpoint.

1. The deictic ground

In her analysis of deictic expressions, Rubba (1996) describes deictic pronouns such as *I* as typically understood against the *default ground* (the actual discourse setting). She also shows how setting up new mental spaces (as described in Fauconnier 1994) may create *alternate grounds* and trigger off the use of deictics which are anchored to the newly established spaces, rather than to the default discourse setting (e.g., in the interview quoted by Rubba [1996], the word *here* was used to represent a location in the newly established space of southeast San Diego, not the immediate discourse context of the interview). It is interesting to note that among all deictic expressions discussed by Rubba, the pronoun *I* remains most consistently anchored to the initial discourse space, or the default ground (unless, of course, another person's words are being directly quoted). This is possible because the deictic structure of the mother discourse space is available (via pragmatic connectors) in all the emerging daughter spaces.

It is possible to use the concept of the default ground also in the context of the narrative. The proponents of Deictic Shift Theory (e.g., Galbraith 1995; Wiebe 1995) offer an interpretation of narratives which assumes that a text establishes its own deictic field through the linguistic expressions used, even though they do not postulate that the field must in all cases contain a default communicator (the narrator) who would be the *I* (the speaker) of that deictic field. One can thus assume that once a narrative text sets up its active mental space (cf. Oakley 1998; Sanders and Redeker 1996), that space would provide the default deictic ground against which the interpretation of spatial, temporal, as well as personal deixis will arise.

Postulating such a default ground is especially useful in the cases of the first-person narratives. In such narratives, the pronoun *I* (when used outside of direct representation of other characters' words) is understood to refer to the narrator, or, since the narrator is also a character, to the narrator *qua* character. In all such cases, the narrator/character establishes the narrative viewpoint in the main narrative space being developed in the text. For example, when the narrator/character in Dave Eggers's novel says *I go back to the bathroom, look under the sink. Nothing. I throw the cabinet door closed. I am making as much noise as I can.* (DE.AHWOSG 264), the text maintains the point of view anchored to the current actions and thoughts of the narrator/character. Even when the setting changes (as it does all the time in book-length narratives), the first person pronoun continues to mark the currently active mental space as the default ground.

When other characters appear, they are referred to in the third person, because the "first-person" viewpoint is being maintained. However, when Eggers writes in another part of the novel *A month ago Beth was awake early; she cannot remember why. She walked down the stairs, ...* (DE.AHWOSG 5), and then continues to describe the events of that day from Beth's point of view, the narrative space being developed is anchored temporally and conceptually to Beth's experience, only indirectly available to Dave, and thus requires a consistent use of third-person reference. We should also note that the part of the story being told in the fragment is undoubtedly relevant to the main, first-person story line, but the change of the pronouns is necessary to signal the shift in narrative viewpoint, even though the "third-person" part of the story is subordinate and directly relevant to the "first-person" default story-line.

2. Being ME

As the examples below suggest, the pronoun *I* continues functioning as a deictic anchor to the default ground also in situations when the main narrative space is blended with another space, while the referent of *I* is decompressed across the spaces. In (1), the narrator of *In America* introduces herself to the reader, describing herself and adding comments in parenthesis which illustrate her point.

(1) I'm rather impulsive (I married Mr. Casaubon after knowing him for ten days) and have something of a taste for risk-taking, but I'm also prone to the long, drawn-out huddle in a corner that caring about duties brings on (it took me nine years to decide that I had the right, the moral right, to divorce Mr. Casaubon), ... SS.IA.24

However, the parenthetical descriptions, although still using the pronoun *I*, refer to a different mental space – that of another novel, *Middlemarch*, whose heroine goes through a difficult relationship with another character, Mr. Casaubon. In fact, the parenthetical *I* in (1) does not act like the actual heroine of *Middlemarch*. On the contrary, the narrator of *In America* uses the context of *Middlemarch* to create a different story, which suits her modern social values and the temperament of the person she is. Thus the *I* in the main text refers to the main narrative space of *In America* (default ground), while the *I* in the parenthetical comments evokes partial structure of the narrative space of *Middlemarch*. At the same time, the person

represented by *I* is partially decompressed across the two spaces. While her character traits and behavioral patterns (originating in *In America*) remain the same in both spaces, her appearance, name, surroundings, etc., are different, appropriate to the stories of the two novels. The essential self is maintained in both spaces, while all the external factors are different and differently located in their respective fictional times and spaces.

On the first reading, example (2) does not seem unusual in any way. The cross-space mapping of identity becomes apparent only if we know that the narrator of the story, and the *I* participant in the conversation, is a man, not a woman. He pays a visit to Ms. Lee, a consultant, and makes up a story to see what Ms. Lee might suggest.

(2) "I have a problem," I said.
"You've come to the right place," said Ms. Lee.
"I've just won the New York Lottery."
"That's no problem."
"But I'm forty, I'm a woman, I work in a deli in the Bronx ...
"So you want a total makeover, right?" JR. HMH. 91

What is particularly interesting in the example is that the *I* refers to an entirely fictitious person, who has nothing in common with the actual speaker. All that the pronoun picks out from the ground is the purely deictic, "I-means-the speaker" aspect. The speaker in the context of a consulting session is also a client, so we expect Ms. Lee to offer her suggestion to the person present in her office, regardless of what identity the person represents. This is, then, the case of decompression where the actual participant gives up all aspects of his identity except being the speaker in the context of a client-consultant exchange. At the same time, the consistent narrative viewpoint is being maintained, since the writer-as-client will be forming opinions on the usefulness of the appointment, not the imagined woman, who is described in terms of her circumstances only. The judgment will be that of the writer alone.

In (3) the person telling the story is a woman. She is dressing up as a man and inspecting her reflection in the mirror, concluding that the disguise is successful.

(3) She gave me a man's jacket, a pair of striped trousers, a derby hat. I put them on and looked in the mirror. I was a man. PT. PP. 97

There are thus two mental spaces: the main (default) narrative space and the representation space, which is what one sees when looking into the mirror. In the story space the pronoun *I* refers to the main character/narrator (a woman), in the representation space there is someone who looks like a man. But that representation is a blend of a deceptive disguise one perceives and the personality of the *I* from the main story space. For the reader to process this, the main character had to be decompressed into the "outer" and "inner" self, and then the new "outer" self had to be blended with the old "inner" self. The construction of such a blend is necessary to understand the next part of the story, when the disguised photographer is involved in some events crucial to the plot. The narrative viewpoint is thus maintained, but the new narrative space is clearly grounded in an understanding that the main character (and narrator) is now perceived as a man.

The fragment quoted in (4) comes from a story in which the writer is describing his first impression of Barbados. He decided to spend his vacation on the island after he had seen some impressive photographs, but the reality is disappointing.

(4) I may have noticed a few birds careening through the air in matinal excitement, but my awareness of them was weakened by a number of other, incongruous and unrelated elements, among these, a sore throat that I had developed during the flight, a worry ... A momentous but until then overlooked fact was making its first appearance: that I had inadvertently brought myself with me to the island. It is easy to forget ourselves when we contemplate pictorial and verbal descriptions of places. At home as my eyes had panned over photographs of Barbados, there were no reminders that those eyes were intimately tied to a body and mind which would travel with me wherever I went ... AB.AT. 19–20

The interpretation of this fragment also calls for decompressions, linked with different mental spaces. The first *I* could be read as calling up the traveler-narrator, but the reader can soon see that it refers in fact to the traveler-observer, the same one who was originally enchanted by pictures of Barbados, and who is then referred to as *my eyes*. But the observer (the third *I, me*) is in fact functioning separately from the rest of the person's self (*myself*). The part of the writer's identity referred to as *myself* can experience bodily sensations (sore throat) and feel emotions (a worry), hence the ensuing description of *myself* as the body and the mind. The

decompression is necessary for the writer to maintain the viewpoint of the traveler-observer (the 'Barbados' space is the default here, and the place is being experienced mainly at the visual level), while simultaneously attributing the disappointment to other aspects of his self.

Decompression and blending seem to also underlie the choice of pronominal expressions in Free Indirect Discourse (FID), where utterances and thoughts attributed to characters are viewed from a different deictic ground.[2] Example (5) selects a fragment of a conversation held between the first-person narrator and another character (named Utz). The conversation is about alchemy, and Utz seems to know much about it, so he contributes most to the exchange.

(5) He [Utz] shifted to a different tack.
What did I know of the homunculus of Paracelsus? Nothing? Well, Paracelsus had claimed to create a homunculus from a fermentation of blood, sperm and urine. ... Would I now please reflect on the fact that ... BC. UTZ. 110

Throughout the novel, *he* refers to Utz, while *I* to the narrator. However, the *I*s in (5) appear in questions asked by Utz, and thus are all instances of pronominal shift from *you* to *I*, as could be expected in FID. The interpretation of this usage requires, again, decompression and blending. The *I*s in the fragment do not refer to the narrator-character, and do not mark him as the speaker. They do, however, anchor the viewpoint in the default narrative space, that of the story as told by the narrator-character. At the same time, the *I*s (contrary to standard usage) also represent the narrator as the addressee (*you*) of the questions asked by Utz (otherwise, we would be reading them as rhetorical questions which the narrator addresses to himself). What seems to be happening is that the pronouns *I* here represent a blend of deictic cues of two different kinds: they are anchored to the main narrative space and the narrator's point of view (which had to be separated from the rest of the narrator's identity), and they represent the addressee when viewed from the perspective of the exchange between Utz and the narrator. The choice of *I* (instead of *you*) is dictated by the principle which explains all the other examples in this section: in the usage of personal pronouns, the deictic grounding provided by the default narrative space is inherited by all the emergent spaces (with their possibly different viewpoints). As in the other cases above, then, the pronoun maintains the narrative viewpoint in spite of decompression, by linking it to the default narrative ground.

3. Is being HIM being ME?

In the examples analyzed above, the decompressions of identity across different narrative spaces did not cause a shift in the pronoun usage, because of continuing treatment of the "I" default space as the space determining narrative viewpoint. There are cases, however, in which decompression does cause the change in pronominal reference. As I will try to show, such pronominal shifts signal a setting up of a new narrative space and the grounding of the newly established referent in that new, alternative deictic field.

Extract (6) is a good example of blending and decompression at work (see Dancygier [2005] for a broader discussion). It comes from a non-fiction narrative where the writer thinks back on his childhood, especially his relationship with his father. In the fragment, the expressions *him, young man, he*, and *his* refer to the father, as he was back then. The writer, however, is decompressed across the two temporal spaces: *I* is linked to the narrator as he is now, while *the child* refers to him as he was then.

(6) Seeing him now through different eyes, I find myself watching a sorrowful, lean and angular young man, hopelessly lost for words. ... He searches the face of his child for a clue as to how to go on ... The child is blind to all this. He is putting on the finishing touches to his Bored Aristocrat face. ...
This was very barefaced stuff. I cared. ... JR.CO 18–19

The active narrative space is anchored to the adult writer's present. He offers an explanation of his behavior as a child, as he now sees it. In that space, the writer is "watching" a scene from his childhood, as if it were happening concurrently. Hence the consistent use of the present tense – a signal that the temporal dimensions (the present and the past) have been blended, while the participants have been decompressed.

In the final sentence, though, the writer returns to his current evaluation of the past. *I cared* compresses the two identities (Raban-child and Raban-adult) into one individual again (referred to as *I*) and re-establishes the two temporal spaces (the past tense describes the child's past feelings, as understood now). The use of the present tense and the phrase *the child* earlier in the text signals only what one could see when observing the scene (what the father had to see then and what the narrator "sees" now). But the actual past emotions were only accessible to the child's inner self, which his adult counterpart shares. Since the emotion described in *I cared* can be

attributed to the "inner self" of both the youngster and his adult counterpart, the use of the pronoun *I* is needed so that the re-evaluation is anchored to the main narrative space. For comparison, using *I* in the description of the child's past behavior would have been confusing, since it would have suggested that the adult sympathizes with the childish display of lack of concern. The point is precisely that he does not, but he has to "look at it" from an adult point of view to appreciate it.

Example (7) describes another case of the narrator looking at himself in the mirror. Contrary to what we could see in (3), however, the perceived reflection is not referred as *I*, but as *he*. In fact, the narrator seems to refuse to see the representation as ultimately linked to his own persona.

(7) ... and on the way we were ingeniously tormented with mirrors, each one placed so that it appeared to be an innocuous part of the display. I kept on barging into a figure who darkly resembled Henry James's inconceivable alien. I first spotted him in the Victorian men's club. ... He could have done with a new set of teeth. JR. HMH. 57

Here, the decompression of the man and his reflection is complete. The narrative proceeds as though there were in fact two different men. The gap between the writer's sense of self and his perception of the figure he sees in the mirror is so wide that they cannot jointly serve as a deictic anchor. As in the cases above, *I* upholds the pragmatic link to the active narrative space, while *he* marks a presence that cannot share the *I*'s point of view.

The next two examples illustrate decompressions of identity which also induce the split between the first person and third person usage. In each case, the decompression draws the dividing line along two roles, or two aspects of an activity. Thus, (8) is about two different roles a travel writer takes before his book is complete (the note-taker recording facts during travel and the writer transforming the record into a story), while (9) is about the inner conflicts of a self-employed person, who goes back and forth between being the employer and the employee.

(8) I try to keep a notebook when I'm on the move ... but hardly ever find anything in the notebook that's worth using later. ... The keeper of the notebook sounds stupid and confused. He grouses too much about tides and timetables ... When I'm writing the book, I get precious little help from him... JR. FLM. 245

(9) I have grown tired of my dealings with Self. He struck me as a textbook example of what was wrong with British industry ... By the

> brandy stage, Self and I were reconciled. We merged back into each other. JR.FLM. 337

In both cases *I* stands for the role that the writer properly aligns himself with, while *he* represents the role he needs to play, but is not quite satisfied with the results. Both quotes come from the writer's autobiography and they make it clear that the narrator's view of himself in the fragments is primarily focused on his role of a writer, while the other, secondary roles he plays (notebook keeper, the person dealing with contracts, money matters, etc.) are not at the centre of his identity, at least not for the purposes of the narrative telling the story of his writing career. As in the other cases, the decompression along the lines of different roles is accompanied by pronominal choices which reinforce the reader's understanding of default and alternate deictic grounds.

Interestingly, (9) also mentions the return to the blended, coherent self, where there is no need to separate the roles. All of the examples analyzed here as instances of decompression are different from the surrounding text, where the selves in question are presented as standard and, therefore, compressed. Example (9) is special in explicitly commenting on the temporariness of the decompression.[3]

Finally, the shift from first to third person may signal a shift to another character's point of view (an alternate ground). In (10), the consistent *I* of the narrative is substituted mid-sentence by the expression *his brother*.

(10) I wanted to be home in case he came back early. ... made it in time. ... The house was empty, and I dove into bed, fell back asleep, and when he came back home his brother was there, of course had been there the whole time, of course had never left. DE.AHWOSG. 112

Throughout the passage containing (10), Dave (the main character/ narrator) is describing his attempts at concealing his absence from his younger brother, Toph. The clause *when he came back home* sets up a new narrative space, anchored to Toph, not to Dave. The expression *his brother* has a number of functions here. It describes Dave in his family role (rather than in his role of a writer, a party-goer, or Toph's guardian), and it chooses the role descriptor as it would be used by Toph. The determiner *his* also relates the expression to Toph's viewpoint. At the same time, however, the choice of the third person expression signals a temporary shift from the default deictic ground (where Dave is *I*), to an alternate ground (where Dave is *my brother* to Toph). As a result, both of the clauses beginning

with *of course* (which the reader knows are not true) are presented as true from Toph's point of view.

As these examples show, a shift from first to third person reference in the narrative signals a temporary shift from the default deictic ground to a different one, anchored to another aspect of the *I*'s identity or to another character. Such shifts are often possible because the original identity of *I* is decompressed into two, so that each one can serve as a deictic anchor to a narrative space.

4. Being HIM, being HER

The examples in the sections above come from first person narratives, where decompressions and deictic shifts are the clearest. However, similar processes can occur within third person narratives, with similar effects. Example (11) comes from a novel in which the main character starts a new life under a new name and describes the changes her behavior and personality undergo in the new situation. There are now two persons instead of one: Delia and Miss Grinstead.

(11) Miss Grinstead was Delia – the new Delia. AT.LY.94
She had noticed that Miss Grinstead was not a very friendly person. The people involved in her daily routine remained two-dimensional to her, ... She hadn't developed the easy, bantering relationships Delia was accustomed to. AT.LY. 101

The decompression signaled by the choice of the name creates two narrative viewpoints. The default narrative space is anchored to Delia, while the one inhabited by Miss Grinstead relies on the perspective of people who get to know her, but do not know the "real" Delia. The alternation between the default and secondary grounding works similarly to the shifts exemplified by first person narratives, but the shifting viewpoint is not followed by a change of pronoun, as both Delia and Miss Grinstead are pronominalized as *she* in the fragment in (11). However, the use of two names accomplishes the same effect.

In FID occurring in third person narratives the decompressions and blends also seem to work similarly to the first person examples, such as (5) above. In (12), the main character, Delia, is having a conversation (a rather informal job interview) in which her interlocutor asks questions about her skills and informs her about the job conditions.

(12) Mr. Pomfret didn't mention references. His sole concern was the nature of her past duties. Had she typed, had she filed, taken shorthand? ... Sorry the pay was just minimum wage, he said. ... Also she was expected to brew the coffee; he hoped that wasn't a problem. AT.LY. 95

Throughout the fragment, the pronoun *she* refers to Delia, but also combines deictic information from two sources. On the one hand, and primarily, it identifies the main character in the default (third-person) narrative space, on the other hand it signals the addressee of Mr. Pomfret's questions and statements (in his words, she would have been represented by *you*). As in the case of (5) above, this requires decompressing the deictic grounding from other aspects of Delia's identity and then blending the two deictic roles she plays in the two spaces. Still, the choice of the pronoun remains anchored to the main narrative space, that of Delia's story.

It is also interesting to note that the *he* of the last sentence is also a blend, in which Mr. Pomfret is a character in the main narrative space and the speaker in the conversation space where he talks about his hopes. But even though he must have used the first person pronoun to refer to himself (*I hope it's not a problem*), in the main narrative space he is represented in the third person, because his deictic space never becomes the default ground.

To sum up, this paper argues that the theory of conceptual blending and decompression promises a novel explanation of how we interpret identity and reference in narrative texts. Even though it is just a preliminary attempt at describing the issues involved, it suggests a new direction in the analysis of referential phenomena in longer texts. One such phenomenon is Free Indirect Discourse, which cannot be adequately explained without the concept of a blended viewpoint. It is also important that the blending approach relies on the configurations of narrative spaces (e.g., default vs. alternate), while also allowing the spaces to be distinguished by their different focus or viewpoint (see Cutrer 1994 and Fauconnier 1997 for a broader discussion). Contrary to the standard practice in narratology, it does not postulate special discourse participants (such as the narrator in third-person narratives) just to represent viewpoint. As the examples above suggest, the viewpoint is more adequately described when attributed to narrative spaces and their structure, since the participants profiled by the text can be decompressed and blended as the need arises.

Notes

1. Throughout the paper, the text being quoted from is referred to through an acronym of the author's name and the title, followed by the page number; full references to the texts quoted are provided at the end.
2. Free Indirect Discourse involves a number of issues such as temporal viewpoint, spatial orientation, transformation of sentence types, or choice of emotive expressions. A fuller description of free indirect style in terms of blending and decompression exceeds the limits of the present paper, thus only the question of pronominal choice will be partially addressed.
3. The pronoun *we* is also an interesting marker of viewpoint here. For further discussion of *we* see Dancygier 2004.

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Meaning construction in humorous discourse: Context and incongruities in conceptual blending[1]

Akiko Fujii

1. Introduction

Conceptual integration, or blending (Fauconnier 1997; Fauconnier and Turner 1996, 1998, 2002) is viewed as a powerful, ubiquitous, and universal operation in human cognition. It is a theory of meaning construction, in which elements from activated knowledge structures, or *mental spaces* are selectively projected to a *blended space*. The projected elements are re-assembled in the blended space to create a new unique structure, or *blend*. Coulson (1997, 2001) uses as an example the activity of "trashcan basketball" where university students vie to throw crumpled pieces of paper into a wastebasket. This activity can be construed as a blend that activates two knowledge structures, namely garbage disposal and basketball, and integrates elements from these input spaces (see Coulson 2001 for a detailed analysis). Blends may be developed, or elaborated, according to the constraints of the blended space. For example, in trashcan basketball, there may be rules that differ from either input space; players may need to be far enough away from the trashcan to "score" a basket. This would be a property unique to the blend (Fauconnier and Turner 2002).

Crucially, blends are connected in principled ways to their input sources, and therefore evoke a conceptual *network* of several interlinked mental spaces. For example, the blend "same-sex marriage" (Fauconnier and Turner 2002) is a conceptual network with an input space containing knowledge about conventional marriages and another input space containing knowledge about same-sex partnership. Links between the spaces, or *cross-space mappings* connect analogous elements from each input space, such as number of members, length and intensity of commitment, and love. Select aspects of each space such as the wedding ritual, tax laws, and domestic roles, are projected into the blend to create a unique concept that may then be elaborated with *emergent* properties of its own.

Blending, or the creation of a new unique structure, occurs in dynamic, on-line, everyday meaning construction. The blending model has been used

to account for specific linguistic phenemena such as nominal and adjectival compounds (Coulson 1997), grammatical constructions (Fauconnier 1997; Fauconnier and Turner 1996), counterfactuals (Fauconnier 1997; Fauconnier and Turner 1998), humor (Coulson 1996, in press) and narrative (Oakley 1998). Blending also occurs in the construction of meanings that become entrenched as part of our technological or cultural heritage, including ideas such as the computer desktop interface, complex numbers, writing, or cultural rituals. A recent special issue of the Journal of Pragmatics showcased the application of blending theory to analyses of young children's play (Sinha 2005), Micronesian navigation (Hutchins 2005), and mathematics (Nunez 2005). It is argued that conceptual integration is fundamental to the activities that define human beings and distinguish us from other species, such as language, science, and religion (Fauconnier and Turner 2002).

In this chapter, conceptual blending is used to model the intricacies of meaning construction in three diverse instances of humorous text in everyday interaction. An analysis of the conceptual networks evoked by the texts reveals the basic cognitive operations that account for the humorous interpretation of the texts. The analysis also demonstrates that all three blends were created through a common underlying mechanism known as category extension. Finally, it is proposed that social and contextual aspects of knowledge frames play an important role in the on-line meaning construction of humorous blends.

2. Conceptual blending and humor

The role of conceptual blending in humor has been discussed by Coulson using an example of internet humor, the Menendez Brothers Virus (Coulson 1996), and a variety of political cartoons (Coulson in press). The humorous interpretation of these examples depends on incongruities in the blending of input spaces that share some elements of abstract structure (Coulson 2000). The Menendez Brothers Virus is a computer virus that deletes computer files, takes the space the files occupied, and then claims it was a victim of physical and sexual abuse. It is a blend between a prototypical computer virus and the Menendez Brothers affair, a real event where two brothers killed their parents, inherited expensive property, and then in defense of their actions claimed they had been abused physically and sexually as children. The humor in this blend depends on competition between two contrasting frameworks for the original Menendez Brothers

murder, a conspiracy framing and victim framing. The humor is created by blending the victim framing (rather than the conspiracy framing) with the computer virus scenario. The resulting blend is a computer virus, which absurdly claims to be a victim of abuse, as did the Menendez brothers in their real-life trial. Furthermore, Coulson points out that the ridiculous nature of the victim framing is projected back into the input spaces as social criticism of the Menendez brothers.

Coulson's analysis resonates with contemporary theories in the area of humor studies as well as more traditional views of humor based on incongruity and resolution that go back as far as Kant (see Attardo 1997 and Attardo and Raskin 1991 for detailed discussions). In particular, Coulson and Attardo, a leading humor theorist, both make reference to Koestler's theory of bisociation, "the perceiving of a situation or idea … in two self-consistent but habitually incompatible frames of reference" (Attardo 1994: 175), as well as work by Hofstadter and Gabora (1989). Attardo (1997) also proposes "cognitive dissonance" as a way to conceive of the concept of incongruity. Another example (Coulson in press) also illustrates this quality. A political cartoon, which comments on former President Clinton's scandal with Monica Lewinsky, depicts "William Washington Clinton" dressed in period costume in a cherry orchard with an electrical saw, saying "When I denied chopping down the cherry tree I was legally accurate." There are two input spaces to the blend, the scandal scenario of modern day President Clinton, and the "I cannot tell a lie; it was I that chopped down the cherry tree" scenario of George Washington, the first president of the United States. Certain features of George Washington, such as time period, political role, and the cherry tree scenario are projected into the blend, and create a stark contrast with the dishonesty and denial factors projected from the Clinton scenario. Again, it is the clash within the blend that creates the humor, or irony.

3. Frames

Frames which are conceived of as structures for input spaces or for blends are one of the fundamental tools used in blending theory. According to Fauconnier and Turner (1998), an organizing frame "provides a set of organizing relations among the elements in the space." For example, definitions of words such as 'Tuesday' or 'weekend' depend on the existence of a frame for the organization of a week in Western society; understanding the word 'bachelor' relies on knowledge about social norms

for a man's life cycle in western society (Coulson 1997). This view of frames, widely employed in psychology, artificial intelligence, and linguistics, has its roots in the concept 'schema' in Gestalt psychology, where concepts are understood relationally as part of a system. A broader view of the notion of frame used in anthropology, ethnography, and sociology, introduced by Bateson and further developed by Hymes and Goffman, is used to understand "the level of abstraction at which any message is intended" (Tannen 1993: 18), that is, "whether the activity being engaged in is joking, imitating, chatting, lecturing, or performing a play" (Tannen 1993: 18). Goffman (1974) discusses frames as providing an answer to the question "What is it that's going on here?" (Goffman 1974: 25). Tannen (1993) provides a comprehensive description of frames as basically 'structures of expectations', encompassing both approaches outlined above; that is "on the basis of one's experience of the world in a given culture (or a combination of cultures), one organizes knowledge about the world and uses this knowledge to predict interpretations and relationships regarding new information, events, and experiences" (Tannen 1993: 16).

A wide range of frames as defined above by Tannen, including both knowledge about specific word meaning as well as cultural experiences, are essential in the cognitive modeling of blends. In the case of trashcan basketball, semantic frames for the action of "disposal," as well as for the activity of "basketball" provide background knowledge necessary for construction of the blend. In the case of the Menendez Brothers computer virus, general relational frames such as the conspiracy frame, or the victim frame as well as specific frames for the original Menendez Brother trial are essential for meaning construction. In the blend "holding your nose while voting" which was employed in the political rhetoric of activist Michael Moore, Coulson and Oakley (2006) explain that understanding the blend involves framing voting as "an unpleasant but necessary chore." Finally, in an analysis of the blend "pregnancy by rape," Coulson (1997, 2002) describes the role of cultural frames for pregnancy in western society. In contrast to the conventional framing of pregnancy in western society as a situation of intention, action, and responsibility, Coulson argues that pregnancy by rape can be viewed as a blend between responsibility and trauma, and thus be framed as a situation of "punishment."

In sum, frames give structure to the interpretation of events at semantic, interactional/relational and even socio-cultural levels. Meaning construction in blends, especially humorous blends recruit frames at all levels of interpretation. The analysis of the blends below focuses especially

on the role of interactional frames that define the social meanings of the text, in the construction of meaning in on-line everyday humorous discourse.

4. The chicken scratch font

The chicken scratch font, presented in (1), is a blend produced in everyday interaction among fellow graduate students and was found humorous by the participants in the conversation. The scene is a coffee shop on campus. Akiko sits with her typed homework for a course on syntax. Andy sits with his handwritten homework. Katie walks up to them and comments on the neat appearance of Akiko's homework. Andy joins the conversation with the remark presented in (1).

(1) *Andy: I did mine in the chicken scratch font.*

The blend is constructed from two input spaces, a space for the general concept of typeface known as "font" and a space for a specific type of handwriting labeled "chicken scratch." As presented in figure 1, select elements are projected from each input space to create a novel font in the blended space. Projected from the font space are features such as printed modality and selectability. Projected from the chicken scratch space are characteristics such as illegibility and informality. Because the category of font is expanded to include a new member called 'chicken scratch,' this blend can be described as category extension (see Fauconnier and Turner 2002 for a more detailed discussion). This in itself is not uncommon and is not necessarily humorous. Fonts such as Comic Sans, Christina, and Lucida Handwriting are just a few examples of widely available fonts that blend printing and characteristics of handwriting. What does contribute to the humorous interpretation of this blend are the various incongruities, contradictions, and tensions compressed within the blended space.

First, in this example, elements with socio-cultural values at opposite poles are compressed in the blended space. This juxtaposition is strengthened by the "academic" framing of the utterance created by the conversational context. The participants of the conversation study within the same academic community and the conversation took place on campus.

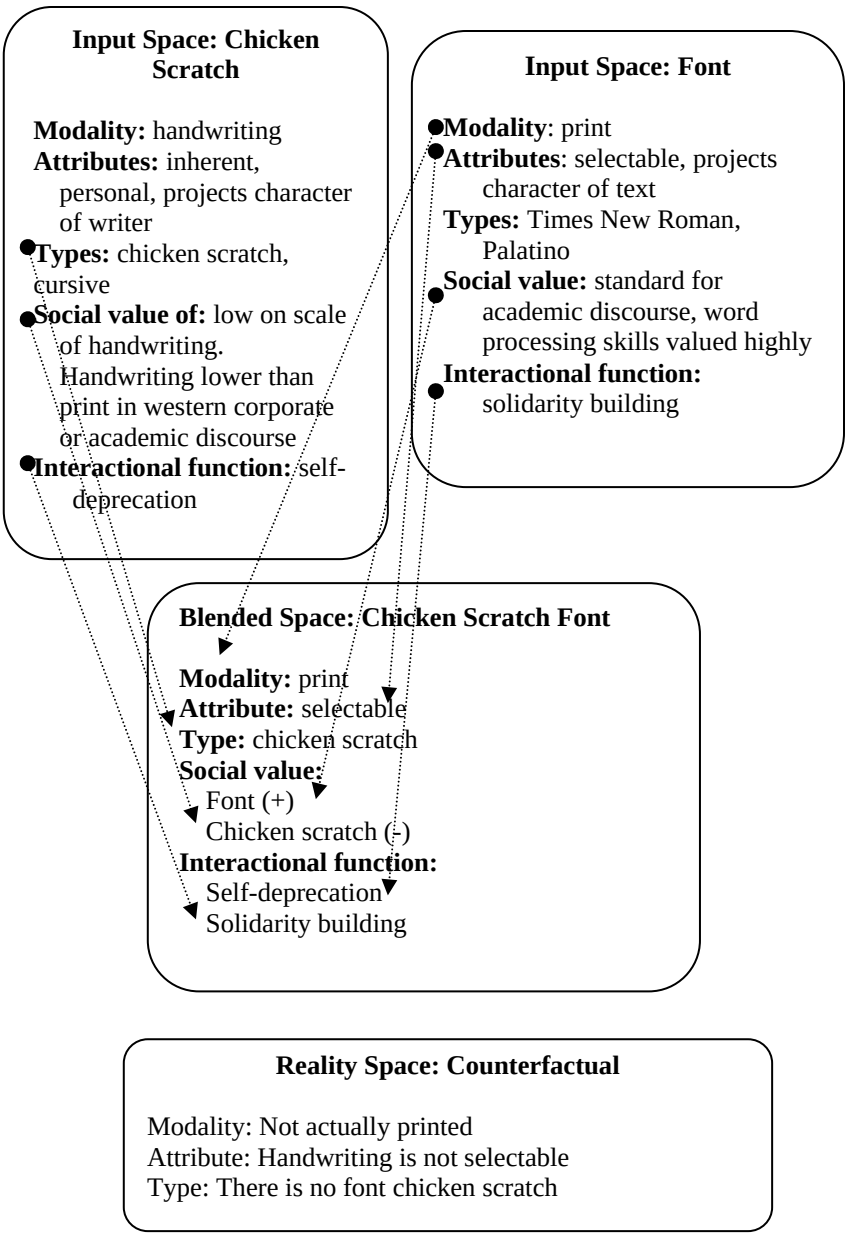

Figure 1. The chicken scratch font

In this setting, validation and membership is constructed through reference to academic issues and standards. Within this academic frame, word processing is valued as more official, up-to-date, academic, and sophisticated. Handwritten texts are given less validity and worth. And chicken scratch, also a blend that draws on projections from the animal world, is at the extreme low end of the scale within the handwriting space. The humor in this interaction is generated in part by exploiting the contrast or incongruity in values between these two modes. The undesirable, unacceptable type of orthography, chicken scratch, is placed within the more prestigious category of word processing fonts. Coulson has also pointed out that contrast in social values, although difficult to formalize, does often trigger humorous interpretation, "part of the humor … is due to the fact that the frames evoked in the source and in the target are structurally equivalent while their socio-cultural significance is quite different" (Coulson 1997: 250).

In addition, there are two framings simultaneously projected into the blend. Within the context of the academic community, reference by the speaker to his own handwriting as chicken scratch, is framed interactionally as self-deprecation. However, at the same time, the word processing frame, which signals co-membership among the participants, is also projected into the blended space. Recruitment of the academic frame aligns the speaker with the other participants and emphasizes membership and acceptance in the academic community, in turn framing the blend as a solidarity-building utterance. And thus the blend elevates a lower valued element to something that is valued and accepted by the group. That is, chicken scratch is elevated to a higher status by being placed within the organizing frame of word processing fonts. This serves to save the face of the speaker, license laughter, and thus mitigate any face threats that laughing at straight self-deprecation would incur. In this way, the composition of interactional frames in the blended space creates a tension between self-deprecation and self-elevation, and at the same time licenses the audience to laugh with the speaker.

Finally, context, as a reality space, also creates another layer of incongruity in this conceptual network. Although Andy states his work was done in the chicken scratch font, the participants can see that Andy's handwriting really does not look like chicken scratch, and they know that there really is no such font. In other words, the blended space is counterfactual in relation to the reality space, which perhaps serves to reinforce the overall frame of "play." Thus, the humor in the chicken scratch font blend is created through multiple layers of incongruities;

compression of elements with contrasting socio-cultural values, blending of interactional frames that signal both self-deprecation and solidarity, and a counterfactual contrast to reality. The blend reveals the role of conceptual and contextual aspects of the interaction in the construction of humorous meaning in everyday interaction.

5. The National Ushering Championships

A fictional event called the National Ushering Championships presented in (2) is another humorous blend, developed by Garrison Keillor in his monologue *The News from Lake Wobegon* during an episode of the popular radio program *A Prairie Home Companion* broadcast on public radio.

(2) *And it was for that reason at least in some part that the ushering team from Lake Wobegon Lutheran Church that Hjalmar Ingqvist was the captain of, the whole ushering team had gone out to Hawaii, for the National Lutheran Ushering Championships came to disappointment. The team is called the Herdsmen, and it was a Sweet Sixteen Tournament. There were sixteen teams of ushers, from all over the country, all of them Lutherans. You have nine men on a team, you've got the front four, you've got the three linebackers, the two deep safeties. And the challenge, the competition, is for each team to herd 500 Unitarians into a church, and put them through a Lutheran service, which I don't know if you've ever done but it's not easy. Well, they were all having a rough time, all of those herdsmen, – and they got eliminated in the very first round. They discovered that the church that they had to play their first round in was a church with four aisles and the herdsmen are basically a three aisle offense and they just never got their heads straightened out. They were skunked and they'd been picked to win. They were all disappointed, all nine of them. They went off afterward to have a few drinks. They sat in a bar and found a hotel and looked out on the beach at Waikiki.*[2]

The narrative above weaves a complex blended space throughout the passage. As presented in figure 2, this blend mines its elements from at least five input spaces, the Hawaii vacation space, the Sports space, the Church/Religion space, the Farming space, and the Lake Wobegan space. The five spaces are connected through an extensive network of cross-mappings, or analogical connectors that link similar elements, such as a stadium and a church (both are the location of the activity) and members of

a team with members of a congregation (both are participants in the activity). The blended space includes partial projection from each of the input spaces. The overall blend, the National Ushering Championships, is created by projecting the category sports championships from the sports space and then creating a new type of sporting event based on an activity from the religion space. The participants, Lutherans are projected from the religion space, and their personalities are projected from the Lake Wobegan/Minnesotan and farming spaces. The setting comes from the Hawaii space.

Similar to the chicken scratch blend, the compression of elements from the five different spaces results in multiple incongruities within the blend and creates a humorous situation. First, the extension of the sports category to the activity of ushering evokes a strong contrast of socio-cultural values. The blend compresses a fundamental incongruity between religious activity, which is sacred and spiritual and associated with values such as selflessness, piety, charity, and service to God, with the sphere of sports, which emphasizes competition, winning, and entertainment and in contemporary American society is often associated with greed, corruption, and material wealth. In other words, there is integration of the sacred and profane. Another incongruity arises from the mismatch between hard-working Lutherans from rural Minnesota, a region known for its harsh climate, and the setting of Hawaii, a tropical, luxurious, laid-back, vacation resort.

Another key aspect of the humor of the blend is the extent to which the details are developed. In the blended space where the novel game 'Ushering' is set up, the details of the game are specified, including notions of offense and defense from the sports frame, and roles such as linebackers and deep safeties from football, which activate cultural knowledge about one of the most American of sports, popular in the Midwest, known for aggressive play, large corporate sponsorship, and crowds of supporters. Aisles and sermons are drawn from the church/religion frame, as is the exaggerated rivalry between Unitarians and Lutherans, and finally the activity of herding from the farming frame. Embedded blends such as "ushering team" or "three-aisle offense" also strengthen the compression of contrasting elements. Such elaboration serves to strengthen the juxtapositions between sacred and profane, and Minnesota Lutherans and Hawaii through extensive compression of the analogical connections in the blended space.

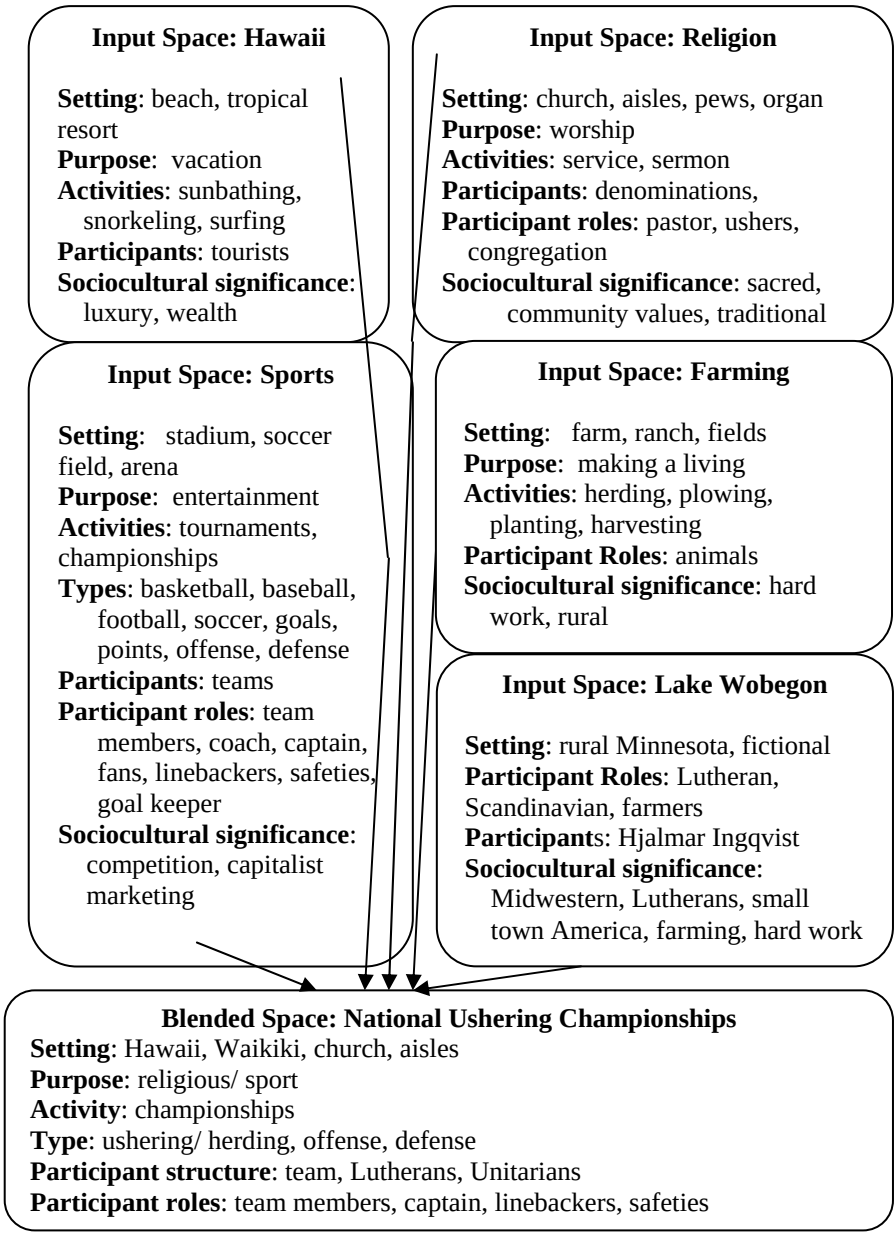

Figure 2. National Ushering Championships

Furthermore, alternate framings of the "seriousness" of ushering also highlight the contrast between religion and sports within the blend. The seriousness that is projected to the blend both from the religious space and from the sports space is not framed in the blend as a devout, reverential attitude toward ushering, it is framed according to the value of sports, which is accompanied by more brutal, goal-oriented qualities, tactics ("the Herdsman are a three-aisle offense") and even "disappointment" at failure. The framing of the ushering activity by serious commitment to victory creates a contrast with the actual social-value of ushering projected from the religious space, which is indeed serious but definitely not the central goal of the Lutheran faith, especially within any disagreements with Unitarians.

In this blend, the contrast in socio-cultural values is projected back to the input spaces for rhetorical purposes. The incongruities create a sense of ridiculousness, which is projected back to the church/religion frame to ridicule the seriousness of the Lutheran commitment, even to the activity of ushering. A sense of ridiculousness is also projected back to the sports frame to mock the almost religious devotion to winning, often associated with sports today. There is a dual sense of mockery that is constructed by this blend.

The interactional frames projected into the blend further strengthen the effect of double-sided mockery. The narrator is at once a member of two communities, the small town Midwestern community, symbolized by the setting of the narrative, Lake Wobegan, Minnesota and the reference to Protestants and farming, and the larger community of contemporary America, symbolized by reference to sports, especially football, and vacations to Hawaii. The blend draws from both input spaces, creating identification between the narrator and members of the audience from each group. Thus, the mockery projected back to both the religious and sports spaces can be framed in at least several ways by different members of the audience. The blend is at once framed as self-mockery (of either Lutherans, Minnesotans, small-town Americans, or sports fans), solidarity building through self-mockery, and solidarity building through mockery of others. It functions ingeniously to create a narrative that speaks to both Minnesotans and the general American public, building solidarity among both groups through a blending of different group identities shared by the speaker and the audience.

Finally, the counterfactual nature of the blend is also important in creating a humorous effect. The audience is able to laugh because there is no such thing as National Ushering Championships and because, contrary

to the seriousness with which ushering is portrayed, it is not actually the central focus of Lutheran religious practice. In sum, the humorous nature of the blend in the narrative of Lake Wobegon is a product of both conceptual and contextual elements. At the conceptual level, there is a simple juxtaposition of the sacred and the profane. At the interactional level, the integration of input spaces with contrasting socio-cultural values and differing interactional alignments contributes to a complex message of mockery, which is then further developed by rich detail elaborating the blend.

6. The Lithuanian-American orthography

A Lithuanian-American woman Danguole was planning a Secret Santa gift exchange with three friends. Her husband, Aurimas, who is Lithuanian was asked to pair up the participants. He sent out email messages (3) to each of the four participants announcing the recipients of each participant's present. His message to Danguole (4) was a humorous blend.

(3) *Welcome to Secret Santa Gift Exchange 2001! It is a live performance. I'm pulling names out of Danguole's hat NOW. Attention! – your match is …*

(4) *Velkom tu Sykret Senta gift ekscendz' 2001! It iz e laiv performans. Ai em puling neimz aut of jor het NAU. Atension! – jor miac iz ...*

This blend evokes a conceptual network with two input spaces, the Lithuanian language space and the English language space. Specific aspects from each input space are projected into the blended space. The lexical items and syntax are projected from the English space. The phonology and orthography are projected from the Lithuanian space. This creates the effect of a Lithuanian accent in the written mode. The blend can be seen as category extension in that it creates a new orthographic system. This is a message, not in English, and not in Lithuanian, but in Lithuanian-English.

Fundamental incongruities in the blend arise from compression of two languages and two different modalities, the spoken and written. Furthermore, there is a contrast in socio-cultural values between the more prestigious standard American English and a foreign accent, which is not seen as desirable, yet in this case is employed intentionally. The contrast is not between the two input spaces but between the input space (native-like

English) and the blended space (Lithuanian-English). The humor, which is characterized by both self-deprecation and co-membership again depends crucially on the blending of interactional frames. Through the use of Lithuanian phonology in the message, which was sent in this form only to Danguole who shares the Lithuanian identity, co-membership of Lithuanian identity is projected into the blended space. At the same time, the blend is framed as self-deprecating because it projects a Lithuanian accent of English, as if the author of the message also speaks with this accent. The self-deprecation is part of the emergent structure of the blend. However, it is within a frame of shared language identity that Aurimas makes fun of his own Lithuanian accent of English. Therefore, any potential face-threats that may result from self-deprecation are mitigated by the solidarity frame that simultaneously reinforces the participants' sense of co-membership. This example shows again how self-deprecation and solidarity are combined in blends to create and license humor by protecting the speaker's face.

In sum, the humor in this blend again shows parallels to the two previous examples. Humorous category extension is associated with a compression of elements with contrasting socio-cultural values and a projection of the interactional frames to create a balance of self-deprecation and solidarity. It is important to note that this blend is also counterfactual in relation to reality. In reality Aurimas is a highly proficient speaker of English who does not have a strong Lithuanian accent.

7. Conclusion

Analysis of three humorous examples of category extension based on blending theory reveals several common features of humorous meaning construction. One key feature of the blend is a compression of elements with clashing socio-cultural values. The role of contextual meaning, or projection of contrasting interactional frames is also crucial in humorous meaning construction. The blends evoke a delicate balance between frames of self-deprecation/self-mockery and solidarity or co-membership. The blends are also in counterfactual juxtaposition to the reality space. Thus, the theory of conceptual integration brings to light the process of humorous meaning construction that recruits a variety of knowledge frames, and compresses layers of incongruities to create just the right degree of cognitive and social tension that is an essential ingredient of humor.

Notes

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2. From *A Prairie Home Companion* (Oct. 21, 2000) [radio broadcast]. Copyright 2000 by Garrison Keillor. Used with permission.

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Mental spaces and mental verbs in early child English

Michael Israel

1. Representing representations

Metarepresentational predicates are constructions which profile a relation between a represented object of some sort (a thing, a proposition, or an eventuality) and a conceptualizing subject (someone who can perceive, imagine or otherwise experience what is represented). Words like *story, sculpture, tale* and *fib* are metarepresentational in the basic sense that they represent ways of presenting (or representing) some conceptual content to someone. Among the most basic metarepresentational predicates are verbs denoting mental states like those listed in (1), all of which are common in the spontaneous speech of children as young as 3 and 4 years old, or even younger.

(1) Perception: *see, look, watch, show, hear, listen*
Volition: *want, need, like, dream, hope, wish*
Cognition: *know, think, remember, guess, pretend, wonder*

Words denoting mental states pose a particular problem for young language learners. Mental objects, by their very nature, are invisible – they are private and subjective states or events in the minds of individual cognizers, unavailable for outside inspection. Children (and people in general) may have direct access to their own mental states, but the mental states of others can at best only be inferred from behavior. Given that no child ever directly experiences another person's thoughts or desires, how do children learn to reason about these sorts of things in the first place? And even if children start off knowing about different sorts of mental states – even if they have an innate "theory of mind" – how do children learn to associate particular mental state verbs with the particular invisible objects to which they refer? Of course, languages contain many predicates whose referents are not directly observable – words like *cause, function, virus,* and *negation*; but such words are rare even in the speech of 6 and 7 year-old

children, while comparably abstract mental state verbs appear early and are used quite frequently by children as young as 3 and 4 years.

Something, apparently, makes these verbs easy to learn – or at least, easy enough for normally developing 2 and 3 year olds to learn. My idea in this paper is that this something is discourse pragmatics, and that, at least in this part of the lexicon, pragmatics comes before semantics or syntax. I will argue that certain pragmatic abilities not only precede, but in fact provide a sort of constructional groundwork or scaffolding (cf. Johnson 1999) for the emergence of genuine semantic and meta-semantic competence.

I begin in section 2 by drawing a distinction between two major uses of mental state verbs: depictive uses, in which the verb simply denotes a mental state, and discursive uses, where the verb serves a performative (or quasi-performative) function. Building on earlier empirical work by Bartsch and Wellman (1995) and Diessel and Tomasello (2001), section 3 presents corpus data showing a strikingly regular pattern of development in the metarepresentational lexicons of 7 English speaking children. Children consistently master discursive uses of these verbs before they produce truly depictive uses. I take it that children's emerging understanding of mental states may depend in some way on their emerging competence with discourse pragmatics, and I suggest that this development is an instance of what Johnson (1999) calls "constructional grounding." In section 4 I pursue this possibility, drawing on Mental Space Theory (Cutrer 1994; Fauconnier 1994, 1997) to represent the relations between the discursive and depictive uses, and to explain how children's mastery of the former may facilitate their acquisition of the latter.

The observations here suggest that some "common sense" semantic concepts (cf. Israel 2005) are "usage-based" (Langacker 2000; Tomasello 2003) in much the same way that grammar is, in that both are grounded in the lived experience of linguistic usage.

2. Some uses of mental state verbs

The syntax and semantics of mental state verbs yield constructions of dazzling complexity. Syntactically, since these verbs take verbal and clausal complements, they allow for recursively embedded constituent structures, and thus for layered conceptualizations of conceptualizations. Semantically, these verbs refer to entities that can never be objectively apprehended, since they are themselves modes of apprehension. And pragmatically, since these verbs profile a point of view on a proposition or

a state of affairs, they create referentially opaque contexts. As the examples in (2) illustrate, sentences composed of such verbs can quickly compound complexities (a & b are from McCawley 1981: 338; c is attributed to Alan Greenspan in *The Economist*, May 6, 2000, p. 79).

(2) a. Doreen dreamed that Bruno thought she admired him.
b. Jonathan hopes that I'll want to try to believe that he has reformed.
c. I know you believe you understand what you think I said but I am not sure you realize that what you heard is not what I meant.

These sentences are complicated because, among other things, they involve multiple conceptualizers and multiple perspectives on a single proposition. Sentence (2a) features two perspectives on the proposition *p* 'that Doreen admired Bruno': first, the complex proposition *q* 'that Bruno thought *p*', and second the super complex proposition *r* 'that Doreen dreamed that *q*'. The example in (2b) also involves just two conceptualizers, 'Jonathan' and 'I', but presents its core proposition, 'that Jonathan has reformed,' embedded under a stack of attitudes – in a hope for a desire for an effort for belief.

The syntactic and semantic complexity of these examples reflects the fact that mental state verbs are prominent sorts of *space builders*: constructions which "establish a new [mental] space or refer back to one already in a discourse" (Fauconnier 1994: 17). A mental space is, essentially, a partial, partitioned representation of a perceived or imagined scenario (cf. Coulson 2001; Cutrer 1994; Dinsmore 1991; Fauconnier 1994, 1997). Within Cognitive Grammar, a mental space is a sort of minimal unit of conceptualization as it provides the basic viewing frame for any conceived proposition (cf. Langacker 2001: 144). In effect, mental state verbs denote the things (mental spaces) which contain the things (propositions or scenarios) denoted by ordinary finite clauses. This is why mental state verbs typically take clausal complements – and also why they can be recursively embedded to such dizzying effect in examples like those in (2).

I will return in Section 4 to the question of how young children understand the space building properties of mental state verbs – for now it is enough to note that most of these complexities are simply lost on them. Most children (in fact, most people) never produce and rarely hear sentences quite like those in (2). While children as young as 2 or 3 years do use mental state verbs in a variety of complex constructions, these constructions seem to be learned on a verb by verb basis (Limber 1973;

Bloom et al. 1989), and typically do not to involve any "genuine reference to psychological states" (Bartsch and Wellman 1995: 31). They first emerge rather as an assortment of inflexible formulaic constructions (Diessel and Tomasello 2001; Tomasello 2003), serving a variety of basically pragmatic functions: as epistemic stance markers (e.g., [*I think* X], [*I guess* X]); as attention-getters (e.g., [*look at* X], [*(did you) see* X]); and as indicators of illocutionary force (e.g., [*I wanna* X] for requests, [*(do you) wanna* X] for offers, and [*I wonder* X] or [*do you know* X] for questions). Because these constructions effectively modify the performance of a speech act rather than the content of what is said, utterances which feature them involve "discourse performative" or "discursive" uses of verbs, and may be sharply distinguished from ordinary "depictive" or "referential" uses of the same verbs.

The dialogue in (3) between the 4-year-old Abe and his mother (Kucaj 1976) illustrates the distinction between discursive and depictive uses of a single verb. Syntactically, the three uses of *know* here appear quite similar, but pragmatically, they serve very different functions.

(3) Abe's Dream 4;0.16

*MOT: do you want to tell me another dream?
*ABE: yeah the first one is <how can I fly without any wings> ["]?
*ABE: this guy said <how can I fly if I don't have any wings> ["]
and the next morning he growed@n wings so he could fly
he was just a person and his wings kept growing
so the next morning he flied forever and he couldn't stop
and **know what**?
*MOT: what?
*ABE: the next morning the mommy people said <kid # I'm going >
["] and [/] and [/] and **the kid knowed that** because the
Mommy telled him before **did you know that**?
*ABE: that's the end.
*MOT: that's the end of that one?
*ABE: yeah wasn't that one short?

The turn-final questions *know what?* in line 7 and *did you know that?* in line 11 may be interpreted literally here, but Abe's purpose in posing them is not so much to request information about his mother's knowledge state as to engage her attention in what he is saying. The word *know* in these uses thus does not really denote a mental state, but serves primarily as a

device Abe uses to manage his narration. The assertive use of *know* in line 10 is quite different. Here we find a specific 3rd person subject expressed with a full NP *(the kid)*, the verb creatively inflected for past tense, and a clear reference to a situation in the story as opposed to the immediate discourse. The verb is purely depictive: it plays no role in Abe's narrative delivery, but contributes a proposition to the narrative itself.

These examples suggest that one might draw a simple, binary distinction between truly referential (depictive) uses of verbs and other, more pragmatically loaded (discursive) uses; in practice, however, the two uses may shade into one another. Diessel and Tomasello (2001) in fact distinguish two sorts of (what I call) discursive uses for complement-taking verbs – "performative" uses, in which the verb "serves primarily to coordinate the interaction between interlocutors" but retains some propositional content (2001: 106), and purely "formulaic" uses, in which the verb serves as a kind of clausal operator and lacks any propositional content. This distinction is held to be continuous rather than categorical, so that many utterances are in fact equivocal between the two. Thus in the passage above, while the uses of [*know what*] and [*did you know that*] are stereotyped in both form and function, their compositional meanings are also perfectly felicitous in this context, and Abe (or any other speaker) may be more or less dimly aware of these meanings on different occasions of use.

Historically, of course, the discursive uses of words like *know*, *think*, and *see* derive from their more basic depictive meanings (cf. Thompson and Mulac 1991; Traugott 1995). An expression like *know what?* works as a way of directing a hearer's attention to an impending assertion precisely because it literally poses a question about what the hearer knows. Since a basic condition for asserting is that the hearer should not already know what is to be asserted, a question like *(do you) know what*? can be used to check that an assertion will be felicitous. Once this use has been conventionalized, however, its discursive function can take on a life of its own, and some formulaic uses are so entrenched that they are effectively grammaticalized discourse markers. Traugott (1995) cites this sort of development as a particularly clear example of subjectivisation in grammar.

But while the discursive use of mental state verbs is historically derivative, it appears to be the primary use in ontogeny. Previous work has consistently found that young children use verbs like *know*, *think*, and *want* first and most frequently in highly formulaic, discursive constructions (Shatz, Wellman and Silber 1983; Bartsch and Wellman 1995), and only gradually extend them to fully depictive uses.

One likely reason for this pattern of development is that discursive uses of mental state verbs are typically more frequent than depictive uses, both in adult conversation (Thompson and Mulac 1991) and in child directed speech (Diessel and Tomasello 2001). While the need to direct a hearer's attention to some interesting proposition is a constant feature of ordinary conversation (it is the essence of illocution itself), the need to express a proposition specifically about a particular mental state only arises under very specific discourse circumstances. Thus children may learn the discursive uses first simply because they are more familiar and generally more useful than depictive uses. But if the pattern were due to frequency alone, the relationship between discursive and depictive uses would appear from the child's point of view to be purely coincidental, and this would leave unexplained the close semantic and pragmatic links which seem to hold between these uses.

Another possible reason children might prefer discursive over depictive uses is that they may simply not understand what it is that mental state verbs depict. A large body of research shows that children between the ages of 4 and 5 years undergo dramatic changes in their ability to understand and reason about other people's mental states (Gopnik and Meltzoff 1998; Hale and Tager-Flusberg 2003; Perner 1991, 1994; Wimmer and Perner 1983; for an overview see Wellman, Cross and Watson 2001). The basic finding is that children younger than 4 years consistently fail standard "false-belief tests," which require them to attribute a belief to someone which they know to be false. And if a child cannot understand that different people can differ in their beliefs, and that people can believe things which are actually false, then she cannot fully understand what it would mean to *think* something is the case as opposed to *knowing* it is so. On the other hand, there is substantial evidence that children's theory of mind develops over several years, and that before the age of 4, children do understand other people's intentions and desires, and are at least implicitly aware of their beliefs (cf. Tomasello 1999). Indeed, Bartsch and Wellman's results already show that children begin to use some mental state verbs referentially before the age at which they would be expected to have a fully developed theory of mind. I thus conclude that neither frequency nor functional readiness are in themselves sufficient to explain the relation between discursive and depictive uses of mental state verbs in early development.

I suggest that children's earlier, pragmatically rich uses of mental state verbs provide the foundation for their later understanding of these verbs' referential content. I call this *the performative hypothesis*, since the basic idea is that children learn the meanings of these words based on an

understanding of the ways they are used to perform particular sorts of speech acts – acts which are themselves linked in important ways to the mental states of speech act participants. I view the process here as a special case of what Christopher Johnson (1999: 1) calls "constructional grounding," in which "a sign that is relatively easy for children to learn serves as the model for another more difficult sign, because it occurs in contexts in which it exemplifies important properties of the more difficult sign in a way that is especially accessible to children" (cf. Israel, Johnson and Brooks 2000).

The idea is that discursive uses of mental state verbs are not just easier than depictive uses; they actually help children understand what it is that the depictive uses depict. Since speech acts in general serve to coordinate joint attention and activity among conversational participants, children's participation in such acts requires an implicit understanding of the ways other people's beliefs and desires can relate to their actions. The discursive uses of mental state verbs depend on this implicit understanding and so effectively highlight the otherwise invisible subjective states of conversational participants, even when these verbs do not in fact refer to these mental states as such. Once children have mastered these discursive uses and developed entrenched representations of the communicative acts which they perform, it is a relatively minor metonymy for these verbs to shift from the performance of a discursive act to the denotation of a mental state associated with that act.

3. Building a metarepresentational lexicon

Previous work on the acquisition of mental state verbs has not viewed their discursive uses as being of particular theoretical significance. Bartsch and Wellman (1995), for example, are mainly interested in the ways children actually refer to mental states, and so their main reason for identifying discursive uses is to eliminate them from their data. Similarly, Diessel and Tomasello (2001) treat the formulaic uses of these verbs as, for the most part, semantically and syntactically empty, and while they posit a continuum of uses from the formulaic to the fully propositional, they are mainly concerned with the syntactic problem of how children learn to use clausal complements rather than the lexical semantic question of how they learn the concepts denoted by mental state verbs. In this section I examine the relationship between discursive and depictive constructions in the acquisition of mental state verbs in general, and I argue that this

relationship is both systematic and unidirectional: discursive uses regularly precede depictive uses because the discursive uses effectively show children what these verbs depict.

Data is drawn from seven corpora of English speaking children from the Childes database (MacWhinney 1995). Table 1 summarizes the names, ages, references, and total number of verb types found in each corpus. Ages for the children are given as YEARS;MONTHS, with months rounded up from day 15, where days are given in the corpora, and the children are listed, roughly, in order of the age spans covered by their respective corpora.

Table 1. The seven corpora of ReVerb

Child	**Age Range**	**Verb Types**	**Reference**
Eve	1;6-2;3	223	Brown 1973
Naomi	1;3-3;9	264	Sachs 1983
Peter	1;9-3;2	286	Bloom 1974
Nina	1;11-3;4	325	Suppes 1974
Sarah	2;3-5;1	407	Brown 1973
Adam	2;3-5;2	428	Brown 1973
Abe	2;5-5;0	548	Kuczaj 1976

These seven children are similar in many respects. They are all first or only children; they are all monolingual; they all speak American English; and they were all recorded at regular intervals for at least nine months, mostly in the 1960's and early 1970's. For the present study what is most striking, however, are the similarities in the verbs they use, and in the ways they use them. The evidence suggests a strikingly consistent pattern across the most common verbs of belief, desire and perception whereby discursive uses are regularly acquired before depictive uses.

Table 2 shows the total number of instances of the 15 most frequent lexical verbs in the corpus, organized by child (*have, be, do* and the modal auxiliaries are excluded). While there are substantial individual differences in the linguistic abilities of these children, what is striking about these numbers is their overall consistency: verbs which are frequent in the speech of one child are also frequent in the speech of others.

Table 2. Frequent lexical verbs in child English

	Eve	**Nao**	**Nina**	**Peter**	**Sarah**	**Adam**	**Abe**	**totals**
1. go	454	465	1,288	2,120	1,287	3,297	2,150	11,061
2. want	270	375	1,120	653	1,082	1,471	1,526	6,497
3. get	219	264	431	870	1,087	1,314	1,776	5,961
4. put	289	162	750	833	397	1,263	676	4,370
5. see	136	110	241	331	431	829	811	2,889
6. make	133	68	310	159	587	743	623	2,623
7. take	75	75	355	373	154	641	255	1,928
8. know	8	39	60	107	322	457	862	1,855
9. come	90	39	150	255	258	514	471	1,777
10. eat	113	106	375	72	87	326	588	1,667
11. look	29	104	181	187	195	516	427	1,639
12. play	69	53	100	187	125	531	491	1,556
13. say	37	50	90	65	209	331	449	1,231
14. think	13	18	29	65	129	241	501	996
15. fall	56	40	157	100	72	288	195	908

One expects some variation in these numbers due to differences in the sorts of things different children tend to talk about, or the sorts of contexts in which the children were recorded; however, the verbal lexicons of these children are broadly similar, and the differences that do emerge seem to reflect the different ages of the children. Thus for children 3 years old or younger (i.e., Eve, Naomi, Nina and Peter) the mental state verbs *know* and *think* are still comparatively rare, but they are much more frequent among the older children (Sarah, Adam, and Abe).

Table 3 lists the 18 most frequent mental state verbs, the total instances found for each in the corpus as a whole, and for each, the estimated average age at which the children have a productive use. The estimate here is based on the ages of all seven children at the time of their third distinct, non-imitative use. For children who used a verb only twice, their third use was estimated as one month later than that of their second use; for those who used a verb only once, the third use was estimated as two months later than their first. For each verb, any child whose "third" use came more than two months earlier or two months later than all the other children was treated as an outlier and excluded from the calculation. This may well underestimate these children's early abilities with these verbs, but it does at least give some sense of the order in which these different verbs tend to be acquired.

Table 3. Mental state verbs in child English

Perception		**Desire**		**Belief**	
see	2;1 - 2,889	*want*	2;1 - 6,497	*know*	2;5 - 1,855
look	2;1 - 1,468	*like*	2;2 - 901	*think*	2;7 - 996
show	2;4 - 468	*need*	2;2 - 856	*remember*	2;9 - 138
watch	2;5 - 485	*dream*	3;2 - 75	*pretend*	3;0 - 116
hear	2;8 - 301	*hope*	3;3 - 53	*guess*	3;1 - 138
listen	2;8 - 58	*wish*	3;5 - 50	*wonder*	3;4 - 76

A relatively small number of verbs from each of these domains are found in children's spontaneous speech, but from each there are one or two which appear very early and are among the most frequent verbs in the corpus. It appears that children start using mental state verbs as soon as they begin to combine words, if not earlier. In general, verbs of perception and verbs of desire appear at about the same age, and are learned before the first verbs of belief, but the domain of perception is the first to be elaborated by a variety of different lexical verbs. Belief verbs are clearly the last to emerge, but they quickly become very frequent, and once the first verbs are established, children rapidly acquire a variety of forms with very different meanings. If this sample is at all representative, it appears that most children use six or more distinct expressions in each of the domains of perception, desire and belief well before their 4th birthday.

But the important story here is not how many verbs the children are using, but how, precisely, they are using them. This story cannot be told with numbers alone. It requires a close examination of the different uses of different verbs in each of the different children. The performative hypothesis predicts that childrens' first uses of mental state verbs should be broadly discursive in function, and that unequivocally depictive uses will only emerge later. Since discursive uses are formulaic and stereotyped in both form and function, if children really are learning these verbs in discursive constructions first, their early usage should be highly consistent and repetitive.

A variety of formal criteria distinguish discursive from depictive uses (cf. Diessel and Tomasello 2001; Thompson and Mulac 1991). Typically, discursive uses involve either present tense assertions with a 1st person

subject, or present tense questions with a 2nd person subject; the subject argument is either implicit or expressed by a pronoun; the verb is uninflected, and appears without auxiliaries, adverbs or other modifiers; and where the verb occurs with a complement clause it does so without any complementizer. Any use of a mental state verb which fits all these criteria, and where the verb is not used in a way that is clearly contrastive, is at least equivocal between a discursive and a depictive use.

The functions which discursive uses serve vary from verb to verb and frame to frame, but some common plot lines may be discerned: in general, verbs of perception are used to coordinate joint attention between conversational partners (*did you see that?, look at me!)*; desire verbs are used to perform superficially indirect requests or offers (*I want that, do you want some?*); and belief verbs are used as hedges or stance markers (*I think so, I guess*) or else as formulaic adjacency pair constructions (*I don't know; know what?).* Pragmatically, all of these uses count as performative in the broad sense that they contribute to the performance of an utterance rather than (or in addition to) the formulation of a proposition. Strictly speaking, a performative utterance is one which performs an action by virtue of describing it – one in which the mere representation of a situation itself causes that situation to obtain (cf. Searle 1989; Sweetser 2000). More generally, the notion of performativity may extend to uses in which a verb does not depict anything outside of the speech act situation in which it is used, but rather refers to (some aspect of) the act it performs. In this sense, the performative hypothesis predicts that early uses of mental state verbs should serve clear pragmatic functions in the performance of communicative acts; however, it also predicts that early uses of actual speech act verbs should *not* be limited to discursive functions.

The basic idea is that children are able to learn the discursive uses of mental state verbs easily because they already have a good intuitive understanding of the discursive acts in which they are used. So by the time children are using mental state verbs like *want* and *think* discursively, they should have no trouble using simple speech act verbs like *say* and *tell* depictively. Indeed this seems to be the case. Both of these verbs are common in the speech of children as young as 2 years – *say* somewhat more so than *tell* – and as Diessel and Tomasello (2001) report, children consistently use these verbs flexibly in complex complement constructions well before they master comparable uses of any other verb. Indeed, there appear to be no particular formal or pragmatic constraints even on children's earliest uses of these words: for example, Eve's first uses of *tell* include utterances of *"he told me", "because I have a tell you",* and

"*Fraser tell me ≠ I have some glasses"*, all within one hour at the age of 2;1. As it turns out, this easy ability to switch between morphological forms and syntactic subjects is strikingly absent in children's early uses of actual mental state verbs.

Children's first verbs of perception, *see* and *look*, often appear before the age of 2, and are used primarily or exclusively as devices for managing joint attention. As the examples in (4) suggest, they occur sentence initially, are uninflected, have an implied 2nd person subject, and usually take a demonstrative object (e.g., *that, there*). Most children produce many utterances which follow this pattern before using these verbs in any other way.

(4) Early Uses of *look* and *see:*

Peter 2;0.7	look at that one # look at that at one.	Sarah 2;3.5	see dolly.
		Sarah 2;3.7	see dere # Mommy.
Peter 2;0.7	look at that right there.	Sarah 2;3.7	see dat.
Peter 2;0.7	look at down there.	Sarah 2;3.19	see ball.
Peter 2;0.7	look in there # xxx.	Sarah 2;4.10	see moon?
Peter 2;1.21	would you look at these.	Sarah 2;4.26	I see kiki@c.
Peter 2;2.14	look for my pencil.	Sarah 2;5.15	buba@f I see buba@f.

Peter and Sarah effectively use these verbs to guide the gaze of their audience: these uses do not just depict events of seeing and looking, they make those events happen. And children are very consistent in this usage. Peter produces close to fifty utterances with *look* like those in (4) before he uses the verb with a 3rd person subject or any marked inflection as in (5). Similarly, Sarah produces over eighty utterances with *see* like those in (4) before producing any with non-present reference or a 3rd person subject, as in (6).

(5)	Peter	2;3.21	this is lookin(g) a in the telescope.
	Peter	2;6.14	and a bear went over the mount(ain) # bear went over the moun(tain) to look down there.
	Peter	2;10.21	its xxx looked around # and do want something to hang on like that # like that.
	Peter	2;10.21	I wonder who's lookin(g) at the baby too.

(6)	Sarah	3;0.27	who go see a xx.
	Sarah	3;1.10	he saw the <&fa> [//] <&fu> [//] <&fa> [/] farmer.
	Sarah	3;2.2	he see talkin(g).
	Sarah	3;2.10	I saw it # somewhere.
	Sarah	3;2.23	he's maybe see two.

This pattern is consistent across all seven children in this corpus: while age of acquisition varies widely, all children use these verbs first and primarily with 1st person subjects in statements and 2nd person subjects in questions, in contexts where they serve to coordinate a speaker and hearer's joint attention to objects or actions in the immediate context. Only later do children use these verbs to denote acts of seeing or looking performed by a 3rd person or directed to something beyond the context of speech.

Children's early uses of desire verbs are, if anything, even more consistent than their uses of *look* and *see*. The earliest uses of *want,* for example, like Eve and Naomi's below, feature a present tense verb with an implicit or pronominal 1st person subject, and express a desire – or really, a demand – for immediate action of some sort.

(7) Early uses of *want* in directives

Eve 1;6.	I want Mommy read.	Naomi 1;9.26	want juice.
Eve 1;6.	want Mommy out.	Naomi 1;10.3	I want shop.
Eve 1;6.	want down.	Naomi 1;10.3	want it off.
Eve 1;6.	want Mommy letter.	Naomi 1;10.3	want this.
Eve 1;6.	want watch.	Naomi 1;10.10	wan(t) get down.
Eve 1;6.	want lunch.	Naomi 1;11.11	I want coffee.
Eve 1;6.	want bibby.	Naomi 1;11.21	do-'nt want it.

These examples are, in fact, syntactically diverse, featuring a range of complement types which include nominals (e.g., *lunch, bibby, juice*), adverbials (e.g., *out, down, off*), verbs (*shop, get down*), and even small clauses (*Mommy read, Mommy out, it off*). But in other respects these uses are very rigid. The main verb is consistently uninflected, with a (usually implicit) 1st person subject, and reference to an immediate present state. Pragmatically, these do not seem to be real assertions: the verb does not just denote a desire but actually enacts a demand, and in this respect it is less like a lexical verb than a discourse marker or an illocutionary force indicating device. Some children also use *want* in present tense questions

with 2nd person subjects (e.g., *do you want* X), but here again, the verb does not so much depict a mental state as it marks the performance of an illocutionary act, in this case an offer. Of course, the mental state which the lexical verb *want* denotes (at least in the adult language) does play a prominent role in the sorts of speech acts which the discursive *want* is used to perform. Specifically, it is a felicity condition for any act of requesting that the speaker must want what is requested, and it is a felicity condition for any act of offering the addressee might want what is requested.

Interestingly, when Eve and Naomi do begin to describe other peoples' desires using *want*, as in (8), they often do so in reference to actors present in the immediate context, including both real discourse participants (as in Eve's mentions of Fraser, Papa, Georgie) and imaginary characters in a pretend scene (as in Naomi's reference to the kangaroo).

(8) Later uses of *want* in descriptive contexts:

Eve 1;9. Fraser want more coffee.
Eve 1;10. Papa want to eat.
Eve 1;10. Papa want xxx apple.
Eve 1;10. Sue want sugar?
Eve 1;10. Pop want cheese sandwich.
Eve 1;10. Fraser want something else.

Nao 1;11.21 I want peanut butter.
Nao 1;11.21 kangaroo want peanut butter.
Nao 2;1.9 uh Georgie want the blanket?
Nao 2;1.17 do you want it?
Nao 2;1.17 what-'does baby want?
Nao 2;1.17 you want that.

These examples suggest that when children do begin to use *want* depictively, they tend to do so in contexts which highlight the roles which 'wanting' plays in acts of giving and receiving. This seems natural if, as appears to be the case, desire verbs are first used to mark the performance of offers and requests.

Other desire verbs tend to be even more limited in their uses. The verbs *wish* and *hope* are rarely used before the age of 3, and then only in the most formulaic of constructions – with 1st person subject, simple present tense, and a clausal complement denoting a positively framed potential situation. These uses contrast subtly with the discursive uses of *want*: the complement of *wish* is an expressed desire which the speaker does not expect her hearer to fulfill; the complement of *hope* denotes a proposition construed as preferable to some potential bad alternative (i.e., what is *hoped not*).

(9)	Sarah	3;6.30	*I wish* it's valentine.
	Sarah	4;0.28	*I wish* Tommy had to # huh?
	Sarah	4;8.20	yeah # *I could wish* it could fly.
	Sarah	4;8.20	*I wish* we had some glue to go like this (a)n(d) make it # ...
	Sarah	4;11.19	oh # *I wish* I had gold [= gold crayon].
(10)	Adam	3;6.9	*I hope* so myself too.
	Adam	4;0.14	*I hope* he won't bother you.
	Adam	4;3.13	*I hope* my cat friends are alright.
	Adam	4;4.0	*I hope* dis water # dat's another.
	Adam	4;9.2	*I hope* I put my sponge in here.

In cases like these one cannot assume that children do not understand the meanings of the verbs *wish* and *hope*: the uses are, for the most part, grammatically well-formed and pragmatically well-motivated. But there is also no reason to assume that children do understand these meanings either, since the usage here is largely non-compositional. Children learn these constructions as discourse idioms, and so long as they follow the pragmatic conventions on their use, they are not obliged to pay any attention at all to their lexical semantics. Indeed, the fact that children do not use these verbs in other contexts or with other types of subjects suggests that they lack a general understanding of what it means for someone to hope or wish for something independently from the expression of a desiderative speech act.

Verbs of knowing and believing tend to enter children's speech shortly after verbs of desire (cf. Bartsch and Wellman 1996). Most children begin to use these verbs sometime in their third year, though none are very frequent until the fourth or fifth year. The children examined here all start off with the same set of formulaic uses for *know*, with 1st person subjects in assertions and 2nd person subjects in questions, in expressions like *I know*, *I don't know*, and *(do you) know wh-?* Each of these uses serves a relatively narrow discursive function, and each seems to be learned as an idiom. The early examples in (11) from Eve, Peter and Nina show how consistent these uses are across children.

(11)	Eve	1;8.	*know where*?
	Eve	1;11.	*you know* I said.
	Eve	2;1.	because I [/] *I don't know where* [/] where you put it.
	Eve	2;3.	&n *do you know*.

Peter	2;3.0	this *I know* up in the sky xxx .
Peter	2;4.14	*know what* this is.
Peter	2;4.14	I said *don't # know[?] where* [?] Daddy is.
Peter	2;5.0	*know what*'s in here.
Nina	2;1.29	*I don't know* xxx.
Nina	2;3.18	*you know what* these things are called?
Nina	2;4.26	*know where* my monkey is?
Nina	2;4.26	*know what* my eating # Mommy?

Early uses of *think* are even more consistently formulaic. Nina's uses, in (12), all have a notional first person subject, are in the simple present tense, and serve to hedge or qualify an expressed proposition. This is the most common use of the word *think* not just for young children, but also for adults, reflecting the fact that speakers in general have many more occasions to hedge their assertions than they do to talk directly about thinking or other people's thoughts.

(12)	Nina	2;0.3	*think* he's crying because he lost his mittens # isn't he?
	Nina	2;2.6	*think* that a llama.
	Nina	2;2.6	*I think* that's a dog llama.
	Nina	2;2.28	*think* it's a little bear.
	Nina	2;3.5	*think* the mother's here.
	Nina	2;3.14	*I think* dolly's thirsty.

And it's not just the very high frequency verbs like *know* and *think* that get learned in these idiomatic ways. The verb *remember* is a case in point. The examples in (13–15) are typical of the ways all seven children use this verb.

(13)	Nina	2;1.29	Mommy # *remember* my lamb.
	Nina	2;2.12	*remember* that party.
	Nina	2;2.28	*remember* my dolly?
(14)	Eve	2;0	Mom # *remember* we went to [/] to Rhode Island?
	Eve	2;1	*remember* we goed to Peabody School and have +...
	Eve	2;2	*remember* we had some macaroni for supper?

(15)	Adam	2;3	(re)*memeber* Bozo?
	Adam	2;3	(re)*memeber* David?
	Adam	2;8	Mommy (re)*memeber* chair tricks?

In this construction *remember* does not denote a mental state so much as it induces one. As in the "attention getting" uses of *look* and *see* above, the verb here is used sentence initially with an implied 2nd person subject and present time reference, and serves to coordinate joint attention on a discourse topic. The difference seems to be that while *look* and *see* demand attention for some immediately present visual stimulus, *remember* directs attention to some shared past experience.

The first verbs of belief to be used flexibly and contrastively are also the ones which are used most frequently: *think* and *know*. The examples in (16–17) illustrate some early uses from Nina and Abe of *think* and *know* with third person or plural subjects, past tense marking, negation, and other overt indications that the children really are referring to and contrasting their own or other people's mental states of knowing and thinking.

(16)	Nina	2;10.13	we # *we thought* we could play # play in my # our new house.
	Nina	2;10.13	you read me a bedtime story *I thought.*
	Nina	2;10.28	strawberrys # *you think? ...I think* bananas.
	Nina	2;11.6	oh # where do *you think* they are?
	Nina	3;0.24	*I think* it's bad ... *they think* it's bad.
(17)	Abe	3;2.1	... hey this is for Todd there you could put this on this side and that on this side so *he knows* it's a flag ok?
	Abe	3;2.1	*you can't know* what it is it's for a surprise.
	Abe	3;8.11	yeah *I wan(t) (t)a know* the rocks Mommy *doesn't know*.
	Abe	3;8.11	*Joey's mother knows* our name.
	Abe	3;9.6	*...Momma doesn't know* where the saw is and *you don't know* where my saw is and *I don't know* where my saw is.

Abe's last utterance here, with three tokens of *know* and three distinct subjects, is not only referential and contrastive, it reads like a paradigm, almost as if Abe were conjugating the verb. At the very least, the utterance

is clear evidence of a flexible subject slot for an [X *don't know*] construction.

Even when children do begin to use these forms more flexibly, the fixed formulaic uses continue to predominate in usage. While high frequency verbs like *think* and *know* are occasionally used flexibly and contrastively by 3 years, children still tend to learn new mental state verbs first in formulaic and quasi-performative frames. By the time Abe, Peter and Adam begin to use the verb *wonder*, they are producing verbs like *think*, *know*, and *want* at least semi-flexibly, with occasional progressive, past tense, and negative inflections. Still, the use of *wonder* remains a stubbornly formulaic construction for "indirectly" posing a question, as seen in (18–20).

(18)	Abe	3;8.1	*I wonder wh*at that kind of bed was called.
	Abe	4;2.9	*I wonder wh*y there's so many people that are getting four.
	Abe	4;3.7	*I wonder wh*ere Mommy is.
	Abe	4;6.27	*I wonder* [#] Dad [#] where's the garage sale gon (t)a be?
(19)	Peter	2;10.21	*I wonder wh*o's lookin(g) at the baby too.
	Peter	2;10.21	got ta put it in <&t> [//] like # *I wonder wh*at +...
	Peter	3;1.21	## *I wonder if* I can get it there.
(20)	Adam	3;8.26	*I wonder wh*ere the rest of it is # Mommy?
	Adam	3;8.26	*I wonder wh*at dis is?
	Adam	3;8.26	Mommy # *I wonder wh*ere the cat is.
	Adam	3;8.26	*I wonder # h*ow you open it.

In fact, it is misleading to think of these as examples of an "indirect" question construction. While the "literal" meaning of *wonder* makes it useful for asserting that one is interested in an answer of some sort, and thus for indirectly posing a question, it is precisely this literal meaning which children appear not to understand. What children do understand is that *I wonder* introduces a question. The construction here is thus the opposite of indirect – it is an explicit indicator of an interrogative illocutionary force, and its use is essentially performative rather than oblique.

While most mental state verbs, and especially most belief verbs, are used first and most frequently in formulaic constructions with clearly discursive functions, the verb *pretend* seems to be a striking exception to this tendency. Children typically begin to engage in various sorts of pretend play, including joint pretense, sometime around 18 months, and by the time they begin to talk about pretending, they do not appear to be particularly limited in the sorts of constructions they can use. Consider Nina's first recorded uses of the word *pretend* in (21).

(21) Nina's first 11 Uses of *pretend*

a.	Nina	2;3.18	*pretend* it's Ernie.
b.	Nina	2;5.25	see that's *a pretend flower*.
c.	Nina	2;10.13	*we will pretend* there's play dough for something to eat.
d.	Nina	2;11.6	*he's just pretend* to take (th)em off.
e.	Nina	2;11.12	it's *pretend food* too.
f.	Nina	3;0.3	*just pretend* you have a hurt.
g.	Nina	3;0.10	oh # this # *pretend* this is a blanket.
h.	Nina	3;0.10	*I pretending* fish were coming.
i.	Nina	3;0.16	*I gonna pretend* this is a sleeping bag.
j.	Nina	3;1.7	*now you pretend* this is spencer's Mommy.
k.	Nina	3;1.7	*let's pretend* that's name.

There is nothing formulaic about these examples. Nina uses the word both as a verb and as an adjective (b, e), and in the 9 verbal uses, she has seven distinct combinations of subject (1st vs. 2nd vs. 3rd person), tense (present vs. future), aspect (simple vs. progressive), and mood (declarative vs. imperative). Nor does this sort of flexible and productive use seem to be exceptional. Apparently, children regularly learn to talk about pretending without ever using the verb *pretend* in a clearly discursive construction.

This clearly seems to contradict the predictions of the performative hypothesis; however, there are good reasons to think that pretense is not like other sorts of mental states. First, unlike thinking or knowing (but like watching and listening), acts of pretense necessarily and prominently involve some overtly observable behavior, so understanding the word *pretend* does not pose the problem of an invisible referent in the same way that other mental state words do. And in fact there is substantial evidence that young children have trouble with the invisible, mental aspects of pretending – that they understand pretense as a special sort of behavior, a

sort of "acting as if" (Perner 1991, 1994), without understanding that in order to pretend something, one must simultaneously believe that it is not the case (cf. Lillard 1993). If this is correct then the ways children learn to talk about pretense are probably irrelevant to the performative hypothesis.

On the other hand, even if children's understanding of pretense does not involve a notion of mental representation as such, the ability to label an activity as pretending, and to distinguish that from really doing something or just trying to do something (cf. Rakoczy et al. 2004) does require some general ability to represent what is pretended as different from what is real. And in as much as pretense is a sort of representational activity, the meaning of a word like *pretend* would appear to pose problems analogous to those posed by truly metarepresentational predicates like *think* and *know*.

In this light, it is interesting to note that while young children's use of the word *pretend* may not be discursive (since it does not contribute to the performance of specific sorts of discursive acts), it is in fact consistently performative in the narrow sense that the word is used to denote and thereby to perform the acts of pretense which it describes. In the examples in (21) Nina does not actually talk about 'pretending': what she does is modify, or suggest the cooperative modification of, some aspect of an ongoing pretend scene. Thus by virtue of her utterance in (21c), Nina effectively created a supply of imaginary play dough for the game she was playing. Afterwards, even when she had been told that there was no play dough, Nina used this imaginary supply to feed her toy animals, and when her mother asked what the alligator would like to eat, Nina said "I give him some play dough. # I give those animals all some play dough."

Strikingly, even example (21d), which appears to be a report on a third person's pretend mental space, actually performs an act of pretence. The third person here is a toy Snoopy which is playing a role in Nina's imaginary game, and so his act of pretense is in fact something Nina herself is pretending. This, of course, is a second-order case of "acting as if," but it is nonetheless performative in the sense that it creates an imaginary fact in Nina's pretend space. It appears then that young children are more likely to use the word *pretend* to create a pretend situation than they are to simply describe a situation as being pretend rather than real. Whether or not young children understand pretense as a kind of mental state, the fact that they use the word performatively to create pretend situations before they use it to describe such situations is, in fact, just what the performative hypothesis would predict.

The overall picture which emerges strongly supports the essentials of the performative hypothesis. A large number of lexical verbs denoting

mental states of all kinds are learned first and used most frequently in discursive formulae. The discursive uses of these verbs are hardly arbitrary. If all one knows about the concept 'wonder' is that it is the state one is in when one asks a question, or about 'wish' that it is the state one is in when one expresses a desire, one in fact knows a lot about these concepts. Apparently, children (and speakers in general) learn about the invisible referents of mental state verbs by first associating these verbs with the performance of particular sorts of communicative acts, and later focusing the reference of the verb on particularly salient features of those acts – namely, on the mental states of communicative agents.

But is this the only way children can learn about the invisible referents of mental state verbs? Probably not. There are in fact several ways these verbs may be used in reference to a salient aspect of a context without modifying the performance of a speech act *per se*. For example, verbs of perception can often refer to activities which involve a salient stimulus of some sort, like listening to music or watching a video: e.g., *let's watch TV.* (Peter 2;2); *wanna hear that.* (Peter 2;4); and *xxx gon make noise and # and I will hear her* (Eve 2;1). And I can report that at 18 months my own son, Zev, before he ever combined words, would use the verbs *watch* and *listen* to request that we play a particular video recording or music cd. These were not attempts to coordinate our attention, but rather demands for us to change the environment in a particular way, and while these were directives, the verbs themselves functioned depictively rather than discursively.

On the other hand, what is depicted in these uses is not an invisible mental state, but a salient and familiar type of activity – the point is not to comment on his own or anyone else's perceptual experience of Ray Charles or the Teletubbies, but rather to gain access to a desired experience of the relevant sort. And it is surely relevant that the most frequent words Zev heard in reference to videos or music were probably *watch* and *listen.* These uses do undermine a strong version of the performative hypothesis, since they clearly show that there are ways to learn the meanings of mental state verbs besides through their discursive uses. But they also support the basic insight that children first learn to use mental state verbs in contexts where some saliently observable activity effectively highlights the verbs' more abstract denotata. And since most mental state verbs are not consistently associated with any saliently observable activity aside from their uses in speech, it seems likely that the discursive uses of these words may in fact be a necessary part of how children learn to refer to mental

states. In this sense, at least, the performative hypothesis is robustly supported by the data in this study.

4. Representing children's representational language

Intuitively, it seems unsurprising that children should master the more formulaic and pragmatically loaded depictive uses of mental state verbs before they take on truly referential and compositional uses; but it is actually not obvious why this should be the case. The fact is, the pragmatic uses are not really so simple. The pragmatics of hedging implicit in the use of a formula like [*I think*] crucially depends on an ability to calculate the potential risks to oneself and to one's audience involved in an act of assertion. Inasmuch as children are able to use such formulae appropriately in spontaneous discourse, it would seem that they can make such calculations, at least unconsciously. But if children really can make such complex pragmatic calculations, why should the depictive use of mental state verbs cause them so much trouble? And if they can't make such calculations, why should the discursive uses of these verbs be so easy? And in either event, what is the semantic relation between these uses which links them in ontogeny?

The easy intuition here is that depictive uses of mental state verbs are hard because they require one to somehow keep two representations in mind at once: one of a mental state (i.e., *that* someone has a thought), and one of the contents of the mental state (i.e., *what* someone's thought is). Diessel and Tomasello appeal to this sort of intuition when they suggest that discursive uses of mental state verbs lack propositional content, and that depictive uses – particularly those with clausal complements – are harder because they require a child to process two propositions simultaneously. The problem is, Diessel and Tomasello do not actually specify just what can count as a proposition or how to count the number of propositions expressed by any sentence, so it remains unclear just what it means to "hold two propositions in short-term memory" (2001: 136). More importantly for our purposes, they offer no account of how the "propositional" and "non-propositional" meanings of mental state verbs are actually related to each other.

To develop such an account here I will make use of some basic notions from Mental Space Theory (Coulson 2001; Cutrer 1994; Fauconnier 1994, 1997; Israel 2006). I suggest that the crucial difference between discursive and depictive uses of mental state verbs has less to do with their semantic

content – that is, what they profile inside a mental space – than with their construal, and more precisely, with the ways they direct attention through a configuration of mental spaces. I propose that mental state verbs are always "space builders" in the sense that they either introduce or refer back to some mental space within a configuration. But while depictive uses build a new space and focus on its contents, discursive uses simply evoke a space as the background for some other focused content. The former depict their content and construe it objectively; the latter evoke their content and construe it subjectively (cf. Langacker 1990, 2000).

Mental Space Theory is a theory of referential structure and of the ways mental representations (and metarepresentations) are organized and related in discourse. The basic idea is that language in general does not refer directly to the outside world, but rather prompts the on-line construction of cognitive representations, or "mental spaces," which may or may not be construed as corresponding to anything in reality. Mental spaces are partial, since each space represents something less than a whole possible world, and they are partitioned in the sense that each space defines a local domain of reasoning (Dinsmore 1991: 45). Mental spaces do not live alone – they live in discourses. At any point in a discourse, one or more spaces are connected in a *configuration* of some sort (Cutrer 1994; Fauconnier 1997). There are rules governing how configurations are elaborated in discourse. Every configuration begins with a Base space, which establishes a sort of global context. As a discourse develops, there is always one space in Focus and one which serves as the Viewpoint. In the simplest configuration, both of these functions can overlap and be identical with the Base, but as new spaces are added to a configuration, Focus and Viewpoint may move from space to space.

Very young children seem to have little trouble with configurations involving two or more mental spaces. The ability to deny a proposition or to remember a past event, to mention just two skills common among 2 year olds, both require the activation of at least two mental spaces. Denial, for example, involves the exclusion of some content from a focus space, and so requires a negative background space to specify the excluded content (This, of course, is why it doesn't work to tell someone not to think of an elephant.). Similarly, past tense requires a partitioning of information between two spaces to capture the fact that facts which hold in the past might not hold in the present.

As noted in the previous section, one very simple type of representation at which very young children are adept is pretend play. Whether or not children understand pretense as a mental act, they clearly can distinguish

what is real from what is pretend, and this requires a basic ability to sort representations into distinct mental spaces. Figure 1, for example, depicts what Eve might have meant when, at the age of 2;2, she said, "*we pretend Sarah's a band aid*" while sticking a toe inside her baby sister Sarah's pants.

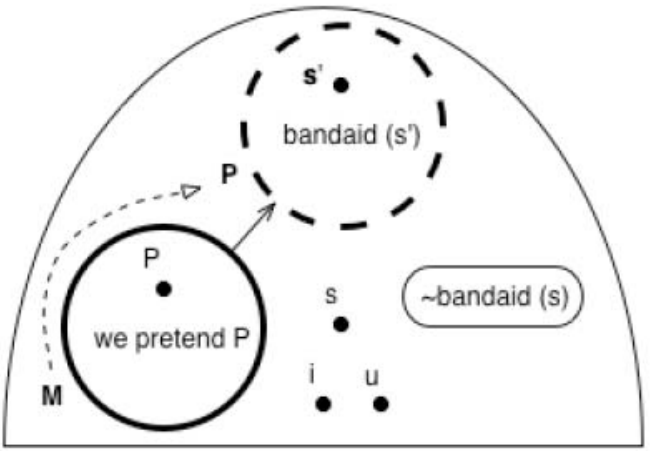

Figure 1. Pretend (P): s is a band aid

This configuration features two spaces (M and P), three participants (Eve=i, Mother=u, and baby Sarah=s), and a background assumption that Sarah is not a band aid (represented in the oval box as part of the Base). The initial space M contains the suggestion that "we pretend," while the daughter space P elaborates the proposed pretense. In this diagram and those which follow, the Base is represented as a semi-circle containing all the other spaces along with whatever is mutually manifest in the common ground – in particular, the speech participants themselves and any salient background assumptions. Mental spaces which are either assumed or asserted as factual are drawn with solid circles; spaces which are hypothetical or counterfactual are drawn with dashed circles; spaces in focus are drawn as heavy circles (boldface). Upper-case letters label both propositions and mental spaces; lower-case letters represent individuals.

The diagram gives just one plausible interpretation of Eve's utterance, and it may not be exactly what the child had in mind. In particular, it is likely that the background assumption (here, that Sarah is not a band aid) might be less salient in a young child's conception of a pretend situation (cf. Perner 1994). This is not to suggest that Eve is confused about Sarah's

possible status as a band aid, but simply that the actual contrast between pretense and reality might not be part of her awareness. The diagram is also, notably, neutral as to whether *pretend* denotes a kind of mental state or just a special sort of representation (cf. Lillard 1993; Perner 1994): thus, precisely the same configuration of spaces would be evoked by a sentence like *In this picture, Sarah is a band-aid.*

The diagram does, however, capture one aspect of the utterance which is basic to any interpretation, and that is the way attention flows from one space to another. In this example Focus and Viewpoint start in space M, and Focus then moves to the pretend space P. The curving, dashed arrow from the "M" to the "P" represents the flow of attention from one Focus to another. The straight, solid arrow between the circles indicates a containment relation: space M contains space P in the sense that P elaborates an element within space M. The flow of attention here thus parallels the direction of elaboration, as the parent space, M, is both the viewpoint for and the container of the daughter space, P. I will refer to structures of this sort as *zoom-in configurations*.

In general, zoom-in configurations do not appear to pose any particular problems for young children. Common constructions which prompt a zoom-in configuration include embedded narratives (i.e., stories within stories) and nested locatives (Langacker 1987: 286–287) where each locative establishes a search domain inside the search domain of an immediately preceding locative: "In a country there was a shire, and in that shire there was a town, and in that town there was a house, and in that house there was a room, and in that room there was a bed, and in that bed there lay a little girl" (from Mrs. Gaskell's *Wives and Daughters*). Probably most uses of mental state verbs involve a zoom-in configuration, as do all discursive uses.

Figure 2 gives the configuration for something Abe said to his father at the age of 2;10.3,: *uhhuh Robin did you know Robin was [#] Robin was not Superman?* Here Abe is ostensibly questioning his father's knowledge of a negative fact. The question is represented by the hypothetical status of the first focus space M. Focus moves from M to K, which is represented as factual (i.e., asserted) and is itself construed against the background of a negative space, N, which is not in Focus and includes the counterfactual situation denied in K (that 'Robin is Superman'). Finally, the presupposition associated with the use of the [*did you know K?*] construction – that the speaker can vouch for the truth of K – is presented as a background assumption in the common ground.

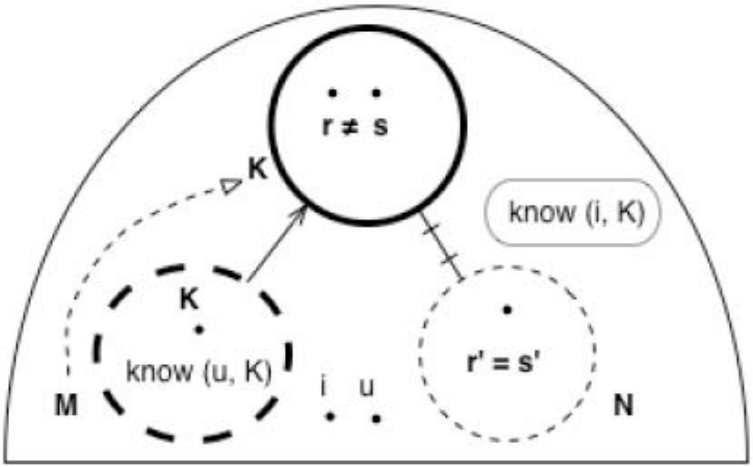

Figure 2. A (Quasi-) depictive interpretation of [*did you know*...]

Again, this might seem a somewhat rich interpretation for an utterance in which Abe's use of the [*did you know*] construction is likely to be at least partly formulaic, and more discursive than depictive. But the diagram here actually makes no real claim as to what sort of mental content, if any, Abe associates with the verb *know*: what the diagram shows, essentially, is just a question construction used to introduce an assertion. And if we take the [*did you know*] construction as an unanalyzed formula with a purely discursive meaning, its configuration still might not be so different.

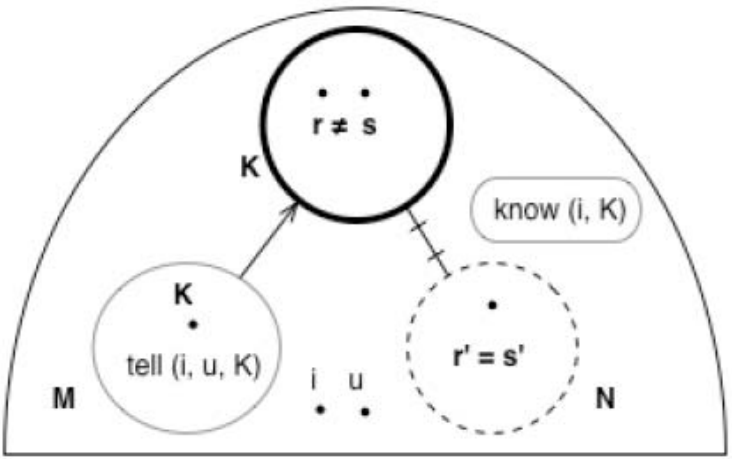

Figure 3. A discursive interpretation of [*did you know*...]

Figure 3 shows the [*did you know K*] construction as an unanalyzed idiom – one which does not express a genuine question but simply frames what follows as an assertion. The basic shape of the configuration is unchanged, as are the relations of inclusion and opposition between M, K, and N, but since space M is never in focus, there is no flow of attention from M to K. Space M here is subjectively construed: it is not an object of conceptualization but rather represents the space from which the speaker views his own speech act – hence the paraphrase of *did you know* as 'I tell you.' The rationale for this diagram is that even if Abe understood nothing of the syntax, semantics or even morphology of the [*did you know*] construction, the appropriate use of the construction to frame an assertion requires a representation in which the asserted content is partitioned from whatever frames it.

The close similarity between these diagrams suggests that the shift from a formulaic discursive use to a compositional depictive use may be largely just a gradual adjustment of focus. This in itself suggests how discursive uses may provide a foundation for children's understanding of depictive uses – a conceptual structure (here, space M) which at first is construed subjectively gradually becomes routinized and eventually is reconstrued as an object of attention itself.

Still, there is more to the depiction of a mental state than just a focused mental space. In fact, I have labeled the configuration in figure 2 as "quasi-depictive" because it is arguably intermediate between a purely discursive use like that of figure 3 and a truly depictive use. The problem is that the zoom-in structure of figure 2 allows attention to move from one space to another without ever really focusing on the relations between them. For a mental state verb to count as truly depictive, it must profile the relation between a conceptualizer and some conceptual content in a way that actually puts focus simultaneously on the conceptualizer (in the parent space) and what is conceptualized (in a daughter space). In other words, as suggested above, two things, and in fact two mental spaces, must be kept in mind at once. There is no reason this should not be possible with a zoom-in configuration, but it appears to be a necessary feature of zoom-out configurations, where focus moves from an embedded space to a parent space.

Consider again the story Abe told when he was 4 years old, in (3), above. The story begins with a character who says something, grows wings, flies away and can't stop flying. It then shifts to a dialogue between a mother and her child in which, as Abe puts it, *the mommy people said 'kid, I'm going,' and, and, and the kid knowed that because the mommy telled*

him. Abe's pragmatics here is quite sound. Abe makes an explicit claim about the relation between saying and knowing – that a speaker's saying something can cause an addressee to know that thing. Abe's thought is not trivial, for it requires him to step back from the focused content of one mental space depicting what is said, and to reconstrue that content from the perspective of a new parent space. Figure 4, below, illustrates this process of zooming out from a focus space to a new parent space in the relation between spaces S_1 and M_1.

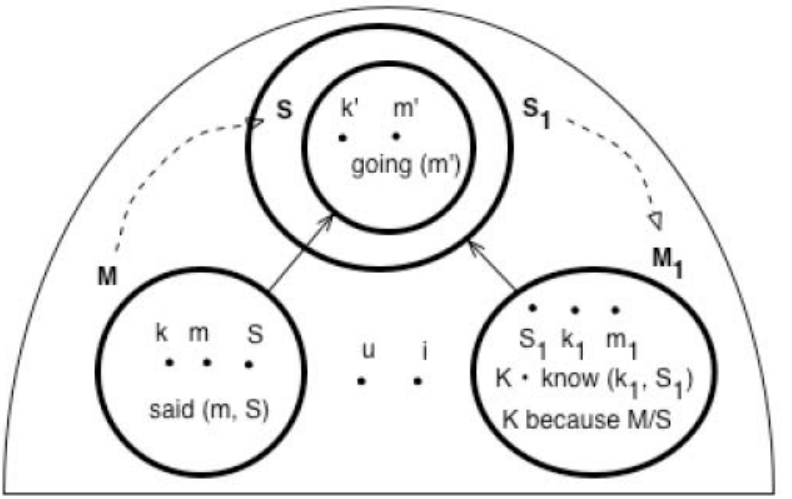

Figure 4. Zoom-in and zoom-out configurations: [m Said S and k Knowed S]

It is easy to see why a configuration like this might be difficult; the difficulty, however, may be due less to the number of spaces involved, than to the ways attention is directed through them. The configuration features two major shifts of Focus: from M to S, and from S (or S_1) to M_1. In the first shift, Focus zooms in, from the mommy's locutionary act in space M, to the illocutionary content of that act in space S. In the second shift, Focus zooms out, from the content of what is said in S/S_1, to the kid's awareness of that content – proposition K in space M_1. The first shift zooms in to a Focus space contained inside the Viewpoint space; the second shift zooms out to a Viewpoint space which itself contains the previous Focus.

The ability to zoom out from a Focus space to a higher Viewpoint space would seem to be essential to understanding the denotations of mental state verbs, or of metarepresentational predicates in general. In a zoom-in configuration, as in figures 1–3, the space builder provides a sort

of mental path into a new Focus space, but it does not focus attention on the actual relation between the two mental spaces – once one has shifted attention to the daughter space, one can more or less ignore the parent space one has left. However, in a zoom-out configuration, one cannot understand the new Focus unless one specifically understands its position as a container of the previous Focus. In this sense, the ability to zoom-out from one mental space to another is precisely what it takes to understand something as a representation – that is, to understand both what is represented and the status of the represented as a wish, a belief, a story, a lie or whatever.

Most, if not all, of the metarepresentational tasks which pose problems for very young children involve zoom-out configurations. This at least seems to be true of irony, allusion, understatement, puns, frame-shifting figures generally (cf. Coulson 2001), and a wide variety of conversational implicatures. It is also, I suggest, a defining feature of most so-called false belief tasks. In a classic false belief task (Wimmer and Perner 1983), dolls and props are used to enact a sequence of events in which a boy puts a bar of chocolate in one location and when the boy is not looking, the chocolate is moved to another location. Subjects are then asked to indicate where the boy will look for the chocolate. Typically, children older than 4 years answer correctly that the boy will look where he last saw it, while those younger than 4 years answer that he will look where the chocolate really is. The standard interpretation of this is that young children somehow lack a concept of false belief, or at least an ability to attribute such beliefs to others.

My intuition is that the difficulty here might not be with false belief *per se*, but with the zoom-out configuration needed to evoke an alternative perspective on a given situation. In order to succeed at this task a subject must shift her focus from a depicted narrative scene (i.e., the reality in which the chocolate has been moved) to a character's representation of that scene (i.e., the false belief in which the chocolate is where it was). More than just an understanding of other people as mental agents, this requires an ability to navigate a particular sort of mental space configuration – in particular, an ability to zoom-out from the contents of one mental space and reconstrue those contents from the perspective of another mental space. If this is even close to correct, it suggests that a child's emerging "theory of mind" may reflect a growing ability to build and navigate through increasingly complex sorts of mental space configurations.

5. Semantic development as desubjectification

In this paper I have argued that the different ways of using mental state verbs – to denote mental states and to manage interaction in discourse – are not just closely related semantically and pragmatically, but are actually ontogenetically linked. Semantic development, at least for this neighborhood of the lexicon, appears to be driven by pragmatic practice – in particular, by the regular and recurring uses of these verbs in joint communicative routines. Children consistently learn the discursive uses of mental state verbs before using them depictively, and for good reason. The discursive uses are easy to learn because they index communicative acts which children understand well and engage in often. Since these acts consist essentially in the coordination of mental states across speech act participants, these uses also effectively highlight the sorts of mental contents which the verbs ultimately denote. Through repeated exposure to and practice with the discursive uses, children learn different ways of framing the content of one mental space inside another, and as these framings become increasingly routine, children can reconstrue a framing space itself as a focus of attention. At this point children may distinguish a variety of mental states, but may still have difficulty with certain mental space configurations, including the zoom-out configurations needed to pass a standard false belief test. Eventually, as children learn to focus not just on the internal contents of a space, but also on the relations between spaces, they can begin to represent representations as such, and so can move more or less freely from the represented content in one space to the representational content in a higher space.

Finally, it is perhaps worth noting that the semantic development observed here in ontogeny – from pragmatically rich, more subjective meanings to referentially neutral, more objective meanings – runs exactly counter to the sorts of "subjectification" that are normally found in diachrony. For Traugott, subjecitfication is a universal and unidirectional diachronic tendency whereby meanings become "increasingly based in the speaker's subjective belief state/attitude ... toward what the speaker is talking about" (Traugott 1995: 31; cf. Traugott and Dasher 2002). For Langacker (1990, 2000), on the other hand, the process involves the gradual attenuation of some profiled semantic content from an objective, focused, "on-stage" construal to a subjective, focalizing, "off-stage" construal. Either way, however, what happens with mental state verbs in ontogeny appears to be just the opposite – a matter of *desubjectification* – shifting from an originally discursive use as a sort of illocutionary operator,

and gradually toward a more objective use in which it denotes actual propositional content.

This contrast presumably reflects the different sorts of problems which confront speakers as semantic innovators and children as language learners. While the former use pragmatics to enrich the content of what they say, the latter need pragmatics just to infer what is said in the first place; while the former exploit contextual cues to convey a subjective attitude, the latter can only understand a construction's objective semantic content by gradually eliminating the contextual variables which affect its interpretation.

The account I have developed here is programmatic in many respects. Ultimately, the semantics of mental state verbs is just one of several phenomena – including, among others, irony, pretense, deception, quotation and reported discourse – which require speakers and hearers to manage multiple viewpoints within a complex configuration of mental spaces. Somewhat surprisingly, despite decades of subtle research on belief attribution and "theory of mind," there have been few attempts at articulating a general pragmatic theory of metarepresentation which could handle all these sorts of phenomena (though see Wilson [2000] for a promising one within the framework of Relevance Theory).

While I have focused my claims here narrowly on the ways children use certain linguistic constructions, these my findings do have implications for a more general theory of metarepresentation in humans. The clearest implication, I think, is that people's metarepresentational abilities in general are firmly grounded in the lived experience of linguistic usage. It is, in fact, the experience of using representations itself that forms the foundation for children's increasingly sophisticated metarepresentational abilities and for their growing awareness of others as fellow metarepresentational beings.

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Spanish *gustar* vs. English *like*: A cognitive analysis of the constructions and its implication for SLA

Valentina Marras and Teresa Cadierno

1. Introduction

One of the areas of Spanish grammar that is considered rather difficult for English native speakers is the construction with *gustar*-type verbs. The syntactic difference between the Spanish construction (e.g., *Le gusta el chocolate* Her/him-Indirect Object likes the chocolate-Subject) and the corresponding English construction (e.g., *She/he likes chocolate* She/he-Subject likes chocolate-Direct Object) is noticeable. In English the entity that experiences a certain emotion or mental activity, the experiencer, is coded as the subject, and the stimulus that causes the emotion as the direct object. In Spanish, in contrast, the experiencer is coded as the indirect object, i.e., in the dative case, while the stimulus is coded as the subject.[1] Whereas some studies (e.g., González 1998; Montrul 1997) have shown the difficulties with which English learners of Spanish acquire the Spanish construction, no investigation has, to our knowledge, examined whether Spanish learners of English face the same level of difficulty in the acquisition of the English construction. The hypothesis posited in the present study, which is based on a contrastive analysis of the two constructions, is that the Spanish learners of English will not experience the same level of difficulty as the English learner of Spanish.

The aim of this paper is consequently twofold: 1) to provide a cognitive contrastive analysis of the English and Spanish constructions involving subject and dative experiencers, and 2) to examine the implications of this analysis for Second Language Acquisition (SLA). The paper thus addresses the cognitive role of language from an SLA perspective. It is argued that this perspective allows for a systematic examination of the universal aspects of conceptualization and the specific codification across languages.

The motivation for the study is likewise twofold: 1) to provide a psychologically plausible explanation for why different languages, like English and Spanish, develop divergent mappings of the thematic role of

the experiencer to different syntactic functions (subject vs. dative object); and 2) to examine whether the results of this analysis can explain possible different levels of difficulty in the acquisition of the equivalent second language (L2) construction by English learners of Spanish and Spanish learners of English.

2. Theoretical framework

The theoretical framework utilized in this analysis is Cognitive Linguistics. Even though Cognitive Linguistics is a theoretical framework consisting of different approaches, they all share a particular view of language and some common tenets such as the experientialist approach with its view of meaning as embodied, and the symbolic view of language, which constitute the basis of the present study.

Cognitive Linguistics is based on the experientialist view of human faculties. Its central claim is that all human faculties, including language, proceed from bodily experience, the construct of embodiment. As expressed by Gibbs (1996: 27), "linguistic structures are considered to be related to human conceptual knowledge, bodily experience, and the communicative functions of discourse." Language is thus seen as an instrument of conceptualization and therefore cannot be separated from its cognitive and communicative functions. This means that there is an important interdependence between language and cognition. In consonance with this new view of language, the imaginative aspects of reason – metaphor, metonymy and mental imagery – play a central role in linguistic description. In the present paper we will focus on the metaphorical processes behind the two different conceptualizations of the two constructions under investigation. According to the cognitive view, metaphor is no longer considered as a figure of speech, but as an important conceptual tool by which we conceptualize one domain of experience in terms of another one (e.g., TIME IS MONEY).

A further fundamental tenet as claimed by Langacker (1987) is that language consists of three elements: a semantic pole, a phonological pole and a symbolic connection between the two. In other words, language is symbolic in nature, which means that there is interdependence between form and function. In Langacker's (1987: 1) words, "all linguistic expressions are viewed as symbolic units consisting of conventionalized form-meaning mappings used for communicative purposes."

In line with the tenets mentioned above, the specific theoretical approaches used in the analysis of the *gustar* and *like* constructions are Categorization and Prototype Theory (Rosch 1978; Taylor 1995), and Figure/Ground segregation (Talmy 1978; Langacker 1987, 1990, 1991; Maldonado 2002).

2.1. Categorization and prototype theory

Categorization has been defined by cognitive linguists (e.g., Langacker 1987; Taylor 1995; Ungerer and Schmidt 1996) as a mental process of classification through which we group and organize the information we perceive from the world around us into units. This process results in the formation of cognitive categories, which are heterogeneous units with fuzzy boundaries that are formed around cognitive reference points or mental concepts called prototypes.

This cognitive view on categorization differs from the classical view in several ways. Whereas the classical approach views categories as discrete and with clear-cut boundaries, the cognitive approach argues for the existence of fuzzy boundaries among categories. Furthermore, in the classical approach, categorization is based on necessary and sufficient conditions, which means that all members of a category must share certain features. In the cognitive approach, on the other hand, categorization is based on prototype effects and on what Wittgenstein (1958) has called *family resemblance*. This means that categories are based on networks of similarities and, consequently, not all members of a category have equal status or share a set of common, necessary and sufficient attributes. A typical example discussed in the literature (e.g., Ungerer and Schmidt 1996: 26–27) is the category of BIRD, which consists of more prototypical members, such as >ROBIN< and >SPARROW<, and more peripheral members, such as >OSTRICH< and >PENGUIN<. In this paper, we will use categorization and prototype theory in the analysis of the two sets of categories that underlie the Spanish *gustar* and the English *like* constructions, namely, the argument structure categories of Subject, Direct Object and Indirect Object, and the syntactic categories of transitive and intransitive constructions.

2.2. Figure/ground segregation and relations among role archetypes

In line with the experientialist approach to language adopted by Cognitive Linguistics, researchers such as Talmy (1978) and Langacker (1991) have examined the role of perceptual processes in linguistic comprehension and production. According to these authors, the syntactic structure of a clause reflects the way in which a particular scene is conceptualized. In other words, when talking about a particular event or situation, we select and order its constituting elements through linguistic means by giving more or less syntactic prominence to the element(s) that we perceptually consider to be more or less salient, and by directing our focus of attention on specific substructures of a given entity or relation, a notion which Langacker (1987, 1998) refers to as profiling.

In this paper we follow the analysis of grammatical relations provided by Langacker (1991),[2] which incorporates the concept of figure and ground segregation, or in his terms, *trajector*, i.e., the entity in focus, and *landmark* segregation. In a grammatical relation, we find one participant which has the highest prominence, the trajector, which is equated with the grammatical subject, and other participants with lower degree of prominence: the landmarks, equated with the direct and indirect objects.

Langacker (1991) explains the interaction between these elements by means of the notion of an action chain, which is the prototype of energy transmission (see figure 1). Langacker makes a distinction between a source domain and a target domain. The source domain is where the energy originates, and is typically coded syntactically by the agent and the instrument. The target domain is where the energy is consumed, and is typically coded by the theme and the experiencer.

A distinction is also made between an active and a passive zone, which include active and passive participants. The active participant initiates the interaction; the active participant in the source domain initiates the energy transmission, whereas the activity of the experiencer in the target domain is equated with mental contact and affectedness. By contrast, the passive participant does not serve as an original source of energy or exhibits initiative capacity.

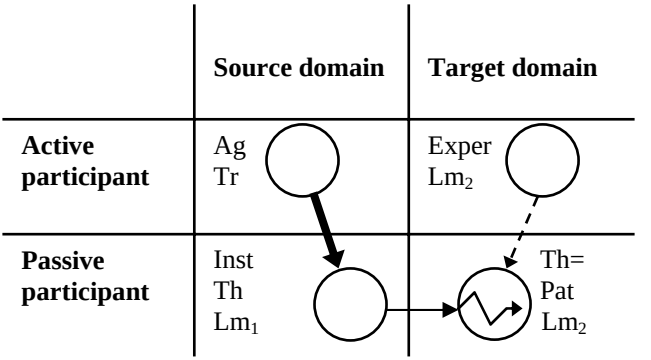

Figure 1. Energy transmission in prototypical finite clauses (e.g., *give*)

Note: ◯ = Participant; ➡ = Energy transfer; ⟶ = Change of location; - - -▸ = Mental contact; ∿▸ = Change of state; Ag = Agent; Th = Theme; Pat = Patient; Exper = Experiencer; Inst = Instrument; Tr = Trajector; Lm_1 = Landmark 1; Lm_2 = Landmark 2.
Source: adapted from Langacker (1991).

In this paper Langacker's analysis of grammatical relations will be used in order to provide an explanation for the syntactic differences between the constructions under examination.

3. Analysis of the Spanish *gustar* and English *like* constructions

3.1. The categories of subject, direct object and indirect object

Traditional grammars of Spanish (e.g., Bello [1847] 1970; RAE 1973) and of English (e.g., Quirk and Greenbaum 1973; Quirk et al. 1985) have tended to categorize argument structure by the criteria of sufficient and necessary conditions. Thus, the Subject, Direct Object and Indirect Object have been defined by the following syntactic, semantic and discursive criteria: The Subject is syntactically represented as the argument which governs verbal agreement and is in the nominative case; semantically, as being an animate, volitional agent who intentionally carries out the verbal predication; and functionally (at the discourse level), constituting the topic of the sentence. The Direct Object is syntactically represented as an argument not governing verbal agreement and, in the case of Spanish, is pronominalized in the accusative case; semantically, it is represented as the

participant which receives the verbal predication, i.e., the patient, and which is typically an inanimate participant; and functionally, represented by constituting part of the comment of the sentence. Finally, the Indirect Object is syntactically characterized by non-verbal agreement and, in the case of Spanish, is pronominalized in the dative case; semantically by affectedness, i.e., by being the beneficiary of the verbal predication, which is typically an animate participant; and functionally by being part of the comment of the sentence.

However, consistent with the claims made by Categorization and Prototype theory, we can see that the attributes mentioned above can only be applied to the most prototypical members of each category. According to Cuenca and Hilferty's (1999) analysis of Spanish argument structure, the characterizations described above can only be applied to ditransitive constructions such as *Pedro le ha dado un regalo a María*[3] (Peter her-Indirect Object has given a present-Direct Object to Mary-Indirect Object 'Peter has given a present to Mary').[4] In this sentence all the three arguments – Subject, Direct Object and Indirect Object – comply with the syntactic, semantic and discursive criteria mentioned above.

In other types of constructions, on the other hand, the characterization presented above does not apply, as the following sentences show:

(1) *Le gusta el chocolate*
Her/him-Indirect Object likes the chocolate-Subject
'She/he likes chocolate'[5]

(2) *She/he likes chocolate.*

In the Spanish construction (1) the Subject, *el chocolate*, only meets the syntactic criterion of governing agreement with the verb, i.e., it shows singular/plural agreement with the verb: *Le gust<u>a</u>*-sing. *<u>el</u> chocolate*-sing. / *Le gust<u>an</u>*-plur. *<u>los</u> chocolates*-plur. Semantically, it is inanimate, non-volitional and non-agentive. Moreover, in terms of discourse considerations, *chocolate* is in comment position. Thus, it represents the semantic and discoursal attributes that characterize the Direct Object. Furthermore, the Indirect Object, *le*, reflects some of the semantic and discoursal attributes associated with the prototypical Subject: it is animate (although not volitional, intentional and agentive) and it appears in topical position. In the English construction (2), *She /he likes chocolate*, the Subject, that is *she/he*, is not a volitional, intentional actor, but rather the affected participant, whereas the Direct Object, *chocolate*, does not

undergo any action, as is the case with the prototypical patient, but rather is the cause of the emotion.

In short, in agreement with the cognitive view on categorization, this analysis shows that the argument structure categories of Subject, Direct Object and Indirect Object do not constitute discrete and homogeneous categories to be defined by a set of necessary and sufficient conditions/ criteria. As previously indicated, the syntactic, semantic and discursive criteria traditionally used to define these categories can only be applied to a specific set of their prototypical members, whereas more peripheral members show prototype effect by sharing attributes with the prototypical members of the other categories.

3.2. Transitivity and intransitivity

Traditional grammars of Spanish (e.g., Bello 1870; RAE 1973; Alcina and Blecua 1975; Fernández Soriano and Táboas Baylín 1999) and English (Meyer-Myklestad 1967; Quirk and Greenbaum 1973; Quirk et al. 1985) have also tended to categorize transitivity and intransitivity by means of sufficient and necessary conditions. Thus, transitivity has been characterized by the following attributes: (1) it involves two clearly differentiated participants, a volitional agent equated with the subject and a patient that undergoes a change of state equated with the Direct Object; (2) it refers to an incomplete predication, i.e., there is a transmission of physical energy that passes over from an agent to a patient; and (3) it allows passivization.[6] Intransitivity, on the other hand, has been characterized by the following attributes: (1) it involves only one participant, which can be the agent or the patient of the predication and which is equated with the Subject; (2) it refers to a complete predication, which means that the predication stays in the Subject's sphere; and (3) it does not allow passivization.

However, again in accordance with the claims made by Categorization and Prototype theory, we can see that the attributes mentioned above can only be applied to the most prototypical members of transitive and intransitive constructions. An example of a prototypical instance of transitivity would be *Mary ate an apple*, and the correspondent Spanish sentence would be *María comió una manzana*, whereas an example of intransitivity would be *Mary runs in the park*, and the correspondent Spanish sentence would be *María corre en el parque*. In these sentences all the criteria mentioned above are met.

In other types of constructions, on the other hand, the characterization presented above does not apply, as the following sentences show:

(3) *She/he likes chocolate*

(4) *Le gusta el chocolate*
Her/him-Indirect Object likes the chocolate-Subject
'She/he likes chocolate'

Sentence (3), *She/he likes chocolate*, is transitive; however, the Subject, *she/he*, is not the agent, but the affected participant, i.e., the experiencer. The participant coded by the Direct Object, chocolate, is not the patient but the entity with which the experiencer establishes mental contact or which is the cause of the predication. Furthermore, even though there is a transmission of energy between the two participants, it is not of physical nature but one of mental contact; and finally, this type of construction does not always allow passivization. Sentence (4), *Le gusta el chocolate*, is intransitive given the absence of a Direct Object. Nevertheless, this sentence shares some attributes with the most prototypical members of transitivity: it has two clearly differentiated participants, and the predication does not stay in the Subject's sphere but affects another participant, the Indirect Object. The transitive construction has been widely analyzed both in functionalist and cognitive terms. Based on Lakoff (1977) and Hopper and Thompson (1980a, 1980b), Taylor (1995) provides an account on transitivity which is in line with the analysis presented above in that it is based on the prototypical attributes of their participants. Taylor argues for the existence of at least eleven semantic properties which characterize transitivity in its prototypical instantiation. For the purpose of our discussion, only some of the properties discussed by Taylor will be summarized here. According to this author, the most prototypical members of the transitivity category are characterized by having two clearly differentiated participants: (a) an agent, which volitionally controls the event, which is coded as the Subject and which appears in topical position; and (b) a patient, which, as a consequence of the agent's action, undergoes a change of state, which is equated with the Direct Object and which is the comment of the sentence.

Whereas transitivity has been analyzed within the framework of Cognitive Linguistics, intransitivity has not received the same level of attention within this approach. In our analysis, intransitivity is divided into two main categories, unaccusativity and unergativity. This division is also

present in some formalistic analyses of intransitivity, such as that of Perlmutter (1978) and Levin and Rappaport (1995), as well as in the cognitively oriented analysis proposed by Fogsgaard (2002). On the basis of these analyses, we propose a characterization of intransitivity based on its prototypical manifestation.

Both unaccusativity and unergativity in their prototypical instantiations are characterized by having only one participant. However, they differ in that the unaccusative participant semantically resembles the Direct Object of a transitive clause: it is a patient which prototypically undergoes a change of state and it is thereby thematic, as in the sentence *The boat sank*, where the event is presented as autonomous, without any reference to its cause or origin. According to Lanckager's (1991) analysis of grammatical relations, in this type of construction, the focus of attention is on the participant which receives and consumes physical energy and undergoes a change, i.e., on the target domain. The unergative participant, on the other hand, semantically resembles the Subject of a transitive clause: it is a volitional agent and controller of the event, as in the sentence *Mary runs*, where the event is initiated by the agent who is, at the same, affected by it, i.e., the agent suffers a change of state. According to Langacker (1991), in this type of construction the energy is produced and stays in the agent's sphere of action, i.e., in the source domain. Table 1 below summarizes the prototypical attributes of the categories of transitivity and intransitivity.

Table 1. Transitivity and intransitivity: prototypical properties

Transitivity		Intransitivity			
		Unaccusativity		Unergativity	
Two participants		One participant		One participant	
Agent:	- volitional - controller - subject - topic			Agent:	- volitional - controller - subject - topic
Patient:	- unergoes a change of state - DO - comment	Patient:	- undergoes a change of state - subject - topic/ comment		
e.g., *Mary eats an apple*		e.g., *The boat sank*		e.g., *Mary runs*	

Note: Transitivity based on Hopper and Thompson (1980a, b) and Taylor (1995). Intransitivity based on Perlmutter (1978), Levin and Rappaport (1995), Mendikoetxea (1999) and Fosgaard (2002).

As we can see from this analysis, both the English and the Spanish constructions are peripheral members of the transitive and the intransitive categories. The English construction with *like* is a peripheral member of the transitive category in that, as previously explained, it does not comply with many of the attributes that characterize the prototypical instantiation of transitivity. The Spanish construction with *gustar*, on the other hand, can be categorized as unaccusative given that (a) the Subject of the clause is thematic, that is, it does not show any agentive property; and (b) the construction centers the focus of attention on the target domain, that is, the domain of the experiencer. This construction, however, is also a peripheral member of this category since it shares some attributes with the most prototypical members of transitivity, namely, having two participants that are in mental contact with each other.

Following a line of similar research, Vázquez Rozas (2006), who bases her analysis on Hopper and Thompson's (1980a, 1980b) framework, has reached a similar conclusion by characterizing constructions containing psych verbs such as *gustar* and *like* as low in transitivity. This would explain why this type of construction shows both synchronic instability (the simultaneous presence within a given language of constructions involving either subject or dative experiencers) and diachronic instability (the alternation of the two constructions within a given language across time). Vazquez Rozas' analysis differs from our analysis in one crucial way: whereas her analysis focuses on the semantic properties which characterize degrees of transitivity from + to – transitivity, our analysis includes both a transitive and an intransitive category zone, and postulates the existence of prototype effects within each category, which then allows for the existence of a transition/intersection zone between these categories. This analysis, which is in agreement with that proposed by Fogsgaard (2002), is graphically represented in figure 2.

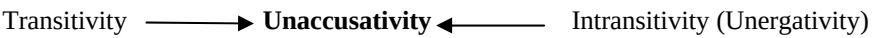

Figure 2. Unaccusativity: a transition zone between transitivity and intransitivity (adapted from Fogsgaard [2002]).

In sum, in consonance with the cognitive view of categorization, and in line with the results of the previous analysis, the present analysis indicates that transitivity and intransitivity, including its subcategories of unaccusativity and unergativity, do not constitute discrete categories with all their members sharing the same status; as previously indicated, both the

gustar and *like* constructions constitute examples of marginal members of the two categories. The English construction is a peripheral member of the transitive category, whereas the Spanish construction is a peripheral member of the unaccusative category. That is, both constructions are semantically situated in the cross-cut between transitivity and intransitivity. However, their linguistic realization differs in that in English the transitive construction is adopted, whereas in Spanish the unaccusative construction is preferred.

3.3. Analysis: *gustar* vs. *like*, mental activity and syntactic manifestation

Given that the constructions with *gustar* and *like* constitute peripheral members of the categories mentioned above, we will now provide an explanation for why these two languages map the thematic role of the experiencer to different syntactic roles.

As previously indicated in the first part of the paper, authors such as Langacker (1991) explain grammatical relations by incorporating the concept of Figure/Ground segregation and the notion of energy transmission in an action chain. However, not all interactions involve physical contact, and thereby, transmission of physical energy. For example, a sentence such as *I like chocolate* involves a mental interaction between an experiencer and an entity with which the experiencer establishes mental contact. In accordance with the cognitive view on metaphorical processes by which we tend to structure abstract concepts in terms of more concrete ones, mental interactions are commonly coded by means of transitive clauses which prototypically express physical processes, like in English. As a consequence of this metaphorical extension (see figure 3), the experiencer is coded as the Subject, that is, the trajector, which is prototypically equated with the agent and therefore, the experiencer is portrayed as the source of the mental energy or the initiator of the mental contact. With respect to the Object, this differs from the prototypical patient in that it is totally unaffected by the relationship given the lack of energy transmission. The Object semantic role is then Zero according to Langacker (1991).

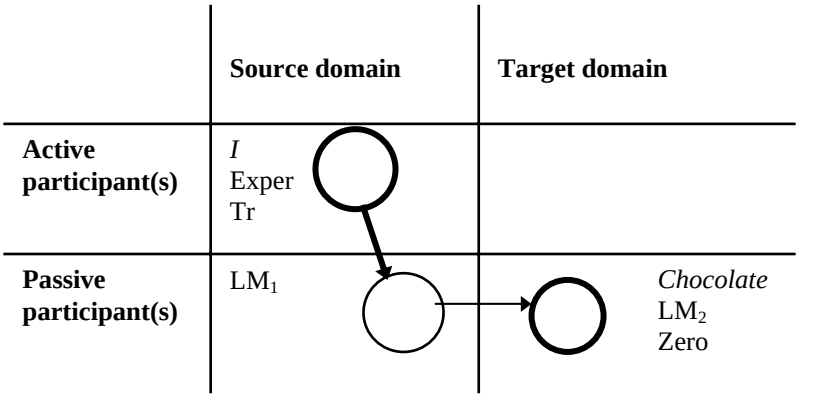

Figure 3. Energy transmission in mental interactions in English: *I like chocolate*

Note: ○ = participant; ◎ = profiled participant; ⟶ = Energy transfer = affectedness; ⟶ = Change of location; Exper = Experiencer; Inst = Instrument; Tr = Trajector; Lm_1 = Landmark 1; Lm_2 = Landmark 2.
(based on Langacker [1991]).

However, other languages like Spanish provide another type of clause for coding mental interactions. Here the relationship between an experiencer and the stimulus is, in some cases,[7] coded by an intransitive clause representing another metaphorical extension from the prototype of unaccusativity. As figure 4 shows, in a Spanish sentence such as *Le gusta el chocolate* (Her/him-Indirect Object likes the chocolate-Subject 'She/ he likes chocolate'), the experiencer does not appear as the trajector, as in English, but as the landmark, that is, as the Dative Object, or, as defined by Langacker (1991), as the active participant in the target domain. The stimulus, on the other hand, is equated with the trajector or Subject. Due to its lack of agentivity, it is a thematic Subject that enters or already belongs in the dominion of the experiencer. This means that in Spanish, the transfer of mental energy only operates in the target domain, or in the experiencer's action sphere, and here the 'action' involves mental contact or affectedness.

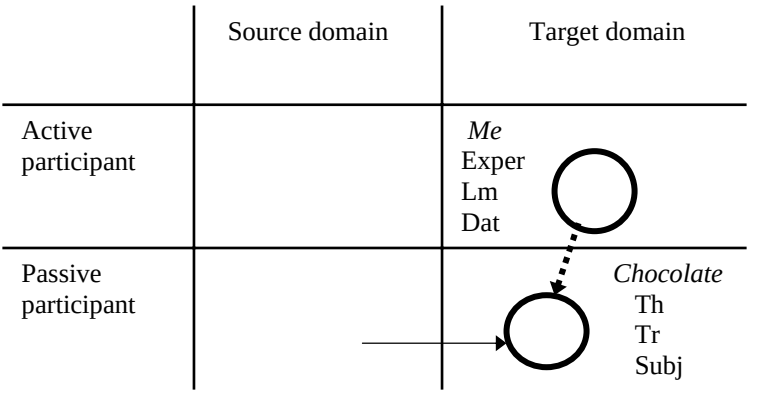

Figure 4. Energy transmission in mental interactions in Spanish: *Me gusta el chocolate*

Note: ○ = Participant; ⟶ = Change of location; ▪▪▪▸ = Mental contact; Th = Theme; Exper = Experiencer; Tr = Trajector; Lm = Landmark. (adapted from Maldonado [2002]).

4. Conclusion of the analysis

The results of the theoretical analysis show that the categories of Subject and Indirect Object, and of transitive and intransitive constructions, do not have clear-cut boundaries. Thus, the experiencer involved in these constructions and the situation coded by the verbs *gustar* and *like* respectively share characteristics of both category sets. Furthermore, we can conclude that the situation of *gustar*/*like* is coded in the two languages by different clause types, each representing a metaphorical extension from a different prototype, i.e., transitive in the case of English and intransitive, or more specifically unaccusative, in the case of Spanish. Consequently, the two languages profile different aspects of the same objective situation. English profiles that the experiencer is the participant with the highest level of activity, which, in turn, leads to a higher level of prominence manifested in the syntactic function of subject. Spanish, on the other hand, profiles that the experiencer is not the initiator of the verbal predication but the participant affected by it.

5. Implication of the analysis for SLA

The theoretical analyses of the English and Spanish constructions presented above have important implications for the study of adult SLA. More specifically, the result of these analyses allow for the formulation of theoretically motivated hypotheses concerning the degree of difficulty with which English learners of Spanish and Spanish learners of English acquire the corresponding L2 construction. In this respect, a higher level of acquisitional difficulty would be expected for English learners of Spanish than for Spanish learners of English. This is due to the fact that in the case of the Spanish construction, there is a conflict between the natural level of prominence of the dative experiencer and the syntactic prominence of the subject, i.e., the stimulus. In the case of the English construction, on the other hand, there is a correspondence between the natural prominence of the experiencer and its syntactic function, which should lead to a lower degree of acquisitional difficulty on the part of Spanish learners of English.

This theoretically motivated hypothesis is supported by some empirical evidence from both first and second language acquisition. With respect to the former, corpus analyses (Vázquez Rozas, personal communication) have shown that young children have the tendency to produce sentences such as **Yo*-Subject *me*- Indirect Object *gusta el chocolate*-Subject, where the dative pronoun, *me*, is preceded by a subject pronoun, *yo*. These corpora also show that Spanish adult native speakers produce sentences such as **Hay gente que le*-Indirect Object *gusta el chocolate*-Subject 'There are people who them like the chocolate,' where a subject relative pronoun *que* is used instead of the appropriate dative one, i.e., *a la que*: *Hay gente a la que le gusta el chocolate*. With respect to the latter, studies such as Montrul's (1997),[8] have shown a high degree of difficulty in the acquisition of the Spanish construction by learners from different native languages (L1). The linguistic focus of her study was on the acquisition of Spanish predicates with dative experiencer, i.e., *gustar*-type verbs and the unaccusative *se* construction *A los niños se les occurrió una idea* (To the kids-Indirect Object *se* them-Indirect Object occurred an idea-Subject 'An idea dawned on the kids'), in the interlanguage grammar of low-intermediate adult English and French speakers. The data were elicited through an interpretation task, aimed at testing whether or not L2 learners would interpret dative experiencers as subjects. In this task the learners' interpretation of predicates with dative experiencers and agentive predicates, both transitive and ditransitive predicates, were compared. The result of the study showed that the learners generally tended to interpret the

dative experiencers in both constructions as subjects. On the basis of these results, Montrul concludes that predicates constructed with psych verbs cause generally greater acquisitional problems than predicates constructed with agentive verbs.

What is important to emphasize is that this hypothesis is also consistent with prevailing views on the role of the L1 in SLA, where cross-linguistic influence is not viewed as mechanistic transfer of L1 structures, but as a cognitive mechanism underlying SLA. In other words, in contrast with previous behavioristic accounts of transfer, where a dissimilarity between the learners' L1 and L2 constructions was considered to be always the cause of learning difficulties, our hypothesis agrees with more recent claims made in the literature (e.g., Ellis 1994) that we need to examine the constraints/factors that determine the transfer of L1 patterns. We claim that the correspondence or lack of correspondence between semantic roles and their syntactic realization is a key factor in the transfer process.

In order for this hypothesis to receive empirical validation, bi-directional studies are needed which compare the acquisition of the two constructions by English learners of Spanish and Spanish learners of English. Such studies should preferably include both production and interpretation tasks in order to examine possible task effects on the acquisition of the constructions. A possible production task could require the informants to produce a series of sentences on the basis of descriptions of hypothetical situations. For example, a situation such as the following: "You've read in a newspaper that one of your favorite singers is going to give a concert in your town. You are talking to your friend and you tell him your opinion about this singer. Use the verb *gustar*." A possible interpretation task could consist of a multiple-choice task based on series of pictures where informants are asked to choose between several sentences. For example, informants are presented with a picture showing a woman smelling her favorite perfume, and are asked to choose between the following sentences: (1) *Yo encanto este perfume* (I-Subject love this perfume-Direct Object); (2) *Me encanta este perfume* (Me-Indirect Object loves this perfume-Subject); and (3) *Yo a mí me encanta este perfume* (I-Subject me-Indirect Object loves this perfume-Subject).

6. Conclusion

To conclude, Cognitive Linguistics can constitute a useful framework for SLA research, given that it allows for a systematic explanation of the relationship between semantic/conceptual structure and linguistic structure. Thus, cognitive-based analyses such as the present one can constitute the basis of cognitively plausible contrastive analyses of the learners' L1 and L2 systems and, furthermore, they can provide psychologically plausible explanations for why equivalent but different constructions in the learners' L1 and L2 can lead to possible differential levels of difficulty from an acquisitional perspective. In this respect, this type of analyses can make a significant contribution to the long-lasting debate on the role of the learner's L1 in SLA (Cadierno 2004; Cadierno and Lund 2004). As a result, the cognitive approach constitutes a valuable alternative to formalistic analysis to language and language acquisition where no explanation of the interdependence of language and conceptualization is provided.

Notes

1. In English we find a construction similar to the Spanish one: *The Tour the France interests/fascinates me*. In both the English and the Spanish constructions, the stimulus is coded as the subject, but the two constructions differ in that a) the particular verbs that participate in the construction differ in some cases across the two languages and b) whereas in Spanish the experiencer is coded as the Indirect Object, in English it is coded as the Direct Object.
2. A similar analysis is presented by Dirven and Verspoor (1988) in their formulation of event schemas.
3. *Le* is considered an indirect object rather than a direct object given that it is a dative pronoun. The direct object in Spanish can only be substituted by a clitic accusative pronoun (*lo, la, los, las*) while the indirect object can only be substituted by a clitic dative pronoun (*le, les*). Furthermore the direct and indirect objects in Spanish differ in that while the indirect object allows reduplication, i.e., the presence of both a clitic pronoun and a prepositional phrase consisting of the preposition *a* plus a noun phrase or a subject pronoun within the same sentence and referring to the same entity, the direct object does not. In the sentence *Pedro le ha dado un regalo a María/ a ella* (Peter her-Indirect Object has given a present- Direct Object to Mary-Indirect Object 'Peter has given a present to Mary'), the clitic pronoun *le* is reinforced by the prepositional phrase *a María* or *a ella*.

4. An anonymous reviewer of this paper has pointed out that in English ditransitive constructions such as *Peter has given Mary a present* the arguments of Direct Object and Indirect Object do not comply with the semantic characterization mentioned in traditional grammars in that the Direct Object *Mary* is animate whereas the Indirect Object *a present* is inanimate. However, the analysis provided by the traditional grammars of English consulted (Quirk and Greenbaum 1973; Quirk et al. 1985) suggests otherwise in that *Mary* is considered to be the Indirect Object and *a present* to be the Direct Object.
5. The chosen translation reflects the fact that *gustar* and *like* are the verbs most frequently used in the two respective languages to refer to this situation and thereby can be considered to be the most unmarked. We are aware of the fact that we find a construction in English that is syntactically similar to the Spanish one, as in *The chocolate pleases me*. However we find the given translation to be the most appropriate from a pragmatic point of view.
6. We are aware of the fact that not all verbs that occur in transitive constructions allow passivization. The categorization of the syntactic category of transitive construction presented here is not ours but the one offered by the mentioned Spanish and English traditional grammars. The term transitive derives from the Latin *trans+ire* which means passing over; thus Latin grammars considered transitive those sentences that could pass from active to passive. In the nineteenth century Scholar Grammar used the term transitive to refer to those verbs that show the ability to pass the action they express from the subject to the object. Traditional grammar has tended to adopt either of these views in their analyses of the transitive construction. According to other English grammars (e.g., Hurford 1994; Chistophersen and Sandved 1974), passivization is allowed if the clause is transitive and involves dynamicity. However, as noted by Huddleston (1988) there are examples that may appear to be exceptions to this general rule, such as *She is liked / feared by everyone*. From a Cognitive Linguistics perspective, the use of passivization with this type of sentence is possible given that some dynamicity is involved; that is, the stimulus, i.e., *everyone*, can be conceptualized as being actively responsible for the reaction of the experiencer, i.e., *she*. However, verbs such as *like* and *fear* do not always allow passivization. In cases where the stimulus is inanimate (e.g., *I like chocolate*), passivization is not possible, given that there is no dynamic participation on the part of the stimulus in the mental interaction with the experiencer.
7. The relationship between an experiencer and a stimulus can both be coded by transitive and intransitive clauses in Spanish. There are examples such as *Amo la música* I-Subject love music-Direct Object and *Aprecio mucho a Jua*n 'I-Subject appreciate much John-Direct Object' which, as in English, are coded by means of transitive clauses.
8. The overall aim of Montrul's investigation was to provide support for the claim that Universal Grammar is available in SLA. Here we are only reporting those aspects of Montrul's study that are relevant for the present discussion.

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Part II

Applying discourse and corpus perspectives to issues in Cognitive Linguistics

The development of verb-argument structure in child discourse: On the use of construction variation in peer play

Melissa A. Smith and Nancy Budwig[1]

1. Introduction

The present study can be contextualized within current usage-based approaches to child language (Bybee 1985; Croft 2000; Langacker 2000; Lieven, Pine, and Baldwin 1997; Tomasello 2000, 2003). Such views emphasize language development as a gradual process involving domain general skills and based on ongoing analyses of the linguistic input that children receive, and highly dependent on children's communicative needs. According to some researchers, children's earliest constructions are rote learned and then generalized on a verb-by-verb basis (see Tomasello 2003 for review). Others have highlighted the role of semantic and pragmatic meaning clusters in early constructions. For example, Budwig (2000, 2001), Budwig, Stein, and O'Brien (2001) and Clark (2001) have argued that from early on children recruit argument structure to adopt perspectives on scenes for discourse purposes. These authors highlight the extent to which 2-year-olds both mirror adult preferences to use argument structure for discourse functions, while also pointing out ways children's unique communicative goals pressure them to deviate from adult patterning. For instance, Budwig and colleagues (Budwig, Stein, and O'Brien 2001) have pointed out that American- and German-speaking children uniquely use active versus middle constructions to highlight distinct vantage points. The American children made use of active transitives early on to highlight a scene in which an agent (usually the self) acted to bring about a change. Middle usage, in contrast, was found when the children reported instances of goal blocking. Although the German children also used active transitives for a scene like that described for the American 2-year-olds, the German children used middles in a different way, instead switching to middles at junctures in which they adopted a normative perspective on events. Similarly, Budwig (1990, 2001) has argued that American-speaking children's early use of *get* versus *be* passives are linked to two distinct

event perspectives that provide an index to the communicative partner about the ongoing construction of context.

The idea that children's use of constructions offers them powerful resources for perspective taking has also been noted by narrative researchers studying slightly older children (see Bamberg 1991, 1994; Berman and Slobin 1994). Berman and Slobin, based on a crosslinguistic analysis of preschool and school-age children as well as adult speakers of five languages, highlight how the developmental pathway is quite extended with children taking a long time to develop ways of constructing cohesive texts through the use of various constructions. The crosslinguistic analysis revealed for instance that at age 3, very few children used passive constructions to vary perspective in monologic narratives. Their cross-sectional analysis suggests that over the school years, children use passives to focus on non-agent participants in subject position. Not only do they use such constructions more frequently with age, but also for a greater variety of discourse functions, suggesting that regardless of age of onset, the developmental trajectory for making use of transitive and intransitive constructions is quite protracted.

1.1. The present study

The focus of our research concerns the transition from the very early contextually restricted usage of transitive and intransitive constructions noted above for children across the second and third year of life and the later, more sophisticated usage by speakers in monological narrative contexts. Specifically, we aim to better understand the frequency, distribution, and semantic and pragmatic functions of children's usage of transitive and intransitive constructions across the preschool and early elementary school years. An examination of prior literature on transitive constructions suggests a robust tendency for English speakers to use them to adopt a basic event construal of a human agent acting on objects. As Goldberg (1995) suggests, the transitive frame itself offers "pre-constituted semantic packages" which provide children a way to express agency. By preschool age, there appears to be little doubt that children will use transitives to adopt such a perspective. What is less clear is how children will make use of intransitive constructions and whether across the ages of preschool and early elementary years children prefer to link the use of this construction with single or multiple perspectives taken on events.

Unlike much prior work that has aimed to test children's comprehension and production of transitive and intransitive constructions using nonsense verbs in experimental settings, the present study aims to examine form-function relationships found in children's everyday spontaneous conversation. Moreover, the present study is unique in examining 4- and 7-year-olds in peer interactions, as little research has focused on how children over age 5 actually use verb-argument structures or how children of any age use them in peer interaction.

More specifically, we address three questions:

(1) How do 4- and 7-year-old children distribute the use of transitive and intransitive constructions, and are there age differences in distribution patterns found?

(2) What are the distributional patterns for transitive and intransitive constructions with regard to animacy? While prior work leads us to expect that all children primarily would use the transitive construction with animate agents and inanimate objects, what is less clear is whether children of both ages will use both animate and inanimate subjects with intransitive constructions.

(3) Given prior research suggesting young children's early restriction of animate subjects of transitive verbs primarily to self, and given expected changes in the communicative goals of 4- and 7-year-old peers, we questioned whether there might be an increasing array of kinds of animate subjects incorporated into subject position of transitive constructions. A third analysis examined whether this was the case.

In sum, the overall goal of our research has been to better understand the ways in which 4- and 7-year-olds use syntactic frames in combination with unique configurations of animate and inanimate subjects and objects in order to adopt distinct perspectives on scenes. A second goal is to link what is known about more limited use of transitive and intransitive constructions before age 3, with later usage.

2. Method

2.1. Participants

Sixteen American-English speaking children participated in this study, eight 3- and 4-year-olds (mean age of 4;1) and eight 6- and 7-year-olds (mean age of 7;3). The children were predominantly middle-class Anglo-Americans who came from suburbs of a large New England city. They were recruited from a summer program at a children's learning center in the area where they lived. Parental consent for each child's participation was given.

2.2. Procedure

Within age groups, the children were matched with a same sex peer in order to facilitate interaction. Most of the time, the children in each dyad were friends who worked well together. Recommendations from the children's teachers were used to determine friendship and level of compatibility.

Each dyad visited an empty room in the children's learning center and participated in two semi-naturalistic activities chosen to elicit peer discourse: (a) solving a jigsaw puzzle and (b) building with legos. The 4-year-olds were given a 12-piece "101 Dalmatians" piece puzzle, and the 7-year-olds were given a choice of either a 32-piece "Arthur" puzzle or a 64-piece "Beauty and the Beast" puzzle. Each group was given 10 minutes to complete their puzzle.

All children were given the same legos. The lego set included broken pieces, chubby, plastic people, and inanimate objects such as wheels, trees, bushes, and so on. The researchers intentionally broke some of the lego pieces in order to encourage the children to take different perspectives on the activity, for example, using passive rather than active constructions when discussing the state of the legos. The researchers also added chubby people to the lego set with the aim that the children could refer to the chubby people as agents or objects. All other pieces were randomly chosen. In order to make the activity fun for the children, they were given a choice between two colored envelopes which each contained two suggestions for something to build with legos. Once the children decided which thing they wanted to build, they were given 10 minutes to complete the lego activity. When children asked what the purpose of our study was, they were told that

we were interested in learning about how children play together. All interactions were video and audiorecorded.

2.3. Analysis

The video and audiotapes were used to transcribe the children's talk according to a modified version of CHAT (see MacWhinney and Snow 1990). Videotapes and transcripts were used to first isolate clauses containing verbs. These clauses were then coded as transitive simple, transitive embedded, intransitive simple, and intransitive embedded (see table 1). Existential and possessive clauses, imperatives, as well as singing and pretend talk were excluded from analysis.

2.3.1. Coding: A multi-level coding scheme was used to code all clauses

2.3.1.1. Construction type of clause

Broadly, clauses were coded as transitive or intransitive. Within this broad dimension, clauses were further coded as simple or embedded. The simple form of each frame is what we consider to be a typical representation of that construction. So, for example, a transitive main clause would consist of a subject, verb, and object standing alone. On the other hand, a transitive embedded would not stand alone; the embedded forms are main clauses that co-occur in an utterance to form a larger, more complex utterance.

For example, a transitive simple clause would consist of a clause standing alone as a complete sentence such as "I found a wheel." A transitive embedded clause would consist of a transitive simple clause embedded in an utterance containing multiple clauses. For example, if we look at the example "told you we could do it in five minutes," the clauses "told you" and "we could do it in five minutes" are embedded within a larger sentence structure. The same goes for intransitive clauses, which were coded as either simple or embedded clauses. An intransitive simple clause would consist of a clause standing alone as a complete sentence such as "He fell off." An intransitive embedded clause would consist of an intransitive simple clause embedded in an utterance containing multiple clauses such as "So that means it goes there."

2.3.1.2. Animacy

Subjects and objects were coded as (a) animate (e.g., a person, pet), (b) animate-imaginary (e.g., cartoon character, lego figurine), or (c) inanimate (e.g., puzzle piece).

2.3.1.3. Personhood

Subjects were coded as (a) *self* where the speaker referred to themselves as in "*I* need that piece," (b) *peer* where the speaker referred to a peer as in "*You* gotta hurry up," (c) *joint* where the speaker referred to the self and peer as in "*We* don't know where that one goes," or (d) *other*, where the speaker referred to someone/something beyond the immediate dyad, as in "*My dad* got rid of the dog."

2.3.1.4. Interrater reliability

Reliability in coding construction types was calculated between two independent judges on 23% of the sample. Overall agreement reached a level of .94 (Cohen's k).

3. Results

Three kinds of analyses are presented: First, we examine findings concerning the distribution of constructions, next turning to the analyses of animacy of arguments, and finally, the focus shifts to personhood and animacy.

3.1. Distribution of construction type by age

First we consider the distribution of construction types by age, examining how transitives and intransitives are distributed, as well as how simple and embedded clauses are patterned in transitives and intransitives. Overall, the 4-year-olds used more intransitives (54%) than transitives (46%), while the 7-year-olds used more transitives (59%) than intransitives (40%). Both groups used transitive simple clauses over 80% of the time and intransitive

simple clauses over 60% of the time. Here is a pattern where simple clauses are generally used most often, though a more striking proportion of the time in transitives. It is also interesting to note that the proportions of use for the 4- and 7-year-olds were nearly identical here.

3.2. Animacy

The second level of analysis examines whether there are any animacy differences in the subjects and objects the children used in constructions. This analysis questioned whether children of both age groups would rely on prototypical transitive constructions with animate subjects. The findings suggest that the two groups did not talk about scenes in the same ways.

3.2.1. Transitives

Within transitive simple clauses, both groups used animate subjects well over three quarters of the time (4s: 91%, 7s: 84%). A similar pattern was found for transitive embedded clauses (4s: 90%, 7s: 82%). Both the 4- and 7-year-olds used animate-imaginary subjects quite rarely: less than 5% of the time in simple clauses and 5-8% in embedded clauses. Considering the animacy of objects in transitive simple clauses, children used animate objects only a small percentage of time, with inanimate objects being used by both groups over three quarters of the time (4s: 86%, 7s: 79%). A similar pattern was found for embedded clauses, where the 4-year-olds used inanimate objects 86% of the time and the 7-year-olds, 79% of the time. Here we see a prototype that does not vary much by age or whether it is a simple or embedded clause: The findings for transitives are quite straightforward, where animate subjects are paired up with inanimate objects, regardless of the child's age.

3.2.2. Intransitives

Children's usage of intransitive subjects was quite different than their usage of transitive subjects. First, considering the use of subjects in simple clauses, the distribution of animate and inanimate subjects was more evenly distributed in the intransitive clauses than in transitives. The 4-year-olds used more inanimate subjects than the 7-year-olds in simple intransitive

clauses, the 4-year-olds following the prototype a little more closely than the older children. Again, neither group used many animate-imaginary subjects, the proportional usage for both groups accounted for less than 8% of all subjects (see figure 1).

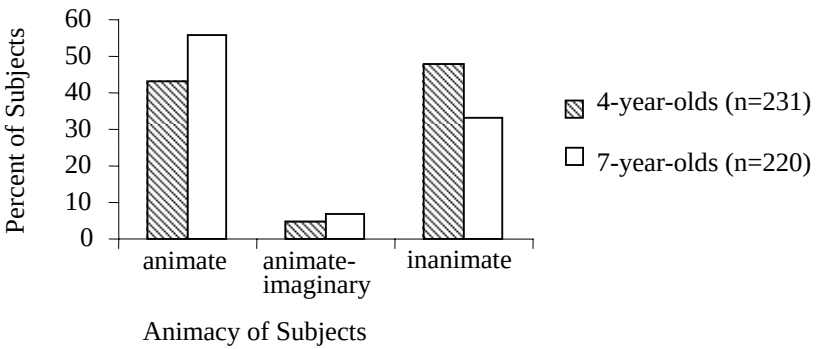

Figure 1. Intransitive simple construction: Percentage of animate vs. inanimate subjects across age

Turning toward embedded clauses, the 4- and 7-year-olds looked very similar here, both groups using animate subjects about 75% of the time, similar to the pattern found in both transitive clause types, where few inanimate subjects were used (see figure 2). This pattern is opposite from data on 2-year-olds' usage of intransitives, where subjects are prototypically inanimate. Proportional usage of animate-imaginary subjects was lower than in simple clauses, occurring less than 5% of the time.

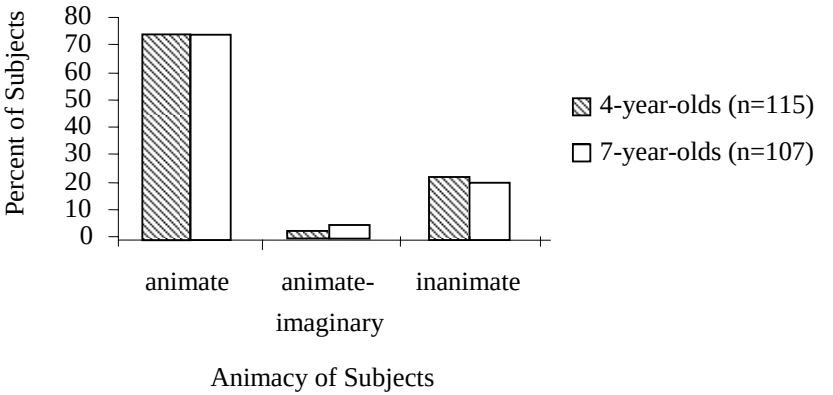

Figure 2. Intransitive embedded construction: Percentage of animate vs. inanimate subjects across age

3.3. Personhood and animacy

The third level of analysis examines which animate subjects the children used. This level also examines age differences in the extent to which a variety of animate subject forms were incorporated into discourse. In prior work, we have found that when talking with caregivers, 2-year-olds mostly reference the self. Here, we wonder if 4- and 7-year-olds are positioning themselves differently with peers (see table 1).

Transitive simple. Looking now just at self and joint references, the 4-year-olds referenced the self 53% of the time, while the 7-year-olds referenced the self 38% of the time, incorporating more joint perspectives (35%) than the 4-year-olds (20%).

Transitive embedded. Here in the transitive embedded, the distributions for both age groups were quite similar, with the foci on self, joint, and other reference. It is interesting that both the 4- and 7-year-olds referenced a wider variety of perspectives in embedded, rather than simple clauses. This mirrors the object animacy findings from the transitive embedded, where children incorporated more animate objects into the embedded rather than simple clause type.

Intransitive simple. Here, the 4-year-olds referenced inanimate subjects 48% of the time. Though the 7-year-olds also referenced inanimate subjects most often (33%), they also incorporated a wider variety of perspectives to

position themselves in peer discourse, specifically, peer (11%), self (27%), and joint references (19%).

Intransitive embedded. Distributions for the two groups were very similar in terms of joint, animate other, and peer reference. These data suggest that both 4- and 7-year-olds do not use the intransitive embedded construction restrictively. Rather, both groups of children used this construction to incorporate a number of perspectives, using it to reference the self about 40% of the time. This is quite different from the intransitive simple, where children were referencing the self only about 25% of the time.

Table 1. Children's subject use across construction types and percentage of subject forms used within each construction type

4-year-olds	Transitive (n=294)		Intransitive (n=346)	
Subject Form	Simple (n=252)	Embedded (n=42)	Simple (n=231)	Embedded (n=115)
Self	53%	40%	25%	40%
Joint	20%	22.5%	11%	15%
Other				
animate	12%	20%	11%	11%
inanimate	2%	5%	48%	21%
Peer	13%	12.5%	5%	13%
7-year-olds	Transitive (n=475)		Intransitive (n=327)	
Subject Form	Simple (n=409)	Embedded (n=66)	Simple (n=220)	Embedded (n=107)
Self	38%	42%	27%	40%
Joint	35%	26%	19%	14%
Other				
animate	10%	23%	10%	13%
inamimate	6%	4%	33%	21%
Peer	11%	5%	11%	12%

4. Discussion

Following prior work, the present study suggests that children use transitives and intransitives with certain prototypical meanings. For instance, transitive constructions linked up a prototypical scene involving agentive subjects and inanimate objects. On the other hand, intransitives were more open to a variety of perspectives, simple clauses used prototypically for inanimate subjects (see example 1), and embedded clauses often used with animate subjects (see example 2). Animate-imaginary subjects were used only rarely. Reflecting our prior work with 2-year-old English-, German-, and Hindi-speaking children (see Budwig 2001; Narasimhan, Budwig, and Murty 2005), we found with 4-and 7-year-olds that intransitives were open to more positioning strategies than transitives.

Our data also suggest that the children studied were less likely to link the use of embedded clauses with particular prototypical scenes, and in fact it might be the case that embedded clauses play a role in freeing children from the more prototypical uses found in simple transitive and intransitive clauses (also see example 2). Taken together, these findings suggest that children pay attention to meaning during construction use, particularly in terms of how they choose to situate the self and other, as well as their agentive roles in light of ongoing communicative demands.

(1) Ray (4:1) and Mel (3:11) talk while putting a puzzle together.
Mel: it doesn't go here.
Researcher: yeah look.
Ray: it does.
Ray: see!

(2) Kerry (7:6) and Jane (7:2) talk while putting a puzzle together.
a) Jane: [>I know but where can we put the pieces?]
b) Kerry: [<I know but look my pieces are up there].
c) Kerry: my pieces are up there.
d) Kerry: I just need the piece that connects that.
about a minute later...
e) Jane: oh and I can't find any that match up with these.
f) Jane: now how did this go again?
g) Kerry: see there's no corner piece that would match.
h) Kerry: I have gone over all this.
i) Jane: I found like-

j) Jane: I have like all these pieces and they're not matching with anything.

Overall, we find evidence in peer discourse that meaning restrictions play a role in the structure of constructions. At age 4, children link the use of particular constructions to specific meaning clusters. During the transition from 4 to 7, children begin to engage in more persuasive discourse and come to recognize the nuances of communicating with their peers, appearing to find it valuable to anchor discourse in multiple points of view. Over the preschool years, children extend from talk about the self (see example 3) to strategically using talk about others (see example 4) to position the self and other distinctly in peer discourse.

(3) Edie (4:6) and Beth (4:1) talk while playing with legos.
Beth: I need that... this for a house.
Beth: I don't need that.
Edie: ooh ooh horsies horsies
Beth: I get that one here.
Beth: Spaceship I don't need.
Edie: Spaceship I don't need.
Beth: mm hmm.
Edie: Put it in.
Beth: Tree... I need a tree of blue.

(4) Mark (7:3) and John (7:5) are playing with legos.
Mark: Cool we get to use kineks.
Researcher: You know how some people don't put their toys in the right place.
Mark: Here we can make that for like open the door and slide the door.
John: (laughs).
John: Well well we can just spread out these wheels.
John: And ya know.

Thus, as children come to interact with different communicative partners, changing discourse pressures result in new communicative strategies. These findings highlight the protracted nature of coming to use constructions to adopt a prototypical perspective and salient deviations when construing events in discourse. It is important to emphasize that children are not just using constructions in static ways, but over the school-

age years, children are employing them to position the self and other in discourse for a wider array of discursive purposes.

The present study presents only a general analysis of the development in constructions beyond the preschool years. Future directions call for a longitudinal examination of the development from earliest uses of transitive and intransitive constructions to the developments seen in the current study. We also are currently working on experimental assessments of production with novel verbs embedded in natural settings that will aid in examining these issues over the preschool and early elementary years.

Note

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Another look at French split intransitivity

Michel Achard

1. Introduction

Since Perlmutter's (1978) Unaccusative Hypothesis proposal, the basic idea behind most accounts of split intransitivity is that intransitive predicates are assigned different syntactic or semantic structures on the basis of their different behaviors in specific contexts. Their membership in the "unergative" or "unaccusative" class is determined by their response to a battery of language-specific test constructions.[1] This paper questions the validity of those constructions for French. It argues that "object raising" and "*croire* union" (Legendre 1989) do not constitute valid structural tests for the unaccusative/unergative distinction once their attested usage in text is considered. In their natural context of use, both of these structures emerge as meaningful constructions in the sense of Langacker (1991) and Goldberg (1995), not empty diagnostic templates. The distribution of the predicates that participate in them is therefore best explained by a thorough examination of their specific lexical semantics, rather than invoking one distinguishing feature they share as a class. The main focus of this paper is to show that the recognition of the meaning of the test constructions renders a syntactic account of split intransitivity in French difficult to maintain. It also more briefly considers the consequences of the proposed solution for semantic analyses.

This paper is organized in the following fashion: Section 2 presents the two constructions under consideration. Section 3 investigates the usage of the object raising and *croire* union constructions. Section 4 concludes the presentation by assessing the relevance of the results obtained for syntactic and semantic accounts of the unaccusative/unergative distinction.

2. Test constructions

Legendre (1989) presents nine eclectic contexts in which French intransitive verbs exhibit different behavior, and she attributes that behavior to their unaccusative or unergative structure.[2] More specifically,

"unaccusatives take an initial 2 [direct object in Relational Grammar terminology] while unergatives take an initial 1 [subject in Relational Grammar]" (Legendre 1989: 95) [insertions in brackets mine]. For the sake of brevity, this paper only focuses on the two syntactic constructions of object raising in the context of the *faire* 'make' construction (henceforth object raising), and *croire* union.

2.1. Object raising

Legendre (1989: 98) claims that "Transitive 2's freely undergo object raising whether or not the structure contains the causative predicate *faire* 'make'." With respect to intransitive verbs, unaccusatives are argued to occur freely in the construction, while unergatives are deemed impossible. This is illustrated in (1) and (2) [respectively (11k) and (12a) in the original] (Legendre 1989: 102):

(1) *Les prix seront faciles à faire augmenter*
'The prices will be easy to make increase'

(2) **Le président est difficile à faire agir*
'The president is difficult to make act'

Because it contains an initial 2, the unaccusative *augmenter* 'increase' is felicitous in (1). *Agir* 'act' on the other hand is unergative. Its subject is never a 2, which makes the sentence in (2) infelicitous.

2.2. *Croire* union

Croire 'believe' is analyzed as a raising verb in Ruwet (1972) and Kayne (1975), and as a union predicate in Fauconnier (1983). When it is in main verb position, the object of an embedded transitive predicate (but importantly not its subject) can raise to the main clause. This is illustrated in (3). The example in (3b) is adapted from Legendre (1989: 114):[3]

(3) a. *Il croyait qu'on avait éliminé son adversaire*
'He believed that someone had eliminated his opponent'
b. *Il croyait son adversaire éliminé*
'He believed his opponent eliminated'

As far as intransitives are concerned, unaccusatives are felicitous in the construction, but unergatives are not. This contrast is illustrated in (4) and (5):

(4) a. *On croyait la neige fondue*
'We believed the snow melted'
b. *On croyait le magasin ouvert*
'We believed the store opened'

(5) a. **On croyait le président agi*
'We believed the president acted'
b. **On croyait l'homme parlé*
'We believed the man spoken' (Legendre 1989: 116–117)

This kind of argument asserts that the structure of the embedded predicates alone is responsible for their participation in both constructions. However, in order for it to be truly convincing, one needs to establish unequivocally that no other factor can possibly be responsible for the distribution of intransitive predicates. Object raising and *croire* union can only be considered valid test constructions if the predicates that appear in them are so semantically diverse that their behavior could not possibly be attributed to semantic factors. In the next section, I show that this is not the case. The two constructions do not emerge as broad structural patterns inclusive of a large array of semantically diverse predicates whose similar behavior can only be explained in syntactic terms. Rather, attested usage reveals each construction as a narrowly defined island, often with a very specialized semantic function. The embedded predicates are therefore selected for their semantic import, not their structural properties.

3. The constructions in context

The data for the investigation of the usage of the constructions comes from journalistic prose. A corpus of 70,013,327 words composed of articles from the news agency Agence France Press (AFP) was searched using MonoConc. Unless indicated otherwise, the examples in this paper are taken from this corpus.

3.1. Object raising

Two characteristics of the object raising construction immediately spring into view when one considers it in its natural context. The first one is its extreme scarcity. Only twenty-five examples were attested in the corpus, eighteen involving transitive verbs, and seven involving intransitive verbs. The second characteristic of the collected data is the great semantic consistency of the twenty-five instances of the construction. The examples in (6) and (7) present transitive verbs; the ones in (8) and (9) present intransitive verbs.

(6) *L'avocat David Bruck, qui défend Susan Smith, compte plaider un coup de folie … Cette stratégie de défense risque toutefois d'être* ***difficile à faire admettre*** *au jury d'assises.*
‘David Bruck, the lawyer who represents Susan Smith, intends to use the insanity plea … This defense strategy might however be difficult to make admit to the jury [for the jury to admit].’

(7) *Le secrétaire général de l'ONU, Boutros Boutros-Ghali, a estimé lundi qu'un embargo sur les armes à l'encontre du Nigeria serait* ***difficile à faire respecter****, quelle que soit la volonté des Nations unies …*
‘The general secretary of the United Nations, M. Boutros Boutros-Ghali, estimated on Monday that an embargo on the arms destined to Nigeria would be difficult to make respect [enforce] regardless of the United Nation’s position...’

(8) *M. Kozyrev a estimé que la guerre froide avait pour origine l'incompatibilité entre le système communiste et la démocratie, et que la nouvelle Russie "est un allié naturel de la démocratie dans le monde." Mais il y a des "résidus" de la guerre froide dans les bureaucraties des deux pays et "cela n'est pas si* ***facile à faire disparaître****", a-t-il dit.*
‘M. Kozyrev voiced the opinion that the origin of the cold war was the incompatibility between the communist system and democracy, and that new Russia is “a natural ally of democracy in the world.” However, there is a residue of cold war in the bureaucracies of both countries, and “it is not that easy to make [it] disappear,” he said.’

(9) *Au delà de la motion de censure, l'opposition veut tenter d'atteindre Boris Eltsine …. "Le vote ne recueillera que 210-215 voix (contre une majorité nécessaire de 226 voix), mais nous lancerons également mercredi une procédure de destitution du président Eltsine" a affirmé le député. Cette procédure est cependant extrêmement* ***difficile à faire aboutir****, selon la Constitution.*
'Beyond the censorship motion, the opposition wants to try to get to Boris Yeltsin …. The motion will only receive 210-215 positive votes (against a required majority of 226), but on Wednesday "we will also start a procedure to impeach President Yeltsin" the representative added. However, according to the constitution, this procedure is extremely hard to make succeed [see to its completion].'

It seems clear from these four examples alone that the usage of object raising does not conform to its presentation as a test construction. First, the range of predicates (transitive or intransitive) that participate in it is very limited. Second, regardless of the argument structure of the embedded predicate, almost all the instances of the construction describe the same kind of event. I will follow the principles of Cognitive Linguistics (Langacker 1991; Goldberg 1995) and propose that the construal of that specific event represents the meaning of the construction. Consequently, given the semantic import of the construction itself (to be characterized in the next paragraph), it seems reasonable to suggest that the constraints imposed on the different verbs are imputable to their lexical semantics, and not their argument structure. Straightforwardly, the object raising construction favors the predicates that are compatible with its own semantic import regardless of their argument structure. In order to argue for this position, we need to i) characterize the meaning of the construction, and ii) show that the argument structure of the embedded predicate is largely irrelevant to it.

In the context of the *faire* construction, object raising profiles a very specific causative event. In general terms, it presents the evaluation of the induced manipulation of a social object (often the degree of difficulty of the induction). A brief examination of the component parts of the construction allows us to make this abstract definition more concrete. The raised objects overwhelmingly describe administrative constructions that pertain to our political, social, or judicial organization. A representative list includes *l'application de cette mesure* 'the application of this measure', *cette position inflexible* 'this inflexible position', *cette proposition* 'this proposal', *un embargo* 'an embargo', *un message* 'a message', *cette*

stratégie de defense ‘this defense strategy.’ In the object raising construction, these administrative objects are proposed to a given community for them to manipulate, that is, to recognize, accept, or utilize. The embedded predicate indicates the kind of manipulation the community is expected to perform. The six transitive verbs encountered in the data only present two kinds of administrative manipulations. *Respecter* ‘respect’, *admettre* ‘admit’, *comprendre* ‘understand’ pertain to the integration of the new administrative object into someone’s system (or everyday life). *Passer* ‘pass’, *adopter* ‘adopt’, *appliquer* ‘apply’ are more procedural because they involve the formal passage through a more official mechanism. The intransitive verbs exhibit similar semantic consistency. *Disparaître* ‘disappear’ describes the elimination of an administrative object, *aboutir* ‘come through’ simply indicates the natural path a procedure takes when it is successful.[4]

The recognition of the meaning of the construction does not directly address the unergative/unaccusative distinction. After all, the intransitives attested in the construction are indeed unaccusative, and the similarity between the unaccusative and transitive cases seems to argue in favor of a hypothesis where the two classes are structurally related. However, two facts strongly argue against invoking the argument structure of a given predicate to explain its presence in the object raising construction. The first one has already been mentioned. The argument structure is a very general structural characteristic of a predicate, which we would expect to cut across a variety of semantic fields. In the restricted semantic environment of the object raising construction, the most pertinent question to ask is not why transitive and unaccusative verbs occur together to the exclusion of unergative predicates, but why the distribution is restricted to such a small number of semantically related verbs. The answer clearly invokes the semantics of the attested predicates rather than their argument structures.

The second argument is that in the context of the object raising construction, the contrast between transitives and intransitives seems to be neutralized. The main difference between the two classes of predicates concerns the presence of an additional participant (the causee) with transitive verbs. However, the object raising construction places a strong emphasis on the raised object to the detriment of the causee. Achard (2000) argues that the raised variant of a raising construction is predominantly chosen when the nominal to be raised is highly topical. This construction is no different. The raised object not only represents what the utterance is primarily about, but its intrinsic properties constitute the main factor that determines the outcome of the manipulation. On the other hand, the causee

receives little emphasis. Most of the time, it is not even mentioned. In fact, the causee is only mentioned four times in the corpus. The first one has already been introduced in (6). The phrase *au jury d'assises* 'to the court' specifies the entity in charge of accepting the lawyer's strategy. Another example is given in (10) where the causee is underlined for convenience sake:

(10) *L'administration Clinton est en faveur du renouvellement à la Chine de la clause de la nation la plus favorisée, mais l'affaire sera* ***difficile à faire adopter*** *par le congrès à majorité républicaine, a indiqué mardi à Hong Kong le secrétaire américain au Trésor Robert Rubin.*
'The Clinton administration is in favor of the renewal of China's status of favored nation, but the issue will be difficult to make adopt by the Republican Congress the American Secretary of Treasury Robert Rubin said in Hong Kong on Tuesday.'

The specific mention of the causee is rendered necessary by its contrastive nature which directly bears on the outcome of the induced manipulation. We might expect a democratic Congress to be more sympathetic to a democratic president, and thus more likely to yield to his desires. Outside such cases, however, the lack of mention of the causee seriously minimizes the difference between transitive and intransitive verbs, and casts serious doubt about the relevance of the argument structure of the embedded predicate for the object raising construction.

A consequence of that irrelevance is that in the cases where a given predicate has a transitive and intransitive sense, it is often almost impossible to tell them apart. This is the case in the corpus with *passer* 'pass'. The verb has the transitive sense of *passer une loi* 'pass a law' for example, but it also has another unaccusative (perhaps more colloquial) sense of something being hard to accept, as for example in *le gâteau est trop lourd, il ne passe pas* 'the cake is too heavy, it won't pass'. These two senses are virtually undistinguishable in the context of the object raising construction, as illustrated in (11) and (12):

(11) *Clause de la nation la plus favorisée: le renouvellement sera* ***difficile à faire passer****, selon M. Rubin.*
'Status of most favored nation: The renewal will be difficult to make pass, according to M. Rubin.'

(12) *M. Préval a précisé que les deux premières entreprises privatisées seraient Le Ciment et la Minoterie … "Nous avons la conviction que le privé est meilleur gestionnaire que l'Etat," a-t-il ajouté, soulignant cependant que la privatisation était "un concept* ***difficile à faire passer*** *en Haïti."*
'M. Preval specified that the first two companies to be privatized would be Cement and Flour Mills … "We are convinced that the private sector is a better manager than the government," he added, while noting, however, that privatization was "a concept difficult to make pass in Haiti."'

Outside of context, it is hard to tell if *passer* in (11) is transitive or intransitive. It is the context of other articles (see the text of (10) about the same topic) that allows us to interpret it as the transitive sense of the verb with the causee (most likely the United States Congress) left unspecified. However, it would also be perfectly plausible to interpret it as the intransitive *passer* with a meaning close to *accepter* 'accept', where it could easily refer to the difficulty to make the American public accept China's status. In a similar way, we can safely treat *passer* in (12) as an intransitive (unaccusative) predicate because we know concepts are not usually voted on. This information, however, is provided by the context and our world knowledge, not the construction itself.

To briefly summarize, the data presented in this section show that the behavior of the embedded predicate in the object raising construction cannot be considered a valid diagnosis for its structural properties, because in the large majority of the cases, the argument structure of that predicate is simply irrelevant to that construction. The selectional restrictions are imposed by the necessary compatibility between the meaning of the construction and that of its component parts.

3.2. *Croire* union constructions

Consistent with the methodology previously employed for the object raising construction, this section discusses the meaning of *croire* union and shows that the construction is also primarily concerned with the semantic import of its component parts. More specifically, *croire* union presents the belief held by some conceptualizer that the raised nominal has gone through some process before settling into a stable state. The only possible

embedded predicates are therefore those capable of expressing that stable state.[5]

The fact that the belief is about the raised nominal is revealed by the latter's high degree of topicality (Achard 2000). For example, out of the one hundred and fourteen instances of raised nominals considered, fifty-six are relative pronouns that directly follow their antecedents, and are thus strongly topical. This situation is illustrated in (13). In (13), the past participle *perdue* 'lost' is predicated of the relative pronoun *que*, which directly follows its antecedent *efficacité* 'efficiency'.

(13) *Le retour au premier plan de la Scuderia n'était-il qu'un simple feu de paille ou, au contraire, les nouvelles mesures adoptées au nom de la sécurité permettaient-elles à Ferrari de retrouver une efficacité que l'on* ***croyait*** *à jamais* ***perdue***?
'Was the return of the Scuderia merely a flash in the pan, or to the contrary, do the new measures adopted in the name of security allow Ferrari to recover an efficiency we thought [was] lost forever?'

The stability of the state the raised nominal has reached is clearly indicated by the semantic consistency that exists between the transitive and intransitive verbs that occur in the corpus. Thirty-nine instances of transitive constructions were attested in the *croire* union construction, representing thirty different verbs. These verbs can be neatly arranged in four related semantic categories. The first one describes the stable situation that follows a traumatic event (often a battle). The raised object is viewed as a reward. The verbs include *maîtriser* 'master', *gagner* 'win', *récompenser* 'reward', *conquérir* 'conquer', *acquérir* 'acquire', *atteindre* 'reach'. This semantic grouping is illustrated in (14):

(14) *Des combats se déroulent aussi autour de la localité de Muaka, au centre-ouest, à l'ouest de Gitarama, que l'on* ***croyait "conquise"*** *la veille par le FPR, a-t-il déclaré.*
'Fighting also went on around the town of Muaka, in the western center, west of Gitarama which we believed [was] "conquered" by the FPR the day before he declared.'

The second kind of predicates describes the result of a violent process. Some force was required in order to overcome the situation evoked by the raised nominal. This represents the largest category, and includes the following verbs. *Abolir* 'abolish', *éradiquer* 'eradicate', *terminer* 'finish',

éteindre ‘extinguish’, *dissiper* ‘dissipate’, *éliminer* ‘eliminate’, *détruire* ‘destroy’, *conjurer* ‘overcome’, *régler* ‘solve’, *rompre* ‘break’, *boucler* ‘close’, *calmer* ‘calm’, *perdre* ‘lose’. An example of this semantic category is given in (15):

(15) *Des centaines de familles ont commencé à affluer à Bombay (ouest), fuyant une épidémie de peste pneumonique…. Un responsable des services de santé de Surat, une ville industrielle de 2 millions d'habitants située à 270 km au nord de Bombay, a indiqué qu'au moins 100 personnes avaient été tuées par le fléau que l'on* ***croyait éradiqué*** *depuis des années.*
‘Hundreds of families began to rush to Bombay (west) to escape an epidemic of bubonic plague …. A health official from Surat, an industrial city of 2 million people 270 kilometers North of Bombay, indicated that at least 100 people had been killed by the disease which we believed [had been] eradicated years ago.’

The third kind of transitive predicates describe a situation that endures despite attacks against it. The following verbs are attested: *préserver* ‘preserve’, *assurer* ‘assure’, *épargner* ‘spare’, *réserver* ‘reserve’, *cantonner* ‘restrict’, *oublier* ‘forget’, *promettre* ‘promise’, and *menacer* ‘threaten’. This semantic grouping is illustrated in (16):

(16) *Le plus célèbre de ces singes, Kanzi, … a démontré ces dernières semaines son aptitude à maîtriser des techniques que l'on* ***croyait*** *jusqu'a présent* ***réservées*** *aux hommes, notamment la fabrication d'outils en pierre.*
‘The most famous of these monkeys, Kanzi, … showed this past few weeks his capacity to master techniques that we so far believed [were] reserved to humans, particularly the fabrication of stone tools.’

Finally, a class of verbs composed of *posséder* ‘possess’, *envoûter* ‘curse’, and *ensorceler* ‘bewitch’ describe a situation where the observed stability is the result of an occult power. This class is illustrated in (17):

(17) *Selon la police, la mère et la grand-mère de l'enfant auraient organisé dimanche avec deux amis une cérémonie destinée à exorciser la petite fille qu'elles* ***croyaient possédée*** *par le démon.*

‘According to the police, the child’s mother and grandmother would have organized a ceremony on Sunday with two friends in order to exorcise the little girl whom they believed [was] possessed by the devil.’

The intransitive verbs that participate in the construction also present great semantic consistency. Twenty instances of intransitive constructions were attested, representing eight different verbs. Among those verbs, three categories have been isolated. The first one describes death, and includes the verbs *décéder* ‘decease’, and *mourir* ‘die’. The second one evokes a situation that comes into view, with the verbs *venir* ‘come’, *revenir* ‘come back’, and *arriver* ‘arrive’. The third one presents a situation that is fading from view, and includes *disparaître* ‘disappear’, *passer* ‘pass’, and *envoler* ‘fly’. These categories are respectively illustrated in (18)–(20):

(18) *Ce premier roman était remarqué d'emblée pour sa force de moraliste et son talent de conteur acerbe. Son héros, que l'on* ***croyait mort*** *au cours d'un bombardement, revient dans son douar et prend conscience que sa présence devient gênante pour tous.*
‘This first novel was noticed right away for its moral strength and its talent of acerbic storyteller. Its hero whom one believed [was] dead in a bombing comes back to his douar, and realizes that his presence disturbs everybody.’

(19) *Un homme d'affaires de Hong Kong, qui* ***croyait*** *sa dernière heure* ***arrivée*** *au moment du tremblement de terre a affirmé qu'il ne savait plus quoi faire, ne parlant pas le japonais.*
‘A Hong Kong businessman who believed his last hour [had] arrived when the earthquake hit said that he didn’t know what to do since he didn’t speak Japanese.’

(20) *Ce projet a été mis au point alors que sont exposés actuellement pour la première fois au musée Pouchkine à Moscou 63 toiles de maîtres ramenées d'Allemagne à la fin de la guerre, parmi lesquelles des Manet, Degas, Renoir et un "Portrait de Femme" de Goya qu'on* ***croyait disparu****.*
‘This project was designed while for the first time the Pouchkine museum in Moscow hosts 63 canvas by masters brought back from Germany at the end of the war, among which some Manet, Degas,

Renoir, and a portrait of a woman by Goya that we believed [had] disappeared.'

The semantic consistency and the reduced number of the predicates attested in the data constitute strong indications that the constraints that preside over their distribution in the *croire* union construction are independent from their argument structure. In fact, it is quite easy to create examples where transitive and unaccusative predicates are infelicitous in the construction. This is illustrated for transitives in (21), and for unaccusatives in (22):

(21) a. **On croyait le film vu*
'We believed the movie seen'
b. **On croyait le voisin frappé*
'We believed the neighbor hit'

(22) a. **On croyait le document existé*
'We believed the document existed'
b. **On croyait le soleil brillé*[6]
'We believed the sun shined'

Furthermore, the one hundred and fourteen instances of embedded predicates in the corpus are distributed almost evenly between several grammatical categories, namely thirty-four adjectives, twenty-one predicate nominals, thirty-nine transitive verbs, and twenty intransitive verbs. It therefore seems reasonable to propose that the lexical semantics of a given predicate determine its selection in the construction.

As was the case for the object raising construction, the *croire* union construction is much more limited in range than its status as a test construction would have us believe. This limited semantic range sheds some serious doubt on its value as a test construction for the unaccusative/unergative distinction, because the structure of the embedded predicate does not appear to be the most compelling reason for the distribution of the different verbs in the construction. Here again, I argue that the restrictions on the distribution of the embedded predicate are imposed by the semantics of the construction rather than by the argument structure of the embedded predicate. A structural account would find it difficult to explain why only a selection of transitive and unaccusative verbs are felicitous in the construction since all share the same structure. On the other hand, a solution based on the compatibility between the meanings of the embedded

predicate and that of the construction naturally accounts for the attested distribution.

4. Conclusion: Implications for a global account of split intransitivity

The results obtained in this paper show that the class of constructions that can be used as a diagnosis for the unergative/unaccusative distinction in French is not as reliable as previously believed. The behavior of a given predicate is often inconsistent across test constructions. This is illustrated in (23), where (23a) is repeated for convenience:

(23) a. *Les prix sont faciles à faire augmenter*
'Prices are easy to make increase'
b. **On croyait les prix augmentés*
'We believed the prices increased'

Augmenter 'increase' behaves as an unaccusative verb in (23a), but not in (23b). Furthermore, certain verbs unanimously recognized as unaccusatives do not act as such in the structural tests. This is noticed by Legendre (1989: 153) who writes: "In a sense, it is striking that the verbs which are most often cited as typical unaccusative verbs, namely exist, be, and go, are precisely the ones which cannot be determined by productive tests."

The lack of systematic behavior the French predicates exhibit in different constructions makes it difficult to propose a "global" account of split intransitivity where the presence of a specific feature (or a set of features) in a given predicate determines its class membership. This is equally true for syntactic and semantic solutions. The problems of the structural analyses have already been considered, but it seems equally difficult to isolate a (set of) semantic parameter(s) that explains predicate distribution across a set of meaningful constructions. Rather, the results reported here argue in favor of a more "local" kind of semantic solution, where the semantic import of each construction is evaluated relative to that of the predicates that participate in it. In this view, the distribution of intransitive predicates in French becomes a mere matter of the necessary semantic compatibility between specific constructions and their component parts. This methodology seems better suited to describe the seemingly unreliable character of French "test" constructions.[7]

Despite its preliminary interest, the analysis presented here is not sufficient to question the validity of the unaccusative/unergative distinction

for several reasons. First, only two test constructions have been investigated. Even though I believe that the methodology adopted in this paper could easily be extended to the other constructions (see note 2), the results cannot be generalized to those constructions in the absence of careful investigation. Secondly, because of the genre-specific properties of the corpus, the semantic groupings reported in section 3 can only be viewed as representative of written journalistic discourse. I am not certain that the object raising and *croire* union constructions would exhibit the same semantic range in different genres, but it would be interesting to see if similar clusters of related predicates do occur in different contexts. Finally, the results only pertain to French, and it would be dangerous to assume their relevance to other languages without thorough examination. In Italian for example, which figures prominently in the literature on split intransitivity (Burzio 1986; VanValin 1990; Kishimoto 1996), the tests for unaccusativity/unergativity seem more general and stable. At the very least, however, the results obtained in this paper do point to the need for considering the semantic fit between the intransitive predicates and the constructions in which they occur before resorting to a more global treatment of split intransitivity.

Notes

1. For syntactic analyses in different theoretical frameworks, see Perlmutter (1978), Olié (1984), Burzio (1986), Legendre (1989), Levin and Rappaport Hovav (1995). For semantic accounts, see Van Valin (1990), Kaufmann (1995), Kishimoto (1996).
2. The other tests presented in Legendre (1989) involve participial absolutes, reduced relative clauses, cliticization of embedded 3's in causative unions, auxiliary selection, parallel transitive structures, nominalizations, and expression of stativity.
3. If the embedded predicate is in the passive voice, it is the passive subject that raises, as illustrated in (i) and (ii):
   (i) *Il croyait que son adversaire était éliminé*
   'He believed that his opponent was eliminated'
   (ii) *Il croyait son adversaire éliminé*
   'He believed his opponent eliminated'
4. The examination of additional data from different genres might reveal a higher-level semantic realization, perhaps, as a reviewer suggests, based on the notion of existence relative to some function. Such generalization, however, would be premature at this stage of the analysis. In any case, the crucial point with respect to the account presented in this paper is the meaningful nature of the

construction. The identification of the most appropriate level of abstraction at which this meaning is characterized is left for further research.

5. The unraised variant of the *croire* construction [see (3a) for example] does not present a statement about the raised nominal, but a statement about the world, or a "proposition" (Langacker 1991; Achard 1998). Because any event can be reported as a proposition, there are no constraints on the nature of the embedded predicate.
6. Recall that an important characteristic of the semantics of the construction is that the configuration the raised nominal settles in needs to be the endpoint of an ongoing process. This explains why such predicates as *exister* 'exist', or *briller* 'shine' are infelicitous despite their stable character.
7. Gross (1979) argues in favor of this position on a much larger scale.

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BORING: It's anything but

Barbara Shaffer

1. Introduction and scope of the paper[1]

The aim of this paper is to describe the semantic polysemy associated with a set of variants of the word commonly glossed BORING in American Sign Language (ASL). I will argue that each variant represents a semantic extension of the central word BORING. While each variant is phonologically and semantically distinct, each still retains some of the form and function of the source word.

A secondary, related goal of this paper is to illustrate that the interaction between the expression of speaker subjectivity, information ordering and clausal scope in ASL and the various uses of BORING. Finally, the role of iconicity in the polysemy of BORING will be discussed.

In section 2, I situate the discussion within the framework of Cognitive Linguistics. The dataset is described in section 3. The remainder of the paper illustrates the various discourse meanings of BORING.

2. Cognitive Linguistics

A fundamental tenet of Cognitive Linguistics is that grammar is inherently meaningful. Speakers construe events and situations in different ways for differing purposes and these construal variations are coded in the grammar. These differences in construal are marked at the morphological, lexical, syntactic and discourse levels, which often leads to polysemy. Tuggy notes that "(i) Polysemy is rampant; (ii) polysemous meanings are related in multiple, reasonable, even systematic ways; (iii) context is necessary for establishing and maintenance of these meanings and for choice among them; (iv) yet this does not warrant a deterministic account of those meanings such as might allow them to be omitted from the theoretical lexicon because of their relation to more basic meanings or to context. The meanings are neither arbitrary nor inevitable with respect to each other and to context; they are only reasonable (Tuggy 2003: 324). Polysemy is to be expected. It cannot be fully appreciated unless it is viewed from a discourse

perspective. And, in fact, careful consideration of polysemy can tell us much about the nature of meaning, and meaning change in a given language.

The ASL word commonly glossed BORING has several phonological variants as well as a number of distinct discourse functions. While the source lexeme is an adjective and its scope is limited to the noun phrase, several of the variants have clausal scope, and refer to the speaker's attitude toward the proposition as a whole. This scope change will be discussed in section 5.

3. Dataset

The data for this study were gathered from two main sources. First, conversational data were gathered from commercially produced videotapes. The videotapes were chosen using several criteria. All conversational materials were designed to demonstrate ASL as native signers use it. Second, with one exception, each had at least two discourse participants seated in clear view of each other. Finally, each videotape explicitly states that it consists of spontaneous, unrehearsed conversations in American Sign Language.

The second main source of data for this study came from the insights of two deaf consultants. The consultants were chosen based on the following criteria:

a) each considers ASL to be his or her first language;
b) each acquired ASL from Deaf parents;
c) each identifies him or herself as a Deaf member of the Deaf community;
d) each is considered by other members of the Deaf community to be generally representative of typical, culturally appropriate ASL signers.

The consultants were used to verify the grammaticality of dataset utterances and to provide input into the semantic and pragmatic judgments made.

4. The source adjective BORING in ASL

BORING is produced with the index finger of the dominant hand twisting at the side of the nose (see figure 1). Commonly in discourse, it is accompanied by non-manual marking including a '-th' on the mouth and exhalation of breath (although this is not seen in the citation form shown in figure 1). In its prototypical form BORING has a limited range of discourse functions. It is used as an adjective with meanings such as 'boring', 'dull' or 'uninteresting'. It is most common with first person referents and is used to indicate that someone is bored or finds something boring. At its core, BORING expresses that the signer has disinclination toward the propositional content. It can modify animate and inanimate nouns. Crucially, prototypical uses of BORING are generally used only if the speaker has some basis for the judgment. I will return to this point shortly.

Figure 1. Prototypical BORING or $BORING_1$

Examples (1–3) below demonstrate prototypical uses of BORING. For the remainder of the paper BORING has a notation indicating if it is prototypical BORING ($BORING_1$) or one of the variants (such as $BORING_2$ and so on) Example (1) below, which is taken from the videotaped conversational data, shows a common, prototypical use of BORING. Here, the signer is describing weekly music lessons that he and his deaf classmates had to endure when they were young. The meaning of BORING here is fairly straightforward; the signer did not find the music lessons engaging or purposeful. The listener gets the impression it is not an experience the signer would want to repeat. Simply put, he found them boring.

(1) TEACHER PLAY-PIANO
FEEL CL: hands on piano
HALF-HOUR CL: hands on piano
[DO-DO]- WH-Q $BORING_1^2$
'For a half an hour we had to put our hands on the piano while the teacher played it. I didn't understand what the point was. It was boring.'

In (2) the signer is telling a story about a king and states that the king was bored and wanted to do something interesting.

(2) HAPPEN ONE DAY KING WHO CONTROL AROUND CL: around an area THAT ISLAND AREA CL: around an area
LITTLE.BIT $BORING_1$ THINK IDEA EXCITE SOMETHING SPECIAL
'One day the king of the island was bored so he tried to think of something interesting to do.'

Example (3) below is from a story about several students (including the narrator) being caught hitchhiking and having to gather small rocks as a form of punishment.

(3) PUNISH WHAT MUST PICK.UP ROCKS+++
BACK IN SCHOOL BACK+
SMALL HILL
PICK+++ ROCKS DO-DO $BORING_1$
MUST BRING PUT-in WHEEL BARROW
$BORING_1$
'Our punishment was to pick up rocks (by hand) on a hill behind the school. It was boring. We had to put them in a wheelbarrow. It was boring.'

In (1) and (3) BORING has a first person referent (in both cases a plural 'we'), while in (2) BORING refers to the king's feeling.

Each example is seen in a narrative of an event that takes place at some past time. In each of the first person examples above, the semantic agent has some experiential basis for using BORING to express his or her disinclination. In the case of example (2), the narrator describes the king's affective state. Consultants suggested a first person use of BORING without either actual experience or observed experience would not be

felicitous. An epistemic marker such as SEEM, FEEL or KNOW would be needed in such a case. This is similar to the situation with English where "Latin is boring" is used when one has at least some experience with Latin, while "Latin would be boring" is more appropriate where one has no experience but is making an assumption. This experiential component is also germane to the discussion of the variants of BORING described below.

5. Variants of BORING

Many examples of BORING in the dataset diverge from prototypical BORING. The first variant of BORING under investigation is referred to here as $BORING_2$. It is an extension of $BORING_1$ and is produced in a manner similar to $BORING_1$, with the addition of an extended pinky finger. $BORING_2$ is seen in figure 2.

Figure 2. $BORING_2$

In example (4) below, the signer describes a discussion she had with her parents about her wedding and her thoughts about a traditional wedding ceremony. She uses $BORING_2$ to express her opinion of traditional wedding ceremonies.

(4) INFORM (family), FIRST MOM [ ]- HS PREFER A-T PREFER IN CITY PREFER EASY FAMILY CL:airplane (a-->center) CL:airplane (b-->center)
PREFER TRADITION T-R-A-D-I-T-I-O-N TRADITION CHURCH H-A-L-L VARIOUS
PRO.1 $BORING_2$ SAME++ [ ]- HS
WANT DIFFERENT

> [FATHER]- TOP GO.AHEAD
> 'I told them (about our plans). At first my mom (was against it). She said it would be better if it were held at, or rather in, the city. It would be easier for family to get here. It would be better to have a traditional (wedding with) a church and things etcetera. I didn't want the same old boring thing. I wanted something different. My father said I should go ahead.'

In (4) the signer suggests that she does not want a traditional wedding because it would be "the same old boring thing". The statement implies that she has had some previous experience with traditional weddings and that this background formed the basis for her opinion that such a wedding would be routine, or lacking creativity.

The consultants for this study suggested that the pinky finger might function to emphasize the speaker's disinclination toward the propositional material. Hoopes (1998) also claims that pinky extension (generally) is an emphatic marker. Increasing phonological material (the addition of the pinky finger) can be seen as iconically corresponding with increasing semantic material (and an increase in the speaker's negative subjective attitude). As we will see with the remaining variants of BORING, each change in phonology corresponds with a change in meaning.[3]

5.1. BORING$_3$

The next variant, BORING$_3$, shows a further, yet divergent, form change from BORING$_1$. Here the sign has a movement path away from the body concomitant with the twisting motion. Commonly in discourse, it is accompanied 'puh' on the mouth and exhalation of breath. Figure 3 illustrates the path movement.

Figure 3. BORING$_3$

Along with the changes in form, the uses of $BORING_3$ are also more complex. $BORING_3$ expresses the signer's disinclination toward experiencing the event described by the proposition. The signer's negative reaction may be based on past experience, but past experience is not a requirement for felicity. For example, while an individual may not have experienced an IRS audit, our general understanding of what such an audit would entail suggests that it would not be pleasant and would be best avoided if possible. And, while unpleasant, the experience may, or may not, be viewed as "boring". In (5), the propositional content (having to communicate via paper and pencil with family members) could be viewed both "boring" and "unpleasant". In (6), however, the signer describes something that he finds unpleasant, and something he clearly feels a disinclination toward, the sense of "boring, dull, or uninteresting" no longer is a felicitous interpretation.

(5) [PRO.1 $_1$WRITE$_3$]- TOP $BORING_3$
AUNT UNCLE PRO.3 possessive JOB LEARN SIGN
$BORING_3$
BLAME
'Writing back and forth with them is ridiculous. They are my aunt and uncle. It's their job to learn to sign. It's their problem.'

As in (5), the use of $BORING_3$ in (6) indicates a strong sense of unpleasantness and the speaker's disinclination to experience the event. In (6) the speaker is relating his childhood experience of trespassing in an old department store and his fear of being arrested and sent to jail. While unpleasant, being arrested and hauled off to jail would rarely be viewed as "boring" by most.

(6) LOOK (around) TIME RUN.OUT CONCERN, FEEL GUILTY
BETTER TAKE.OFF HOME
NERVOUS, IMAGINE $_3$CATCH$_1$ $BORING_3$ PRO.1 JAIL
'I looked around. I was getting concerned because of the time. I felt guilty and decided to go home. I was so nervous thinking about how awful it would be to get caught and be sent to jail.'

While (5) suggests that the signer has, in the past, attempted to communicate with her family members in this manner, leading her to not want to experience it again, (6) contains no implied past experience, only a prediction regarding what might occur and an intuitive sense that it would

not be pleasant. The prospective nature of some $BORING_3$ uses offers us further evidence of semantic extension. While $BORING_1$ and $BORING_2$ are often used to describe a present attitude toward a current situation or event or past situation or event (indeed, consultants indicated that these variants would be infelicitous if the signer did not have experience with the situation being described), $BORING_3$ is often forward looking and signals a perspective on an as yet unrealized experience.

Harkins notes that "the subjectification process has its basis in the human ability to think and say things that are out of the bounds of the speaker's knowledge; and to talk about things like future events as if one knows they will happen" (1995: 275). Signers make use of $BORING_3$ (and $BORING_4$ below) to comment on their subjective attitude toward these future hypothetical events and situations.

It appears then that uses of $BORING_3$ can encompass some or all of the following senses:

> It is/will be boring
> It is/will be unpleasant
> I don't wish to experience it

As noted, $BORING_3$ retains the negative, "unpleasant" sense coded by $BORING_1$. In addition, uses of $BORING_3$ often have clausal scope, which changes the discourse function of BORING quite significantly. $BORING_3$ not only modifies a particular noun or noun phrase, but also expresses the speaker's attitude of disinclination toward the entire event or situation. Again, a mapping of the phonological and semantic poles is seen, whereby more phonological material (i.e., the twisting motion) iconically corresponds with more semantic material (here broader scope).

In addition, many uses of $BORING_3$ exemplify another type of iconicity common to ASL: diagrammatic iconicity. Haiman describes the phenomenon succinctly as: "a systematic arrangement of signs, none of which necessarily resembles its referent, but whose relationships to each other mirror the relationships of their referents (Haiman 1980: 515)". As was stated, typical $BORING_3$ uses have clausal scope. They are commonly found in the comment of a topic-comment construction and express a signer's (negative) subjective attitude regarding the information expressed by the proposition. They therefore affect a given-new relationship between the propositional content (the topic) and the signer's subjective attitude toward it (the comment). According to Haiman (1978), if an entity is presented in topic position, its validity and truth must be presupposed.

Givón (1984) also describes topicalized information as presupposed or 'old' and suggests that what is to be asserted will appear in the comment.

The given-new paradigm is central to information ordering in ASL and has been the subject of several recent studies (See Janzen 1998, 1999; Janzen and Shaffer 2002; Shaffer 2004). In ASL discourse, information is often in topic-comment order. Information in the topic is presented (as true, or as the condition or state to be considered for comment) to the interlocutor first, followed by the subjective attitude toward this information in the clause or clauses that follow. Shaffer (2004) shows that signers make use of the given-new distinction in the expression of epistemic modals, which are also high in speaker subjectivity. Many examples of $BORING_3$ exhibit the same given-new paradigm. In (5) below the signer is expressing her frustration with family members who do not know ASL. She uses $BORING_3$ twice. It is clear from each production that $BORING_3$ means much more than 'boring'; it expresses her obvious disinclination toward and irritation with having a paper-and-pencil relationship with family members. The topic of the sentence can be summarized as "writing back and forth with aunt and uncle". The signer sets that as the topic, then proceeds to express her feelings about having to do so in the comment.

5.2. $BORING_4$

$BORING_4$ appears to be an extension of $BORING_3$ and, like $BORING_3$ includes a path movement away from the signer's body. Now, however the extended pinky is also part of the production.

$BORING_4$ is used in similar discourse contexts and again consultants suggest the addition of the pinky finger may emphasize the signer's negative attitude toward the propositional content. $BORING_4$ is seen in figure 4 below.

Figure 4. BORING$_4$

Examples (7), (8) and (9) below each show projective uses of BORING$_4$. In (7) the signer is relating a recent experience where she was pulled over by the police while driving. Although the actual experience was in the past, she is using a well-known narrative device of shifting tense during an evaluative section. In this segment, she is dramatically revealing her perspective at the time of the incident. She states that she has received traffic citations in the past and does not want another.

(7) CRAP, FINISH TICKET BEFORE
[ANOTHER]- TOP BORING$_4$ PRO.1
'I thought: crap I already have one (speeding ticket). I don't want to deal with another one!'

In (8) the signer is relating an experience where her boss had suggested she leave her purse on a shelf, unsecured, while she worked. There is no indication that she has had her purse stolen previously, but common sense tells her it would not be a positive experience. Again, we see a projective use of the sign.

(8) BOSS SAY POSS.3 PURSE PRO.3
PRO.1 LOOK (up) BORING$_4$
STEAL, CREDIT.CARD, DRIVER LICENSE REPLACE [ ]- HS
BORING$_4$
'My boss said to put it there. But I don't want someone to steal it. I'd have to replace my credit cards, my driver's license. I didn't want to.'

The excerpt in (9) also has no expressed or implied past experience and, in fact, the opposite is stated. The narrator comments on her understanding of

what would have happened if she had misbehaved and been caught.

(9) PRO.1 CAN'T AFFORD T-O B-E BAD
[SCHOOL CATCH BAD]- TOP CALL MOM-DAD
COME BAWL.OUT $BORING_4$
PRO.1 GOOD GROW.UP[4]
'I couldn't have been bad during school. If I had been caught doing something bad my parents would have been called. Then they would have come (to school) and bawled me out. Ugh, no way! I was a good girl growing up.'

The shift in deictic center signaled by some uses of $BORING_3$ and $BORING_4$ is of interest here as well. In (9) the signer, a woman in her 30's, is describing her childhood and experiences in school. She describes how she behaved and why she was a good girl. It is interesting that she emphasizes that she was a good girl because of an imagined negative outcome had she been mischievous. The deictic center is the past, yet $BORING_4$ is still prospective in nature, describing her then present attitude and belief state about a hypothetical future event. Also noteworthy, the past deictic center and prospective evaluation would still hold had the signer experienced the event previous to that historic present, as was the case in 7.

Finally, the conditional nature of (9) is also germane. The second clause ([SCHOOL CATCH BAD]- TOP CALL MOM-DAD) is a counterfactual conditional, which again highlights that the propositional content need not be experienced for $BORING_3$/ $BORING_4$ to be felicitous.

As Traugott and Dasher (2002) note, meanings tend to shift from the more objective to the more self-oriented, reflecting more of the speaker's belief state or attitude. Sweetster (1990: 31) describes this shift as from 'sociophysical' to 'epistemic'. It is not surprising, then, that many of the examples of the extended meanings of BORING occur with first person referents. In fact, the dataset only includes one example of a BORING variant (i.e., other than $BORING_1$) with a non-first person referent. This example is in itself interesting. Here the signer relates a conversation with a friend about the friend's tight budget. He suggests that his friend should consider clipping coupons to save money. The signer then relates the friend's response. He does this by shifting his eye gaze from the right to the center and shifts his body to the right, in essence providing a direct quote of the friend's response.

(10) POSS.1 FRIEND PRO.3 GET.BY
PRO.1 SUGGEST WHY-NOT PRO.2 LOOK NEWS.PAPER CUT.OUT C-O-U-P-O-N (eye gaze right) SAVE MONEY (eye gaze center)
(body shift right eye gaze down) $BORING_4$ CUT.OUT $BORING_4$
'My friend is on a tight budget. I suggested he cut out coupons from the newspaper to save money. His response was "ugh, no way".'

6. A further extension?

It seems clear that the variations discussed thus far are all related to the sign BORING. Each retains the basic phonology of $BORING_1$, though for each variant additional phonological features are present. The core phonology remains the same, as does the core semantic notion of an expression of disinclination.

Another word appears to be related as well. And though it follows the same phonological-semantic pattern, its differences are such that the question remains if it is truly another variant of BORING. This final word is shown in figure 5 and tentatively labeled $BORING_5$. If indeed this word is related to BORING it has undergone even further phonological and semantic change. It is not produced at the nose as the first three variants are. Rather, it is signed in neutral space on the dominant side of the body, with no path movement. The twisting motion remains, accompanied by a simultaneous hand-shape change from an extended to a bent index finger. Concomitant pursing of the lips and sharp exhalation of breath is often seen in discourse uses.

Figure 5. 'I can't and won't do it'

The discourse function of this word is also more complex. In addition to commenting on an unrealized situation or event, it also indicates an inability or refusal to complete the action named in the proposition. It too profiles the speaker's disinclination and means: "I can't and won't do it." Clearly, the discourse contexts in which $BORING_5$ can be used are quite limited. It appears, for example, that $BORING_5$ can only be used with a first person referent or with an assumed first person referent (i.e., by so-called perspective shifting [see Janzen 2005 for a review]).

In example (11) below the signer is discussing cochlear implantation with her friends.

(11) SAME PRO.1 $BORING_5$ (receive a cochlear) IMPLANT
PRO.1 DOUBT WORK
MAYBE WORK, BUT FOR PRO.1 NO THANK YOU
'I agree. There's no way I would get a (cochlear) implant. It might work, but no thanks. It's not for me.'

The signer states emphatically that she would not want a cochlear implant, regardless of the outcome. From the context of the discussion, it is clear that the whole notion of the implant is unpleasant. This contrasts with (12) below. Here the signer uses $BORING_5$ to indicate that he would never have the nerve or ability to approach a famous movie star and ask her out. Perhaps the potential rejection could be construed as a negative outcome, but it seems clear that the entire concept is something he is not willing to contemplate seriously.

(12) IN SF [HIT]- TOP FAMOUS ACTOR WOMAN ACTOR NAME J-U-L-I-A R-O-B-E-R-T-S PRO.3 (there)
FRIEND TRY.TO.PERSUADE.ME
WHY NOT PRO.1 $_1MEET_3$ COME.ON LEAVE D-A-T-E
eye gaze (to friend) PRO.3 SAY $_3GIVE_1$ FREE COCKTAIL
PRO.1 BRUSH.OFF PRO.1 $BORING_5$ PRO.1
[PRO.1 $_1MEET_3$]- TOP
[CL: everyone look]- TOP
[ASK O-U-T]- TOP
PRO.1 $BORING_5$ $BORING_5$
'If I happened to see the famous actress Julia Roberts in Santa Fe and my friend tried to get me to approach her and ask her out, saying he'd give me a free drink, I'd tell him to get lost. There's no way I would approach her, with everyone looking and ask her out. NO

WAY. NO WAY.'

The examples of this possible BORING$_5$ all share that sense of "no way I could/would do that". Whether the propositional content is perceived as positive or negative, the signer wants no part of it. What remains is the sense of disinclination. The proposed semantic network is seen in figure 6 below. Further data will reveal the nature of the word's relationship to BORING.

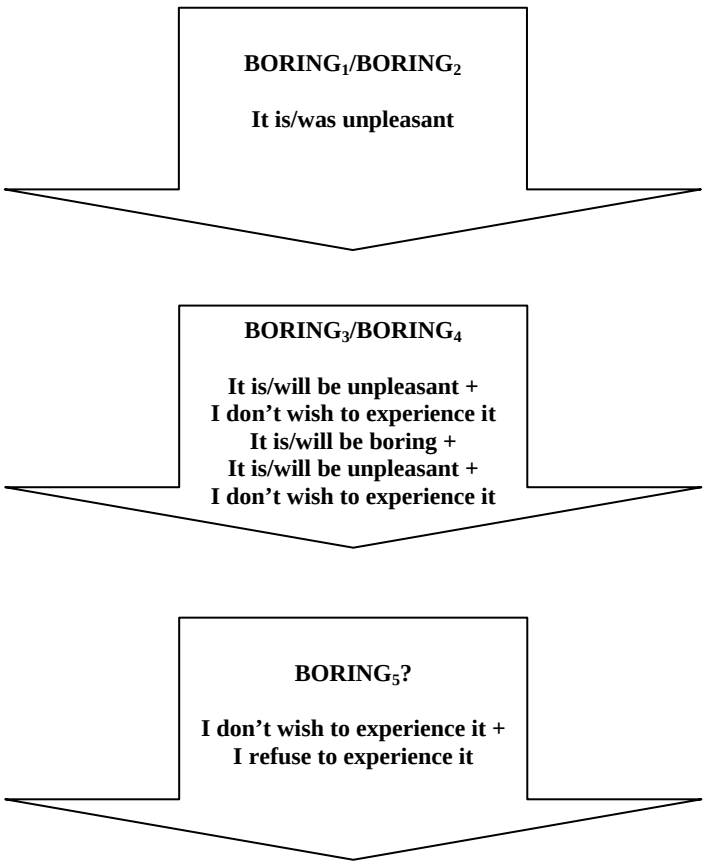

Figure 6. Semantic extension

7. Conclusion

The goal of this paper has been to present a case study in polysemy and to further illustrate the pervasive nature of iconicity in ASL. In addition to diagrammatic iconicity, each phonological variant iconically reflects its meaning difference from $BORING_1$. Increases in semantic material correspond with increases in phonological material. While often in languages such as English, polysemous words have the same phonological shape and the meaning differences are entirely understood by context, either structural or pragmatic, it appears that in some cases of polysemy in ASL, slight form changes correspond with changes in meaning.

Notes

1. I would like to thank Keith Cagle for allowing me to photograph him, and for the insightful discussion. Thanks also to Terry Janzen for his helpful comments.
2. ASL words are represented as upper case glosses. Letters separated by hyphens indicate fingerspelled words. [. . .]- TOP is used to show topic marking; [. . .] -HS indicates a negative headshake. Subscript numbers represent the verbal path relative to the narrator; lower case a--> and b--> are used to indicate verbal path movement in the signing space. PRO.1, PRO.2 and PRO.3 indicate first, second and third singular pronouns respectively. Plus signs indicate that a movement is repeated. Words separated by a period (e.g., PUSH.AWAY) indicate that more than one English word is used to denote a single ASL word.
3. Further research is needed to understand the role of the extended pinky finger.
4. A common problem for linguists who worked on signed languages is the limitations of English-based glosses. Here the signer juxtaposes a standard word often glossed PIOUS (which is signed at the end of her utterance) with a novel word UN-PIOUS. The resulting pair is used to indicate "bad" and "good" behavior.

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It's like making a soup: Metaphors and similes in spoken news discourse

Carol Lynn Moder

Most theories in philosophy and psychology have characterized metaphor and simile as essentially similar, with some suggesting the underlying relation was one of comparison (Aristotle; Richards 1936; Miller [1979] 1993) and others proposing that both were statements about category inclusion (Glucksberg and Keysar 1993).

Traditional comparison theories of metaphors and similes, ranging from Aristotle to Richards (1936), suggest that both are essentially comparison statements. Aristotle suggests in *Rhetoric* that the two figures express similar concepts, but that metaphors are more attractive and more interesting to the hearer than similes because they are condensed. Richards (1936), Miller (1993) and Reinhart (1976) suggest that interpreting metaphor is essentially a matter of finding the simile to which it corresponds. Miller most clearly expresses this position in stating that the "simplest way to characterize a metaphor is as a comparison statement with parts left out" (Miller 1993: 379). Like Aristotle, he goes on to say that because similes make the "claim of similitude" explicit, they are less interesting than metaphors and require less work from the hearer. However, he also suggests that the interpretation of similes can be just as complex as that of metaphors. Black ([1979]1993) elucidates what he terms the "correct insight" of these traditional comparison views by asserting that "every metaphor may be said to mediate an analogy or structural correspondence" and "may be said to implicate a likeness-statement and a comparison-statement, each weaker than the original metaphorical statement" (Black 1993: 30).

An alternative view of the relationship between simile and metaphor is espoused by Glucksberg and Keysar (1993). They contest the view that nominative metaphors of the form 'X *is a* Y' are implicit similes, asserting that such metaphorical expressions are precisely what the grammatical form indicates, a class inclusion statement. They suggest that the hearer interprets such statements by forming a superordinate category that includes both 'X' and 'Y,' but one for which 'Y' is typical. They go on to say that similes are also category statements, but implicit ones. Glucksberg

and Keysar thus reframe the description of metaphor, inverting the view of the comparison theorists. Rather than framing metaphor as an implicit comparison, they describe simile as an implicit categorization. They go on to take the position that the simile is "perhaps used as a qualifier or hedge," and suggest further that the similes may be more difficult to understand and may "impose an additional cognitive burden on a hearer" (Glucksberg and Keysar 1993: 423).

A third view of the relationship between similes and metaphors is that the figures are not identical and that they may serve different cognitive functions. For example, Aisenman (1999) suggests that the distinction may be related to the type of interpretation that each figure prompts. In an experimental setting, his subjects preferred similes when the interpretation was based on an attributive predicate and metaphors when the predicates were relational or functional. This view draws on the structure mapping framework of Gentner (1988), in which she proposes that metaphors may be divided into relational and attributive types. Relational metaphors map common functions, processes or systematic relations between two entities; attributive metaphors are "mere appearance matches" of size, shape, or physical features. However, it is of note that Aisenman's results are directly at odds with Gentner's findings that even for similes adult subjects preferred relational to attributive interpretations.

A more complex view of the different cognitive functions that metaphor and simile might prompt is proposed by Gentner and Bowdle (2001), who provide the important insight that novel and conventional metaphors and similes may not function in the same ways. Like Glucksburg and Keysar, Gentner and Bowdle assume that the grammatical form of an expression is directly related to the comprehension process the figurative expression cues, noting that nominative metaphors are framed grammatically as category statements and similes are framed grammatically as comparisons. However, Gentner and Bowdle assume that all figurative statements are based on a cognitive process of structural alignment, whereas categorization is only relevant to conventionalized metaphors. According to this analysis, both novel metaphors and novel similes must be interpreted using the cognitive comparison process entailed in structural alignment. In contrast, conventional metaphors and conventional similes may be interpreted either by retrieving a stored category or by comparison. Gentner and Bowdle suggest that in the case of novel expressions, the grammatical form of a simile cues the necessary comparison processing more directly, whereas the grammatical form of a metaphor cues a search for a stored category that will not be found. They

cite in support of this view experimental findings that for novel expressions subjects prefer the simile form over the metaphor form, but subjects have no consistent preference for form in conventional expressions. Subjects also are reported to comprehend novel similes more quickly than novel metaphors.

In considering the extent to which these experimental results may be generalizable beyond the experimental context, we note two main concerns. First, Glucksberg and Keysar and Gentner and Bowdle appear to assume that the grammatical forms of metaphors and similes map in an isomorphic correspondence to a particular function. The assumption is that a form of the verb *be* connecting two nouns necessarily predicates that the first noun is a member of the category denoted by the second. For similes, the assumption is that the form *like* unambiguously denotes a comparison. Second, although the researchers acknowledge that context might have an important effect on processing, especially in the case of extended novel metaphors, the results they report are based on the presentation of the figurative expressions in isolation. Such experimental tasks may require subjects to perform cognitive operations that are not compatible with those they would perform in interpreting metaphor and simile in naturally occurring language.

In Cognitive Linguistics, metaphor is viewed as a matter of conceptual mapping from a source domain to a target domain and metaphorical expressions are the primary exemplars of such conceptual mappings (Lakoff and Johnson 1980, 1999). According to this view, metaphors may take a wide variety of formal expressions, but few cognitive linguists have discussed similes as a distinct category.

One cognitive linguistic view of metaphor that may be relevant to understanding the cognitive effect of the formal distinctions between metaphor and simile is the blending approach of Fauconnier and Turner (2002). They characterize metaphorical expressions as cueing a blend of mental spaces, one for the source domain and one for the target domain. The organizing frame of the blend may come from one of the domains, or may draw structure from both input spaces. Fauconnier and Turner suggest blending networks construct intelligible meaning by providing a "compression" of relations of time, space, identity, role, change, and intentionality, among others. An important aspect of the theory is that the conceptual blend mapped by the metaphorical expression maintains a network of connections to all the input spaces, thereby allowing extensive inferencing and creativity. Although Fauconnier and Turner do not explicitly discuss similes, they suggest that specific words and forms may

make hearers conscious of the process of blending, which would otherwise go unnoticed. Thus, within this framework, one difference between metaphors and similes may be that the use of linguistic expressions such as *like* serves the function of making one aware of the mapping.

A recent cognitive linguistic analysis of similes by Israel, Harding, and Tobin (2004) also highlights the importance of grammatical form, but it differs from other studies in encompassing a much broader range of constructions in its definition of similes. Israel, Tobin, and Harding (2004: 125) define similes as "explicit, figurative comparisons, and therefore any construction which can express a literal comparison should in principle be available to form a simile." They further suggest that because the similes must take the grammatical form of an explicit comparison, they are constrained to the rhetorical role of description. They hypothesize that similes fulfill this descriptive role by highlighting elements already present in the domain matrices of the two concepts. Although Israel, Harding, and Tobin (2004: 133) acknowledge that similes do not exclusively map attributive features, they assert that similes function like attributions in "providing a compact and coherent image to describe the features of a single event." Metaphor, on the other hand, is in their view primarily conceptual, more grammatically flexible, and typically adds to a target domain by projecting structure from a source.

This analysis provides a number of valuable insights about the nature of similes and metaphors, but it does so largely through the comparison of selective examples which vary dramatically in the contexts from which they are drawn. Furthermore, because the analysis assumes at the outset that similes are a form of comparison, the examples of similes are selected to meet this criterion, whereas the examples of metaphors are not so constrained. The discussion of similes is based on a number of single sentences from literary and newspaper contexts, but the discussion of metaphor remains mostly at the conceptual level with little support from actually occurring metaphorical expressions.

Although most of the approaches discussed here recognize, to some extent, the importance of context in the understanding of metaphorical expressions, they typically examine metaphorical expressions isolated from their original discourse context, with most using researcher-generated examples. In addition, while recent researchers highlight the possible importance of linguistic form in cueing cognitive processes for interpreting metaphor and simile, they base their analysis of the relation between form and function largely on intuition.

In order to resolve the competing claims about the relation between metaphors and similes – whether metaphor and simile are comparisons or category statements, whether they cue the same or distinctive cognitive processes, or whether a specific form of linguistic expression linguistic cues a particular kind of interpretation – it is essential to analyze authentic language in use.

1. Metaphor and simile in news discourse

The present study examines and compares the use of metaphorical expressions and similes in spoken news discourse. The examples come from a researcher-gathered 500,000 word corpus of tapes and transcripts taken from two National Public Radio news programs: *Morning Edition* and *All Things Considered*.[1] The study's main purpose was to investigate the ways in which an examination of the complete discourse context in which metaphors and similes naturally occur may help to illuminate the cognitive functions of metaphors and similes.

In order to narrow the scope of the examination and to select cases in which metaphorical expressions and similes would be most comparable, the study focused on metaphors in nominative form, as shown in (1), and similes using *like*, as seen in (2).

(1) Metaphors in nominative form
   a. It's a burglar alarm for federal files in cyberspace.
   b. It's a rich stew.

(2) Similes using *like*
   a. Governor Engler stood smiling at the door like the proud father at a wedding reception.
   b. When an issue comes, it is like an airdrop.
   c. The location of El Paso-Juarez on one of the world's super highways of dope smuggling produces a reality which is like those 3-D pictures of Jesus.
   d. It's like making a soup.

All expressions in the corpus taking the form N_1 $verb_{be}$ (determiner) N_2 or N_1 $verb_{be}$ *like* (determiner) N_2, were identified using the concordance program *MonoConc*. Each example was then examined in its full original context to determine whether it should be categorized as a figurative

expression. Forms were deemed to be metaphors or similes based on either the semantic incongruity of the expression encoding the source domain with the expressions encoding the target domain, or the pragmatic incongruity of the source expression with the discourse context. In illustration of this, consider the expression, *It's a rich stew*, cited in its full context in (3) below. This expression was used to designate a piece of music in the context of a review of a musical recording. The expression *stew* is semantically incongruous with the expressions *recording* and *CD*, which appear earlier in the discourse to describe the same discourse entity. The source and target expressions are drawn from distinctive cognitive domains that share few relational or attributive features. The two expressions are also pragmatically incongruous, since the mention of the term *stew* is not licensed either by the discourse context or by the situation. See Cameron (2003: 58–61) for a fuller description of this approach to metaphor identification.

The categories novel and conventional are not clear binaries, but form a usage continuum. However, for the purposes of this study the number of occurrences in the corpus was used to guide the categorization. Given the small size of the corpus used for this study, any expression which occurred in the same meaning in multiple contexts was considered to be conventional. Expressions which appeared a single time were checked against dictionaries and larger corpora. If they did not appear in these other sources with the same meaning, they were considered novel.

In what follows, I will discuss selected examples from the corpus which represent the most common uses of these expressions in the discourse in order to address the following questions:

1) Does the context provide evidence that metaphors and similes function primarily as either comparison or categorization statements?
2) Is there evidence for similes and metaphors being distinguished by their use to highlight either attributes or relations?
3) Is there evidence that the use of the form *like* specifically cues a cognitive comparison?
4) Do novel and conventional similes function in the same ways in discourse?

I will begin by briefly discussing nominative metaphors and then turn to a more extensive consideration of similes.

2. Nominative metaphors

In the corpus, the nominative form, X *is a* Y, usually encoded novel metaphors. More conventional metaphors typically took other linguistic forms, which were less comparable to similes using *like* (see, for example, Moder 2004 for a discussion of N-N metaphors). Furthermore, these novel nominative metaphors relied heavily on the preceding context to provide the interpretive framework. This pattern is exemplified below.

In (3), the segment begins with the host, Noah Adams, introducing the topic and the commentator. His introduction echoes some of the lexical items which the commentator uses subsequently. Adams frames Niger as *a rich culture* and emphasizes the different peoples who make it up. The commentator, Banning Eyre, then describes the music as drawing upon four different cultures, represented by different patterns of instrumentation. He sums up this description and his commentary with the nominative metaphorical expression, *it's a rich stew*.

(3) *it's a rich stew*
ADAMS: *The West African country Niger has a rich culture marked by the migrations of many different peoples over the centuries, but its art and music are virtually unknown to much of the world. Reviewer Banning Eyre says he was lucky to come across a new group from Niger called Mamar Kassey.*
EYRE: *I've been writing about African pop music for over a decade, and I can count on one hand the recordings I've ever heard from Niger. So it was quite a surprise when I put on Mamar Kassey's debut CD "Denke Denke" and felt after a single listen that it was one of the best things I've heard all year.*
(Soundbite of "Denke Denke")
MAN: (Singing in foreign language)
EYRE: *This nine-piece band draws upon the Fulani, Songhay, Djerma and Hausa cultures, four of the eight main ethnic groups in Niger. Mamar Kassey's cultural richness is evident in the music itself.*
Listen to all the strands at work in the title song "Denke Denke." First, there's the talking drum used in Nigerian music. Then the overblown flute sound of the nomadic Fulani people. And then a high-pitched lute that suggests northern Mali. Anyway you stir it, ***it's a rich stew.*** (Soundbite of "Denke Denke") (ATC, 1/4/00)[2]

The second nominative metaphor, shown in (4), has similar characteristics. Here the excerpt begins with the reporter's introduction of the topic of *Fidnet*, which he describes as a *controversial monitoring system*. He explains the view of the opposition that the system may be used to invade the privacy of citizens and summarizes Richard Clark's description of the system as a safety measure which will protect information. Clark's comments begin with the nominative metaphor that sums up the reporter's description of the system, *It's a burglar alarm for federal files in cyberspace*. The comment goes on to emphasize the relational mapping between Fidnet and burglar alarms, the protection of privacy.

(4) *a burglar alarm for federal files in cyberspace*
ABRAMSON: *The Clinton proposal includes a controversial monitoring system known as FidNet, or Federal Intrusion Detection Network. FidNet was attacked when it was first leaked last year. Civil liberties groups said it could be used to track what citizens do when they visit government Web sites. Today, Richard A. Clark of the National Security Council insisted FidNet is not a surveillance system; it's a safety measure meant to protect the sensitive information stored on government computers.*
CLARK: ***It's a burglar alarm for federal files in cyberspace***. *It in no way will intrude onto private computer systems–private sector computer systems. It's only a government protection system for government sites. It's designed to protect privacy and enhance privacy*. (ATC, 1/7/00)

Several things are noteworthy about these two examples. First, the interpretation of the metaphorical expression is not left up to the imagination of the hearer. The ground for interpreting the metaphor has already been outlined in the preceding discourse. In both of these cases, the metaphorical expression relies on relational correspondences between the two domains, not attributive ones. Furthermore, in establishing the interpretative ground, the preceding discourse does not set up a comparison between the source and the target domain, nor does it use the source domain to set up an *ad hoc* class in which the target entity is established as a member. Rather, it makes explicit the inferences concerning the target domain before the introduction of the source domain of the metaphor. If comments follow the metaphorical expression, as in (4), the comments highlight the relation between the source and target

domain implicitly, primarily through the use of language that could be associated with either domain. Thus, for the nominative metaphors in the corpus, the mappings are pre-figured by the inferences that are mentioned in the preceding discourse, which map in detail specific highlighted aspects of the target domain. The metaphorical expression appears to compress these diffuse inferences into a coherent blended network by evoking a source domain to structure the blend.

In the following sections I will compare these nominative metaphor examples with similes, but it will be instructive to first look at the non-figurative uses of *like* in the corpus.

3. Uses of *like* in the corpus

Many of the arguments of the comparison theorists concerning similes and their relation to nominative metaphors are based on the assumption that the unique function of *like* is to encode a comparison. However, an examination of the non-metaphorical uses of *like* in the corpus indicates that this is not its only function. Examples of *like* also appeared in categorization statements.

The examples in (5) show *like* used in a comparison. In (5a) *like* serves to indicate a relational similarity between the commentator and 20 million AOL users, many of whom have teenage children. The example in (5b) is an attributive comparison of the smell in the school with the smell of chlordane. These examples support the assumption that *like* is part of an explicit comparison statement.

(5) *Like* in comparison

a. *But surprisingly no one else has yet put together a package that is as clean and clear and simple as AOL. I think what it has now is 20 million users who don't want to change their e-mail addresses.* ***Many of them, like myself****, have teen-age kids who are online chatting with their friends in chat rooms, they're sending instant messages all afternoon, who will not let their parents go to another online service.* (ATC, 1/10/00)

b. G*eorge Holding, the executive principal, said he remembers being called to the vocational wing, where a teacher had reported a pungent odor.*
BOLDING: ***It smelled like the old stuff we used to use called chlordane****. That's what it reminded me of. Chlordane is a*

> *petroleum-based insecticide of some sort. I think it's outlawed now, and it was too strong*. (ATC, 1/12/00)

On the other hand, the examples in (6) use *like* in a different way. Here *like* is not part of a comparison statement, but rather it serves to introduce an exemplar of the category named by the preceding noun phrase. Time Warner is provided as an example of the category *traditional media companies*, AOL is an example of an Internet startup, and the earthquakes in Turkey and Taiwan are examples of the category *major earthquake*.

(6) *Like* in categorization

a. *Rather than buying into the new media revolution when they had the chance, **traditional media companies, like Time Warner**, stood by and smirked while Internet start-ups, like AOL, went from being an acquisition target to merger prospect to an acquirer itself.* (ATC, 1/11/00)

b. *Thousands of people have experienced the earthquake simulator. It's especially popular after **major quakes like the recent ones in Turkey and Taiwan.** There's even a mobile earthquake simulator that travels around Tokyo.* (ATC, 1/17/00)

Of these two functions of *like*, the categorization function is slightly more frequent in the corpus. Table 1 shows the relative frequency of like in comparisons (32%), categorizations (39%), and similes (21%) in the first 1000 uses in the corpus.

Table 1. Percentage of function of first 1000 uses of *like*

FUNCTION	*Percentage*
Comparison	*32%*
Categorization	*39%*
Simile	*21%*
Other	*8%*

The high frequency of *like* in categorization statements calls into question the linguistic foundation of the assumption that because similes make use of a linguistic form that is dedicated to marking comparisons, they are prototypically explicit comparison statements. This finding is equally problematic for the Glucksberg and Keysar approach, since they describe similes as implicit category statements. As we have seen, in some

cases the use of *like* explicitly introduces an exemplar of a category. If the expression *like* can be used in both comparison and categorization statements, there is no clear linguistic ground for viewing simile as necessarily different in the explicitness of its cognitive coding than metaphor. At best we could state that the use of *like* in a simile is ambiguous in the relationships it encodes.

I now turn to a discussion of similes in the corpus.

4. Similes

Similes in the corpus varied widely along the continuum from conventional to novel expressions. In the following sections, I will briefly discuss conventional similes and then more extensively discuss novel similes. I will present the novel similes in two groups, those that are more narrow in their semantic and pragmatic scope and those that are more broad in scope.

4.1. Conventional similes

The example in (7) illustrates a conventional simile from the corpus. The phrase *like sheep to slaughter* is a frequently occurring expression, which in this example is mapped onto the target domain of the U.S. policy toward Haitian refugees. Note that the simile is not explained, but it is supported by the following description of what happens to those who are deported.

(7) Conventional simile: sheep to slaughter
There's no doubt it's a step in the right direction. Haiti's a killing field today. Our policy to date has been to send people back ***like sheep to slaughter*** *and hand them over to be fingerprinted, interrogated, and, in about one out of six cases, imprisoned by Haiti's military. That is an unconscionable policy, a racist policy, and it could not stand.*
(ME, 5/9/94)

4.2. Narrow scope similes

Among the more novel similes in the corpus are those that may be described as narrow in scope. I categorize as narrow scope similes those that are restricted in their interpretation by the explicit linguistic specification of the attribute or dimension along which the mapping from source to target domain is to be made. In (8a), Governor Engler is related to the proud father specifically in terms of the way he stood smiling at the door. Similarly in (8b) the Hammond B-3 organ is related to a lullaby or a roaring lion specifically along the dimension of its sound.

(8) Narrow Scope Similes

a. the proud father

But at the Amway Grand Plaza Hotel this morning, Bush supporters were out in full force for a breakfast fund-raiser. Governor Engler stood smiling at the ***door like the proud father at a wedding reception.*** *Engler, however, shrugs off his yearlong effo*rt. (ATC, 1/11/00)

b. a gentle lullaby/a roaring lion

There's a new collection of jazz and rock 'n' roll on a CD titled "Organized," an all-star tribute to the Hammond B-3 organ. The Hammond B-3 dates back to the 1950s in the music clubs. You didn't need a big band, just a guitar and drums and the B-3 and you'd fill the room with sound. It's estimated that 100,000 B-3 organs were built. The ones that survive are treasured. Record producer Jerimaya Grabher put together the "Organized" CD; 13 songs, 13 players, all with that special B-3 sound.

GRABHER: *Usually the first word that comes to my mind is either bombast or smooth. The instrument has such an incredible range of voices that it's capable of. And depending on, you know, how the player's playing it, and with what kind of attack, and what, you know, sort of the settings are on the keyboard, you know, it's going to* ***sound like anything from, you know, sort of a gentle lullaby to a roaring lion.*** *I think that's really wonderful; wonderful quality that it has.* (ATC, 1/7/00)

It is very likely that these narrow scope similes account for the frequent description of similes as attributive, more restricted in interpretation, less condensed and evocative, and easier to process than metaphors. However, this type of simile was not the most common in the corpus.

4.3. Broad scope similes

The second group of novel similes, broad scope similes, were extremely frequent in the corpus. These similes were very similar to nominative metaphors in their novelty and in the kinds of mapping that they cued. They were typically relational rather than attributive and more open in their possible interpretations than the narrow scope similes I have just discussed. Possibly for this reason, the broad scope similes were usually immediately followed by a specific interpretation. In (9) the NRA and the Colorado Firearms Coalition are portrayed in the immediately preceding context as powerful. The simile *like an airdrop* describes their activities in terms of this newly introduced source domain. The specific relation mapped, descending on the legislature, is then explicitly specified in the following utterance. The reporter reprises the mapping without using *like* to introduce the next segment.

(9) Broad Scope Simile: an airdrop
DUKAKIS: *Democrat Mike Feeley is the Senate minority leader. He says the gun lobby remains a force in the Colorado legislature.*
FEELEY: *The gun lobby – the National Rifle Association, the Colorado Firearms Coalition – are incredibly powerful in the Colorado legislature. When an issue comes**, it is like an airdrop.** They descend on the Colorado legislature.*
DUKAKIS: *And if this past Saturday was any indication, **that airdrop** has begun*. (ATC, 1/14/00)

A more extended instance of a broad scope simile is presented in (10). This segment is introduced by the host, Linda Wertheimer, with the mention of a projected auction of a dinosaur fossil, followed by a question about its discovery. The discoverer, Alan Detrich, describes the position of the dinosaur and makes the case that it was likely to be damaged if left where it was, so it had to be excavated to be preserved. After stating the likelihood of damage, he emphasizes the point by using the simile *they're like wheat or different grains that ought to be harvested*. The cross

domain mapping is picked out by the use of lexis common to grain and now applied to the fossil: *harvest*, *destroy*, *weather*, and *the elements*.

(10) Broad Scope Simile: wheat or different grains
WERTHEIMER: *A 40-foot dinosaur goes on sale today through an online auction site. Only well-fixed bidders need take note. The fossil of a T. Rex, an enormous, meat-eating creature who stalked around South Dakota 65 million years ago is 25 feet high, 11 feet at the hip, and probably looked in life very much like the creatures we all met in "Jurassic Park." Alan Detrich located this particular fossilized creature, bought it from the rancher in whose land it was embedded and cut it out to be sold. He's expecting to make millions on the deal. Alan Detrich joins us by telephone from Great Bend, Kansas. Mr. Detrich, tell us about finding the animal. Could it be seen on the top of the ground? How'd you find it?*
DETRICH: *You find them by a lot of hard work, and you find them in certain formations of ground. How I can describe this animal is it was 20 foot under the ground and it had hard cap rock on the top of the dinosaur, which preserved it perfectly. And it was found in a sand formation, so the animal died along a shoreline or a river.*
WERTHEIMER: *When you came upon this one, what was showing?*
DETRICH: *Parts of the vertebrae. Parts of the vertebrae was coming out of the ground, and what was sticking out was parts of eroded bone. Now people don't realize that this fossil, how it's discovered, it's a blessing and a curse. The blessing is, because there's erosion, you can see parts of the dinosaur sticking out the side of a mountain. The curse is, because of the erosion, they're being destroyed, and because they're being destroyed,* ***they're like wheat or different grains that ought to be harvested****. If they're not* ***harvested*** *every year, then they're* ***destroyed*** *by the* ***weather*** *and* ***the elements****.*
WERTHEIMER: *So you saw a bit of it sticking out of the mountain, and then you had to just remove that part of the mountain that was on top of it?*
DETRICH: *That's correct.* (ATC, 1/17/00)

The example in (11) is another instance of a broad scope simile. In this case, the target domain, El Paso-Juarez, is mentioned and then immediately followed with the simile, *like those 3-D pictures of Jesus*.

The intended relational mapping is then explicitly described in the following sentence and elaborated by the specific details about contrasting recent events.

(11) Broad Scope Simile: "3-D pictures"
BURNETT: *There's a saying here that anything can happen on the border. The location of El Paso-Juarez on one of the world's super highways of dope smuggling, produces a reality which is* ***like those 3-D pictures of Jesus****. It changes, depending on your perspective. This is where two Mexican police forces have been known to shoot it out over a load of cocaine and where some of the poorest neighborhoods in the United States exist in a county with a Federal Reserve bank that has one of the largest cash surpluses in the nation. Dave Contreras, an El Paso native, is with the county attorney's office.*
Mr. DAVE CONTRERAS (Prosecutor, County Attorney's Office): *I heard an assistant district attorney one time ask, 'Well, how believable is this scenario that if somebody would be kidnapped by drug dealers and taken to Mexico?' Well, you know, we're talking about Iowa, no. But you're talking about El Paso, Texas, that's a very real possibility.* (ATC, 1/21/00)

The final broad scope simile appears in (12). Here the reporter, Brooke Gladstone, introduces a segment about the magazine, *Interview*, which was started by Andy Warhol and after his death was taken over by Ingrid Sischy. The introduction highlights Warhol's desire to be inclusive of all kinds of people, not just well-known celebrities. The focus of this excerpt is on the continuation of that approach. Gladstone, Sischy, and the Unidentified Man all describe features of the magazine that used unknowns and helped them to break into prominent roles. After these features have been described, Sischy uses what she explicitly calls an analogy relevant to Andy Warhol, *it's like making a soup*. In the immediately following utterance, she elaborates on the interpretation of this simile, using language relevant to the source domain – *ingredient*, *meat* and *potatoes* – and applying it to the target domain.

(12) Broad Scope Simile: like making a soup
GLADSTONE: *Andy Warhol said he started Interview so that he and his friends could get free tickets to all of the movie premieres, and in a sense he meant that. But he also wanted to get everyone*

into the show, and in Interview's rambling downtown office, Sischy and her staff are intent on carrying on that tradition. For example, to be featured on the Ones To Watch page, you have to have something special, but you cannot have a publicist, an agent or a deal. For a recent feature called Just Got Off the Bus, you didn't even need that something special to get your 15 minutes, all you had to do was answer an ad.
SISCHY: *I want you to know it's not like we only photographed some of them.*
UNIDENTIFIED MAN: *We didn't like handpick anyone. This is like everyone who walked through the door.*
SISCHY: *And here's the amazing thing: Within a week of it coming out, for example, Iman called and said, 'I want the address and phone number for the last girl in your Just Got Off the Bus story 'cause we maybe want to hire her as the face of Iman.' Woody Allen's casting people called us and asked for – How many? – I think 21.*
UNIDENTIFIED MAN: *Yeah.*
SISCHY: *Twenty, or 21 names and addresses. All of these different people called us from this, and we ended up helping – giving all these people a break, like maybe 30 people.*
You know, I'm going to use an analogy that's I hope appropriate for Andy Warhol, but for us ***it's like making a soup****. Part of* ***the ingredient****, yes, are people who are very well-known, but* ***the meat and potatoes of our soup*** *is tomorrow, you know.* (ATC, 1/18/00)

The examples of broad scope similes which I have discussed have a number of commonalities. All of the similes are relatively novel and depend on the context for interpretation. All map relational features from the source domain onto the target. All of these similes are immediately followed by an utterance which explicitly interprets the simile, typically using lexical items associated with the source domain.

5. Conclusions

I have discussed three groups of similes using *like* found in the corpus: conventional similes, narrow scope similes, and broad scope similes. The conventional similes typically were not explicated in the context and were left to the hearer to interpret. Narrow scope similes, those restricted in

interpretation by a verb or the prior phrase, typically highlighted more attributive features, whose focus was explicitly coded in the linguistic expression. Narrow scope similes most closely matched the common description of similes as restricted comparison statements and as more attributive than relational. However, narrow scope similes were not the most frequent in the corpus. The most frequently occurring similes were broad scope similes.

Broad scope similes conceptually had much in common with nominative metaphors. They most often encoded relational features that could entail aspects of both comparison and categorization. This dual function may be related to the dual discourse functions of *like*.

The examples discussed here do not support Aisenman's (1999) view that similes are preferred for attributive mappings and metaphors for relational mappings, but they do support the conclusions of Gentner (1988), since both nominative metaphors and similes appeared in the corpus predominantly in relational uses. The examples also support the view of Gentner and Bowdle (2001) that novel and conventional metaphors may be subject to different interpretation strategies. However, the implications of Gentner and Bowdle's findings concerning the preferences of subjects for novel similes over novel metaphors may need to be re-examined in light of the extensive contextual support typically provided for novel nominative metaphors in natural discourse.

Nominative metaphors seldom occurred without a context that explicitly detailed the target domain structure onto which the metaphorical projections could be mapped. The strong correspondence between the nominative metaphor form and its summative position and function in the discourse suggests that the form of the nominative metaphor may cue speakers to project contextual mapped inferences already present in the target domain onto a blend structured with elements of the source domain.

Similes using *like* occurred in more varied contexts. Narrow scope similes appeared to function descriptively in a way consistent with the analysis of Israel, Harding, and Tobin (2004), providing a vivid compact image describing a single entity or event. Their analysis of similes as highlighting existing structure present in both the target and source domain appears apt for these examples. However, the broad scope similes in the corpus do not appear to function in this way. Like metaphors, broad scope similes appear to add structure to the target domain. They may do this by projecting previously mentioned discourse inferences into a blend with the source domain as nominative metaphors do, or by explicit

subsequent mapping using language consistent with both source and target domains.

This comparison of nominative metaphors and similes using *like* in their discourse contexts suggests that the relationship between metaphors and similes is complex, requiring an awareness of the conventionality or novelty of the figures, the explicit linguistic forms in which each appears, and the context in which each is used. It is very likely that the competing views of metaphor and simile may be best brought into alignment by reframing the two figures as distinct but overlapping prototype categories and by further examining them in the discourse contexts in which they occur to determine the prototypical features common to each. Both metaphor and similes encompass a wide range of linguistic forms and discourse functions, of which I have discussed only a small subset here. Further investigation is needed to discover whether metaphors and similes taking other forms of linguistic expression follow similar or distinctive patterns to those found here.

The results of this study suggest that the one of the primary distinctions between similes and metaphors may lie in the cognitive cues they provide to the hearer. In this corpus, similes using *like* were most often used to introduce a mapping which was not extended in the discourse. Most commonly, the simile introduced the mapping and then explicated it in one or two immediately following sentences. Similes appear to have been used here to consciously draw the listeners' attention to the upcoming mapping. This would support the view of Fauconnier and Turner (2002) that a form such as *like* functions to alert the hearer to an otherwise unconscious blending process. In contrast to similes using *like*, nominative metaphors tended to sum up more extensive discussions or arguments made in the preceding discourse. In Fauconnier and Turner's model this may be related to the concept of compression. The metaphorical expression serves to compress the vital relations expressed throughout the discourse into a blended network that neatly packages a set of diffuse inferences.

Finally, this study demonstrates that the study of naturally-occurring discourse contexts is an essential ingredient in the recipe for describing similes and metaphors.

Notes

1. *All Things Considered* and *Morning Edition* are radio news programs broadcast Monday through Friday on American Public Radio Stations. Each is a two hour program, hosted by two anchorpersons. The programs include headlines on the hour, and an assortment of stories on a variety of topics, including specific news stories, personal interest stories, humor, commentaries, interviews, and reviews of books, music, and films. The broadcasts include both pre-scripted and edited spontaneous discourse.
2. The source of the examples is indicated using the initials of the program, ATC for *All Things Considered* and ME for *Morning Edition*, followed by the abbreviated date the show was broadcast in the order month/date/year. In (3), ATC, 1/4/00 indicates that the example came from the *All Things Considered* program broadcast on January 4, 2000. The transcription indicates the speaker of each utterance by placing his or her name in capital letters at the beginning of each turn. In (3), the speakers are the host Noah Adams, whose turn is indicated as "ADAMS:" and the music reviewer Banning Eyre, indicated as "EYRE:".

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A discourse approach to metaphor: Explaining systematic metaphors for literacy processes in a school discourse community

Lynne Cameron

1. Introduction

By taking dialogic discourse as the site of metaphor use and metaphor change, discourse-based studies offer new understandings of the nature of metaphor that complement and challenge established cognitive metaphor theory. The study reported in this chapter adopts a socio-cognitive discourse approach to investigate the use of metaphor in a school discourse community. The starting point in a discourse approach to metaphor is the language that people use when they talk to each other in everyday situations, and here talk produced by a teacher and her students in a UK elementary school classroom is investigated for thinking about literacy processes.

Examples (1) to (4) show metaphors about literacy processes from a dataset of talk of teachers and their students about written texts: [1]

(1) *he's (the writer of a text) already said something like that when he was on about the blanket* [S]
(2) *but it's (the text) telling you in a different type of sentence which is quite good* [S]
(3) *that's (part of a text) quite well put so you can understand it* [S]
(4) *it (the story) does talk about raccoons* [T]

In each example, the underlined verbs refer to writing or the meaning of written text but have other, more basic, meanings not connected with writing and reading. The potential for understanding the contextual use of the word through its contrasting and more basic use signals the presence of 'linguistic metaphors' (Cameron 1999). The underlined words are the Vehicle terms of the metaphors, and the ideas they refer to are the Topics of the metaphors. This paper is concerned with the use, not just of single linguistic metaphors, but of 'systematic metaphors,' which are sets of

semantically connected terms from the Vehicle (or Source) domain, such as *said* (1), *telling* (2), *talk about* (4), which are used to talk or write about a connected set of Topic ideas, in this case, the meaning of a text (Cameron 2003).

Discourse-based studies of metaphor have increased over recent years, as researchers have applied techniques from corpus linguistics and from discourse and conversation analysis to the use of metaphor in contextualized talk and text (Cameron 2003; Cameron and Deignan 2003; Charteris-Black 2004; Semino, Heywood, and Short 2004; Semino 2005). Findings from discourse-based studies present interesting challenges to parts of cognitive metaphor theory. In cognitive metaphor theory, metaphor is viewed primarily as a mental phenomenon, and the construct 'conceptual metaphor' refers to a systematic set of fixed, stable mappings between mental domains (Lakoff 1993: 203). The presence of systematic linguistic metaphor in talk is explained as the expression of metaphorically structured concepts: "Because the metaphorical concept is systematic, the language we use to talk about that aspect of the concept is systematic" (Lakoff and Johnson 1980: 7).

Corpus-based studies that examine systematic metaphorical use of lexical items across millions of words of English reveal that mappings between domains, rather than being full and isomorphic, often have gaps and inconsistencies. For example, FIRE and HEAT are used as Source (or Vehicle) domains for a range of Topics, but while *flames* is used to talk about ANGER and LOVE, *fire* is only conventionally used to talk about ANGER (Kövesces 2000; Deignan 1999, 2005). Moreover, metaphorical uses of words emerge as much more fixed than literal uses; for example, while *light* and *dark* are used metaphorically to talk about what is known and unknown, this only happens in a limited number of fixed expressions such as *come to light* (Deignan 2005). It seems that metaphorical and literal uses of lexical items often bifurcate or divide over time, so that semantic ambiguity is largely dissolved by collocational or morpho-syntactic constraints. When linguistic metaphor is used in talk or text, various 'tuning devices' such as *kind of, sort of, like,* are often employed, further reducing potential ambiguity (Cameron and Deignan 2003).

Studies, such as that reported here, involving fine-grained analyses of metaphor in on-line situated discourse are still quite rare in the field of metaphor. This type of study investigates how people employ metaphor in the dynamics of social interaction and yields information about the nature of metaphor in language. Metaphor in talk uses verbs much more than nouns, and tends to occur in clusters with other, often quite different,

metaphors (Cameron and Stelma 2004; Corts and Pollio 1999; Corts and Meyer 2002). Metaphorical expressions in contextualized talk have an important affective dimension; they are chosen by speakers, not just for their conceptual content, but also to express particular feelings, values or attitudes (Cameron in press; Cienki 1998). Pragmatically, idiomatic metaphorical expressions are often employed in talk as summarizing and topic-closing devices (Drew and Holt 1988, 1995).

Metaphor theory needs to account for empirical findings such as the above, and work is on-going to develop theoretical explanations based in an ontology where metaphor is dynamic and dialogic, rather than fixed, is linguistic and affective, rather than just conceptual, and develops through the influence of social, cultural and historical factors (Cameron and Deignan 2005; Gibbs 1999).

In connecting language use with thinking, cognitive metaphor theory opened up the possibility that metaphor can serve as a methodological tool for uncovering how people think about the world, by working back from systematic metaphor use in language to systematic metaphorical conceptualizations. Once again, when dealing with metaphor in situated discourse, the situation becomes less straightforward than it might appear. The research program of cognitive metaphor theory is concerned to identify universal cognitive mappings that work across the language as a whole. For example, the linguistic metaphor *heavy burden* in *caring for an elderly relative places a heavy burden on a family* is explained as arising from a primary conceptual metaphor, DIFFICULTIES ARE BURDENS[2] (Grady 1999: 96). Conceptual metaphors are described at the highest possible level of generality, and explanations of mappings invoke basic correlations between human experiences (Gibbs 2002; Grady 1999). When we are concerned with the language and thinking of specific individuals as members of socio-cultural groups, research purposes may require us to work at a more specific level if, for example, research is to feed back into professional practice. Furthermore, the 'concepts' as instantiated in conceptual metaphors, abstracted across a speech community, are not the same as the 'concepts' or internal mental representations of individuals, particularly in the case of children, whose world knowledge and experience is limited.

Sets of connected metaphors in discourse may be described in various ways and it is not usually possible to identify which, if any, of several possible conceptual domains speakers may be invoking (Semino, Heywood, and Short 2004; Ritchie 2003; Vervaeke and Kennedy 1996). For example, linguistic metaphors such as these from Semino's corpus study of

metaphors of speech activity might at first sight seem to fit Lakoff and Johnson's well known conceptual metaphor ARGUMENT IS WAR:

> *The Chancellor also defended his stand on a European single currency once again we were firing questions* (Semino 2005: 51)

However, Semino argues that close analysis of the full range of linguistic metaphors in her data is better described by the less restricted conceptual metaphor ANTAGONISTIC COMMUNICATION IS PHYSICAL AGGRESSION (Ritchie 2003; Semino 2005).

In situated discourse, in contrast to data from a large corpus, collections of connected metaphors are 'systematic metaphors' relative to a particular socio-cultural group or discourse community. Appropriate descriptors for systematic metaphors are not the highly generalized labels given to conceptual metaphors, but labels that work at a level of generalization just sufficient to gather together the ideational and affective content of the connected linguistic metaphors. Systematic metaphor can be used as evidence of the thinking within the particular discourse community, but to infer or claim conceptual metaphor on the basis of discourse evidence is a further task.

In summary, findings from discourse-based studies suggest several important points for researching metaphor in situated and contextualized interaction:

- in abstracting and generalizing systematic metaphors from discourse events, attention should be paid to the specific aspects of the connected Vehicle and Topic domains, to the specific lexico-grammar of the linguistic metaphors, and to the affective dimensions of the metaphors.
- systematic metaphors are not the same as conceptual metaphors.
- the specific details of the mapping between Vehicle and Topic should inform selection of a descriptive label for a systematic metaphor.

To help explain systematic metaphors in discourse and their ontogenesis, discourse participants are seen as socio-culturally and historically situated individuals and their current language use as containing traces of earlier social interaction and participation in socio-cultural groupings. Through such "embodied, cultural interactions with the real world," individuals gain access to shared systems of thought and to metaphor (Gibbs 1999: 157). This process is partly one of appropriation, in which the child comes to

adopt the language used in interaction through an adaptive process in which both metaphor and meaning gradually shift over time (Bakhtin 1981).

The situated social interaction examined in this paper is talk around literacy processes in a school classroom. The following research questions are addressed:

(i) What systematic metaphors are used in talk about literacy processes?
(ii) How can the use of the systematic metaphors be explained?

2. Data

The spoken discourse data comes from the talk of students and teachers in an elementary school in the rural north of England. The children in the class were aged 9–11 years (equivalent to US grade 5 and 6), used English as first language, and were competent readers. The teacher in the data was the head-teacher of the school, a mature woman with many years' teaching experience. Thirteen hours of teacher-led classroom activity were recorded and transcribed, yielding around 26,000 transcribed words of spoken discourse. A further two hours of data was provided by the protocols of two think-aloud studies in which students read and talked about scientific texts. Linguistic metaphors were identified in the transcribed talk, providing a dataset of nearly 800 linguistic metaphors. Full procedural details can be found in Cameron (2003).

From the set of linguistic metaphors, those used to talk about the Topic domain of literacy processes – reading, writing, learning to read and write – were extracted. The Vehicle terms of the metaphors were then analyzed for thematic links, producing groups of metaphor related by content and use that were candidates for systematic metaphors.

3. Evidence of systematicity in metaphors for literacy processes

The claim that a set of metaphors found in discourse is systematic relies on three types of evidence of connection and constraints. First is evidence of thematic or semantic connectedness of Vehicle terms used to identify the set of metaphors. Within this set, we then look for evidence of consistent patterns of constraints on form and meaning in links between Vehicle and Topic domains. Finally, evidence of the boundedness of the set of metaphors comes from comparisons with other ways of expressing the same Topic ideas, metaphorically or non-metaphorically, in the discourse data.

3.1. Connected Vehicle terms

Four verbs emerged from the data as the most common Vehicle terms used to talk metaphorically about processes connected to reading and writing, semantically linked around the notion of speaking: *talk about, tell, say, sound.* The subjects of the verbs were either the writer [as in example (1)] or the text [as in examples (2) and (4)].

In these metaphors, writers and texts *SPEAK* to readers, where *SPEAKING*[3] is selected as a label to describe the connected Vehicle domain covering *talk about, tell, say, sound.* The dominant systematic metaphor for talking about literacy processes maps the Topic domain on to the Vehicle domain of *SPEAKING.* However, the discourse data reveal only one aspect of the literacy process being talked about metaphorically – the encoding of meanings in written text. Processes of comprehension and interpretation are not directly referred to metaphorically, but only by implication, as when a metaphor such as *it's telling you that the heart …* implies that the reader's access to understanding is through listening. There are no verbs from the *LISTENING* domain used metaphorically to refer directly to understanding (but see below for metonymic uses of such verbs). In line with findings from other discourse studies, the mappings of the systematic metaphor are partial. As discussed in the introductory section, while cognitive metaphor theory might explain the discourse data deductively as the use of a generalized conceptual metaphor such as LITERACY IS ORACY, an approach that works inductively from language use must stay as close as possible to the actual words used and take account of the asymmetry shown in the discourse data. Without further evidence, we can claim only that the discourse of the teachers and students shows systematic use of metaphors mapping from the domain of *SPEAKING* to the domain of *ENCODING MEANING IN WRITTEN TEXT.*

3.2. Patterns of constraints on form and meaning in links between Vehicle and Topic domains

The systematic domain mapping, *ENCODING MEANING IN WRITTEN TEXT IS SPEAKING*, displayed a further level of more fine-grained systematicity. The individual verbs were systematically used to express particular aspects of meaning in the Topic domain of literacy processes, and these are now described.

The verb *say* was used with two main metaphorical senses:

(i) to emphasize an aspect of meaning:

(5) *the next little bit of information says* [S]

(ii) to contrast implied and actual meanings:

(6) *that's what it means but it doesn't say that* [T]

The chunk of text that was the grammatical subject or object of the verb *say* was always a small part of a text, at sentence level or below, rather than whole texts or sections of text, e.g., *the next little bit* (5); *something like that* (1).

In contrast, the verb *sound* was used to refer to sentences or larger units of text. This verb was used metaphorically in two main collocational patterns:

(i) with an adjective, it was used to evaluate a text or part of a text:

(7) *it makes it sound more interesting* [S]

(ii) with *like* or *as if* , it was used to speculate about meaning or implications:

(8) *that (sentence) sounds like it's meant to …* [S]

The verb *tell* was used in collocation with *about* or *how* to summarize the meaning of sentence or larger unit of text:

(9) *it isn't telling you how to protect the earth* [S]
(10) *then he's telling you about harmful energy* [S]

The verb *talk about* was used to clarify the topic of a text, again at sentence level or above:

(4) *(the story) does talk about raccoons* [S]
(11) *he's talking about it was a shield* [T]

Across the set, at a gross level, the four verbs from the *SPEAKING* domain are used to describe metaphorically a range of ways in which written text encodes meaning. At a finer level of detail, these verbs were not

interchangeable, since each mapped slightly differently on to the Topic domain. The semantic systematicity of mapped domains is thus strengthened by systematic patterns at a finer grain which link lexical choice with aspects of meaning.

3.3. Other terms used for the Topic domain of literacy processes

The third type of evidence for the claim of systematicity comes from comparisons of the *SPEAKING* domain verbs with other ways in which the same speakers talk about literacy processes, both metaphorically and non-metaphorically. To investigate this, the data was examined with a concordancing program to find 'collocates of collocates.' Since the *SPEAKING* verbs collocated mostly with *he* and *it*, these pronouns were used as search words to find other collocating verbs. These verbs were in turn used as search words and references to literacy processes were counted. The results are shown in table 1.

Table 1. Numbers of uses of SPEAKING and non-SPEAKING verbs used to talk about literacy processes

Verb [a]	Total number of uses to refer to literacy processes
SPEAKING-related verbs	
say	32
sound	18
tell	38
talk about	7
go on	2
total	977
Verbs not related to SPEAKING	
go, go on	4
put	26
describe	8
explain	20
mean	44
total	102

[a] All forms of the verbs are counted.

From table 1, we can see that there are 95 occurrences of the *SPEAKING* verbs. Two other verbs were used metaphorically: *go* with 6 uses and *put* with 26 uses:

(12) *it goes on about the same subject* [S]
(13) *you understand once you get going on it* [S]
(14) *it's quite a good way of putting it* [S]
(15) *so I would put "you've had an awful lot."* [T]

Although *put* is not from the domain of *SPEAKING*, the phrase g*o on about* is a colloquial, and metaphorical, reference to *speaking*. Its use in connection with written text is a 'second-order' *SPEAKING* metaphor. Two of the six uses were of this type, making a total of 97 *SPEAKING*-related verbs.

The most frequent non-metaphorical lexical items used to talk about literacy processes were *mean, explain, describe*, with a total of 72 uses. If we add to these the uses of *put* and 4 non-*SPEAKING* uses of *go*, we reach a total of 102 uses of the five, very different, non-*SPEAKING* verbs used to refer to literacy processes, as compared with 97 uses of the four *SPEAKING*-related verbs. These figures offer further evidence for the claim that the *SPEAKING* verbs play a special and systematic role in talking about literacy processes.

4. The socio-cultural 'spread' of the systematic metaphor

Having found the systematic metaphor *ENCODING MEANING IN WRITTEN TEXT IS SPEAKING* in contextualized discourse, we may then ask how far such use is replicated in discourse beyond the local or micro-context of this particular group of students and teachers. The systematic metaphor may be conventionalized within socio-cultural groups of different sizes, and the spread of the systematic metaphor at these different levels could be investigated empirically:

– the local discourse community: the whole school.
  The metaphor may be used in school policy on literacy, in talk among teachers about literacy, and in classroom discourse with students across the school age range of 5–11 years.

– the wider discourse community: schools, teachers and students.

Trainee teachers may be exposed to the metaphor in course materials and lectures; it may be used in nationally-produced curriculum documents or in commercial teaching materials; the metaphor may be used when educational professionals communicate with parents. My personal experience as a teacher and a teacher educator suggests that the *SPEAKING* metaphor is used to talk about literacy processes throughout the UK educational system and there is systematicity across the wider discourse community.

– globally: the speech community of English language users, and into other languages and cultures.
The metaphor may be the prototypical way in which people talk about writing and reading. For example, as Vygotsky (1978) suggests, writing may be considered as a second order symbolic process, encoding the first order symbolism in which speaking encodes meaning. Western academic discourse makes use of other lexical items from the Vehicle domain, including *voice, tone, audience,* to talk about writing; this may also occur in other cultural contexts. Evidence of global systematicity would support a claim the metaphorical mapping is not just systematic in discourse but also fits the profile of a conceptual metaphor.

5. Explaining the systematicity found in talk about literacy processes

In order to explain the use of the systematic metaphor of *ENCODING MEANING IN WRITTEN TEXT IS SPEAKING* in the talk of the particular students and teachers, we go back to the teaching of reading and writing, and take an evolutionary perspective on the ontogenetic timescale. For the children in this study, learning to read and write was within recent memory and indeed on-going. I suggest that the metaphoricity found in language use can be explained as the dis-embedding of language from the situated action of teaching and learning to read and write.

Oral skills form the starting point for reading and writing; a child trying to write will first say the words to be captured in writing, and long before children can read, they listen to stories that adults read to them aloud or ‘tell’ them. Metaphors for literacy processes can be traced back to this ontogenetic move from oracy to literacy, but are also, I suggest, strongly influenced by the specific discourse around literacy teaching. In UK schools, the principal technique in early literacy teaching is individual reading aloud by the child to the teacher. During short spells of reading

aloud, the teacher monitors, guides, and intervenes in the learning process with instructional episodes. The children in this study were still reading aloud to the teacher about once a week.

The mediating talk that goes with early literacy teaching uses the *SPEAKING* verbs non-metaphorically, as in these (constructed) examples:

I'm going to tell you a story
here's a story that tells us
what does this word say?
what sound does that letter make?

The classroom discourse data includes some sessions where a child reads aloud to the teacher. Uses of the *SPEAKING* verbs here are metonymic, rather than metaphorical. In example (4), the teacher says after a child read a story aloud: *the story does talk about racoons.* This use of *talk about* is metonymic because, although the story doesn't talk, the child reader does. Similarly when the teacher says:

(16) *I want to hear you read* [T]

she speaks metonymically. She does indeed *hear*, because the child reads aloud, but she also teaches, assesses, monitors and gives feedback.

In helping a child improve her writing, the teacher suggests:

(17) *we'll have to alter this to say "Coniston slate quarries"* [T]

Since they are talking about written text, the new words will *read* rather than *say*, but the teacher also literally *says* them.

In the above examples, lexical items from the *SPEAKING* (and also here *LISTENING*) domain are used metonymically to accompany the situated action of teaching reading and writing. As literacy skills develop and reading becomes a silent, internalized process, the *SPEAKING* domain and the *LITERACY* domain become distanced and the same lexical items would be classed as metaphorical:

(18) *it* (written explanation) *sounds terribly complicated* [T]
(19) *it* (written sentence) *says the sun is just the right distance away* [S]

We can thus trace the evolution of *SPEAKING* metaphors for literacy processes from non-metaphorical use in situated action through a gradual disembedding of language from concrete activity. When language accompanies concrete activity, the words may be used metonymically, with a literal, physical sense but also meaning more than the simple concrete action. Students appropriate these ways of using language as they participate in learning to read and write with their peers and teachers.

Deignan's corpus-based study shows a parallel evolution of "metaphor from metonymy" (Goosens 1990), but on the phylogenetic timescale of the history of the language rather than, as here, on the ontogenetic timescale of the developing child. Expressions such as *turn your nose up*, or *keep an eye on* arise from correlations between abstract attitudes or acts and physical actions. Although they have often stabilized into restricted lexico-grammatical forms, they may sometimes be used both metonymically and metaphorically, and this ambiguity is assumed to be somehow helpful to discourse participants (Deignan 2005).

In the introduction, I noted that metaphors in discourse often carry affect, indicating the emotions, values or attitudes of speakers. The *SPEAKING* metaphors seem likely to do this through their recall of activities from earlier childhood. Their use simplifies and makes familiar literacy processes that, at this point towards the end of elementary level education, are becoming more complex and dis-embedded. In the next section, I consider whether using simplifying metaphors for increasingly complex literacy skills and processes may be damaging as well as helpful.

6. Educational implications: Moving to more complex metaphors for literacy practices

It is perhaps understandable that, as students move through elementary school, teachers continue to use familiar lexical items, either through habit or as a strategy to help students cope with new and more demanding tasks. Students, again not surprisingly, seem to use the same lexical items as their teachers. The cumulative effect of talking about and understanding literacy processes through the metaphors of *SPEAKING* may, however, affect the students' perceptions of what they are doing when engaged in literacy tasks. While familiar lexical items may help and reassure children, they do need to learn more abstract and complex concepts of reading, to develop more advanced literacy skills, and it may be that new, less simple, metaphors are needed to assist advanced learning (Spiro et al. 1989).

Creating appropriate interpretations of texts at secondary school level is not merely a matter of 'listening to what the text or author says,' but involves more active and cognitively complex processes of inferring, predicting, questioning, and comparing, and for these to be carried out silently and internally. The texts that students are asked to read are likely to carry several messages on different levels, and the reading task will include finding evidence for implied attitudes and assumptions, as well as understanding explicit information. Writers have available more than one way of *telling* or expressing meanings and values, and choose amongst them for particular purposes. More complex metaphors such as the following may be needed to better capture these more advanced skills:

working with words
extracting meaning from text
digging deep into a text
reading between the lines
teasing out implications and assumptions
employing a range of voices as a writer

These metaphors emphasize the hard labour of writing and reading, and the active work required of writers and readers, in contrast with the ease of simply *being told*.

The metaphors of educational discourse suggest that in England, and perhaps more widely, we are somewhat reluctant to present learning as a challenge to students, preferring to provide warmth, support and encouragement. This particular socio-cultural stance has been increasingly subject to critical evaluation, with moves throughout the 1990s towards tighter policies on a national curriculum, assessment and school inspection.

7. Conclusion: Discourse and cognitive approaches to systematicity

The study reported in this paper examined metaphor in talk by students and their teacher about processes of reading and writing. A systematic set of linguistic verb metaphors was found that connected *ENCODING OF WRITTEN TEXT* to aspects of *SPEAKING*. The mapping between the two domains was shown to operate with systematic connections and constraints: a restricted set of lexical items from the Vehicle domain of *SPEAKING* are mapped on to specific aspects of the Topic domain – in particular, to the meaning of chunks of written text of different size. There was also systematicity in

affect, in that the verb metaphors served to simplify ideas about literacy processes by referring to them in terms of *SPEAKING* processes.

The 'snapshot' of discourse about literacy processes in the school discourse community was captured in the last phase of elementary education, and the use of the systematic metaphor has been explained socio-culturally through considering how these students have learnt, and are learning, to read and write. The metaphors are traces remaining in discourse from earlier metonymic and non-metaphorical talk that accompanied concrete actions in learning to read and write.

As discussed at the beginning of the chapter, although it seems highly probable that speaking and listening provides a key source domain for metaphors of literacy processes more generally, it cannot be assumed that systematic metaphor found in situated discourse coincides with conceptual metaphor. Discourse data provides discourse evidence that needs to be interpreted within a discourse approach, and systematic metaphor is a discourse construct. Conceptual metaphor and the assumption that language use reflects shared patterns of thinking belong within the cognitive approach, and this approach is not about individuals and their language use but about language abstracted across large numbers of individuals. Additional evidence of the spread of the metaphor across a range of discourse contexts, needed to make a case for conceptual metaphor, could be sought by checking the findings against a large corpus of English (as is done, for example, in Cameron and Deignan 2003; Semino 2002; Semino 2005).

If researchers within a discourse approach cannot leap to claims about individuals' concepts and thinking using cognitive-theoretic arguments, what can they claim? In working with the specifics of situated talk or text, discourse-based studies of metaphor offer valid and detailed insights into the shared metaphors of socio-cultural groups and about the growth and appropriation of these shared metaphors. Furthermore, while single studies are limited in the generalizability of claims they can make, sets of linked empirical studies carried out in a specific discourse context, employing a range of methods and data types, can be used to build up a comprehensive and valid picture of the use and development of shared metaphors in a socio-cultural group. By taking dialogic discourse as the primary site of metaphor use and metaphor change, and requiring that theoretical descriptions of metaphor account for what is found in empirical discourse-based studies, a richer and fuller understanding of the nature of metaphor is being achieved.

Notes

1. Italics are used to indicate talk by discourse participants; underlined words are the Vehicle terms of linguistic metaphor. [S] and [T] indicate whether the speaker was a student or the teacher.
2. Conceptual metaphors are conventionally written in small capitals.
3. Descriptor labels for systematic metaphors are written in italics and small capitals.

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‘Superschemas’ and the grammar of metaphorical mappings

Joseph Grady[1]

1. Introduction

A particular set of questions has led to the analysis presented in this article, which it is helpful to enumerate at the outset of the presentation. In order of increasing generality (and therefore increasing interest to a broader audience), these questions are:

a. What do a metaphorical source (vehicle) and target (topic) have in common, if anything?
b. What does a full and accurate description of metaphorical patterns look like?
c. What can metaphor tell us about language and mind more broadly?

Questions a and b have been labored over by scholars in a variety of fields including literary studies, psychology, philosophy and linguistics, and will be the focus of this paper as well (particularly question a). But whether explicitly or implicitly, it is usually the third question that provides researchers with a motivation for pursuing these questions. If possible, we would like to draw conclusions from the nature of metaphor about the nature of communication and thought. In the end, conclusions about the relationship between source and target concepts are interesting because they help us understand the nature of metaphor, but even more interesting as they bear on fundamental questions about conceptual structure, for instance.

2. ‘Resemblance’ vs. ‘Correlation’ metaphors

The traditional response to question a within the various fields where metaphor has been treated as an object of study has been to argue, or to assume, that the source and target are associated in thought and language because they share a quality of some kind (often known as the “ground”),

making one a suitable stand-in for the other. A nation is *like* a ship in important respects; a thin person is *like* a beanstalk; and so forth. This has been the dominant theme of accounts within all the fields mentioned in the introduction.

An important variant on the *ground* position is the *interactionist* position, holding that similarity is at least partially a product of metaphor, rather than its starting point. When we frame marriage as a competitive game, for instance, we evoke a new construal of both games and marriage, such that an analogy between them comes to light (see Black 1993: 28–29). One of the defining principles of the approach sometimes called "conceptual metaphor theory," initially developed by Lakoff and Johnson, has been that metaphors are not necessarily based on similarity. While arguing along somewhat different lines from Black, Lakoff and Johnson are even more explicit about the proposal that metaphor can create similarity: "[T]he IDEAS ARE FOOD metaphor establishes similarities between ideas and food. … These similarities do not exist independently of the metaphor" (Lakoff and Johnson 1980: 147). Lakoff and Johnson also stress the idea that it can be very difficult to identify the ground that allegedly unites two concepts. Their account (along with subsequent ones) questions, for example, the notion that an increase in inflation rates is "like" the rising motion of a flying object ("prices soared"). As an alternative way of accounting for a metaphorical pattern like this one, they point to recurring *correlations in experience* that link the conceptual domain of physical height with that of quantity (the height of a pile, the level of fluid in a container, etc.).

Grady (1999) was largely an attempt to sort out this apparent contradiction in the scholarship on metaphor by suggesting that some metaphors are based on shared features while others are not – and that, more interestingly, this difference is associated with classes of metaphors which differ in other ways as well.

2.1. Resemblance-based metaphors

Grady (1999) used the term "resemblance" for the class of metaphors based on shared features – partly in order to avoid some of the controversial associations with the term similarity, and more importantly, to convey the idea that the "resemblances" are located in construal rather than objective reality (avoiding one of Lakoff and Johnson's chief objections to previous accounts). For example, lions, in one common construal, are thought of as

"brave," even though there are other, more scientifically defensible construals that do not include this anthropomorphizing feature.

Grady's resemblance class subsumes certain classes defined in other metaphor scholarship, such as Dedre Gentner's (1988) distinction between "attribute" metaphors, based on physical resemblance (known as "image metaphors" within conceptual metaphor theory) and "relational" metaphors, based on shared properties other than physical resemblance.

Resemblance metaphors

Image/Attribute	Shared perceptual properties (e.g., Ed is a beanstalk.)
Relational	Shared non-perceptual properties (e.g., Tom is a wolf. A cigarette is a time bomb.)

Resemblance metaphors are easily generated and, in principle, infinite. The kinds of concepts that figure in metaphorical associations of this type are also limitless. Such metaphors can be generated on the spot, and psychological researchers, for instance, have taken advantage of this inexhaustibility to generate copious stimuli for their experiments (see e.g., Glucksberg and Keysar 1993).

2.2. Correlation-based metaphors

Grady's "Correlational" metaphors, also referred to as primary metaphors (e.g., Grady 1997), are much harder to account for in terms of features shared between source and target. Instead, they are based, as Lakoff and Johnson suggested, on recurring correlations in experience; this is the class to which Quantity As Height belongs, for example. It is a more limited set than the resemblance-based metaphors, not (yet) defined precisely enough to be counted, but on the order of scores of patterns, among which are:

- Difficulty As Heaviness (e.g., a *heavy* workload)
- Achieving-an-Objective As Arriving-at-a-Goal (e.g., He'll ultimately be successful but he's *not there* yet.)
- Categories As Bounded Regions (e.g., Are tomatoes *in* the fruit or the vegetable category?)

These patterns are more constrained and also more "asymmetrical" than the ones in the Resemblance class. The source and target concepts of

primary metaphors must each represent a fundamental dimension of experience: the relative difficulty of something we are trying to do, the heaviness of an object, the sense of achieving an objective (even one as simple as lifting a glass), the experience of arriving at a location (which might simply be the chair we intend to sit in), etc. Unlike the source and target concepts of resemblance metaphors, primary source and target must also be grounded in quite distinct domains of experience.[2] A resemblance metaphor, on the other hand, may compare two items that share a common visual feature – e.g., "flaming hair" – or two tokens of the same rather abstract category, such as Failure/Defeat ("I predict the debates will be Bush's Waterloo" – an inaccurate prediction posted on www.bushlies.com[3]).[4]

Resemblance metaphors are also more symmetrical in the sense that they are usually interpretable when source and target are reversed, even if this reversal produces a much less conventional metaphor. For example, if the second debate in the 2004 presidential campaign between John Kerry and George W. Bush (in St. Louis) had turned out to be recognized as the moment when the Bush campaign collapsed, there is no reason that political insiders wouldn't start referring to moments of failure as "my/her/his St. Louis." From there it would be a relatively short step to referring to Napoleon's defeat as "his St. Louis." By contrast, it simply makes no sense to use quantity as a metaphorical substitute for height. (e.g., "The bird is much more than it was a moment ago.") The relative directional symmetry of resemblance-based metaphors is not too surprising, if these patterns of conceptualization are based on properties shared by source and target. The strict unidirectionality of primary metaphors is, in this sense, more interesting and unexpected.

Primary metaphors are asymmetrical in another way that is especially important for the present discussion, and indirectly alluded to above. They are characterized by a very particular difference between the content of their source and target concepts: source concepts have what can be called "image content" (i.e., they refer to particular aspects of sensory experience, such as brightness, heaviness, warmth, and forward motion), while target concepts have no image content, and instead refer to fundamental aspects of experience *not* directly tied to particular sorts of perception – happiness, difficulty, affection, etc. (I have referred to this type of content as "response content" – e.g., Grady 1997).

The characteristics of primary metaphors are summarized below, including the fact that they are so common in our own thought and language that we hardly notice them, and the fact that each of these patterns

is extremely common crosslinguistically (a fact we might predict given that the kinds of experiential correlations that these metaphors reflect are probably universal).

Primary metaphors
– Patterns that reflect recurring correlations in experience
– Source contains 'image content'
– Target contains 'response content'
– Source, target are fundamental dimensions of mental experience
– Wide crosslinguistic distribution
– Extremely common
– Not very numerous

The striking asymmetries in primary metaphors bring us back to the original question of what source and target might share, if anything. We may approach an answer to this question by considering more closely what types of experiential correlation are and are not implicated in primary metaphor.

2.3. Correlation and primary metaphors

Importantly, primary metaphors do not arise from just any recurring correlation in experience. There are many correlations, for instance, that give rise instead to conventional associations that are more metonymic in character. There is a strong association in our experience between conceptualizations of books and their authors, but the frequent pattern in which authors' names are used to refer to their works ("He's read all of Aquinas") is certainly a metonymic rather than a metaphoric pattern. To take a very different kind of example, in our visual experience there is a very strong association between a certain shade of blue and the relative position and expanse of the sky. But most English speakers would probably judge that a reference to the sky as "the blue" would be more metonymic than metaphorical.

What kinds of correlations in experience do lead to entrenched metaphorical patterns of association? As we have already seen, primary metaphors are associations between very fundamental concepts one of which is sensory and the other of which is not. This is one of the necessary conditions for the formation of a primary metaphorical association. A second is that the sensory and nonsensory concept must "covary" in our

experience. It is easiest to explain this criterion (borrowed from mathematics) through examples:

The heavier an object is, the more difficult it is to lift or manipulate it – difficulty varies with heaviness. The moment of achieving a purpose coincides with the moment of reaching an intended location – there is a temporal contour shared between these two dimensions of the experience (spatial and intentional). In effect, the notion of covariation is a further specification of the idea of experiential correlation. Note that the position of the sky doesn't vary with its blueness, for example.

The final necessary condition on the correlations that underlie primary metaphors will be the focus of the next section of the paper: the concepts referring to the two experience types must share *superschematic structure*.

3. "Superschematic" structure

The third necessary (but not sufficient) condition for primary metaphor, besides those discussed in the previous section (covariation in experience and the pairing of image and response content), is that source and target concepts of primary metaphors must share common elements of cognitive topology. More specifically, they share what I have termed "super-schematic" structure (see Grady 2005). This analysis is in the same general spirit as the Invariance Principle as discussed by a number of scholars in the conceptual metaphor theory tradition (e.g., Brugman 1990; Lakoff 1990, 1993; Turner 1991).

The Invariance Principle, however, has consistently been stated in terms of *image-schematic* structure. Turner (1990: 252) states that, "In metaphor, we are constrained not to violate the image-schematic structure of the target." Lakoff (1993: 215) states that "sources will be mapped onto sources, goals onto goals," and so forth. I have previously argued, however, that since target concepts have no sensory (i.e., image) content, they have no image-schematic structure, and therefore the Invariance Principle as stated does not apply to primary metaphors (Grady 1997). Instead, source and target share structure at an even more fundamental level. An example will help illustrate this very abstract type of structure as well as its role in metaphoric mappings.

3.1. Similarity As Proximity

An expression like "This isn't the kind of phone I wanted – not even *close*!" is based on a widely recognized metaphorical association between similarity and physical proximity. As the discussion in previous sections suggests, the connection between these two concepts is more plausibly explained in terms of experiential correlation than by reference to a similarity between the two concepts. (Is being close to something *like* being similar to it?) As Grady (1997) suggested,

> Similar objects are often near to each other in our environment – e.g., blades of grass cluster together in a lawn, rocks cluster together on the ground, clouds cluster together in the sky, and so forth. Perhaps as importantly, it is easier to make comparisons and perceive similarity when objects are closer together. Furthermore, visual backgrounds and other context features which may affect our perception of an object are likely to be more similar for two objects near each other than for two which are separated by a greater distance.

If Similarity and Proximity are related by their co-occurrence in certain common experience-types, does this mean that, as concepts, they have nothing whatever in common? In fact, our intuitive sense that they are parallel in some way is confirmed when we examine the two concepts more closely.

When we look carefully at these two basic concepts, we immediately recognize that they are not indivisible "atoms" of meaning. First, each is a *relation* between entities – even if the relations are of utterly different kinds, one spatial, and the other much more general. Furthermore, each is a relation that most basically holds between *two* entities, though it can also hold among the members of a larger set. Finally, each of these relations is *scalar* – objects can be either more or less close to each other, and similar to each other. In short, both Close and Similar can be called Binary Scalar Relations, and the mapping between them respects and preserves these aspects of conceptual structure: closer means more similar; and the object that is the standard of comparison (e.g., "yours" in "My jacket is like yours") corresponds to the "landmark" in the close relation (see Langacker 1987: 217–220).

I contend that this type of parallelism between source and target – as opposed to shared image-schematic structure per se – is a necessary condition for two concepts to participate in a (primary) metaphorical mapping. In fact, parallelism of this kind is so fundamental that it seems

nearly incoherent to imagine basic metaphorical connections that violate the principle: Similar = A Container? Similar = Moving Towards A Goal? Similar = Between [a three-way spatial relation]? The conviction that source and target of metaphors must have something in common is ratified at this level of abstraction higher than those usually addressed in the literature on metaphor.

On the other hand, shared structure at this level is by no means a *sufficient* condition for two concepts to participate in a conventional mapping. There are many binary scalar relations in our conceptual repertoire – Above, Below, Next To, Intimate, Cooperative, Opposed, Counterbalanced, etc. But we can't simply choose one of these as a source concept, Cooperativeness for example, and arrive at a conventional (or even plausible) metaphor for Similarity. Of course, this might be because Cooperativeness doesn't meet other criteria for source concepts – in particular, it has no image content. When we consider other binary, scalar, *spatial* relations that can't stand for similarity – Above, Below, Central, Peripheral, etc. – the special association between Closeness and Similarity becomes very clear, and this connection is most plausibly explained in terms of the correlations in experience mentioned previously.

To summarize, I argue that the metaphorical mapping that relates closeness to proximity, like other primary metaphorical mappings, depends on three factors:

– Correlation (and covariation) in experience
– Pairing of image and response content
– Shared structure at a level more abstract than image schemas, i.e., superschematic structure

Taken together, these necessary conditions make up a sufficient set of conditions to license a primary metaphor. It will be helpful now to consider another example of the structure shared between primary source and target concepts.

3.2. Successful Effort As Motion Towards a Destination

One element of the common and very rich pattern referred to by Lakoff (1993) as the Event Structure Metaphor is the association between forward spatial progress and (intermediate) success: "We're making *steady progress towards* completion."[5] These two concepts are correlated, and covarying, in

experience. To take a simple example already mentioned, as we walk closer to a chair we plan to sit in, we can sense that we are gradually achieving our (very simple) purpose. The source and concepts also conform to the image and response requirement for primary metaphors: the notion of forward motion is tied to specific image content, while the idea of successful effort is not, and refers instead to intentionality and possibly aspect (each an example of "response content").

With regard to shared abstract structure, i.e., at a level more general than image-schematic structure per se, the source and target in this pattern are both understood as *processes*. Unpacking this idea even further, we can say that each involves *temporality* (i.e., it necessarily refers to a type of scenario that unfolds over time); and neither refers to a singe moment, nor to a particular start or end point. That is, each is *unbounded* in the sense of Langacker (1987: 189–207). In short, both Successful Effort and Motion Towards A Destination can be characterized as *unbounded temporal relations*.

This example and the previous one will serve as an introduction to a more general consideration of parameters that make up superschematic structure.

3.3. Parameters of superschematic (conceptual) structure

The following are elements of structure shared by source and target concepts of primary metaphor, at an even higher level of abstraction than image schemas.

Note that in each case, the structure inheres within a given construal, not an analytical representation of objective reality. (Note that these conceptual parameters have all been discussed by others in various contexts – particularly in Langacker's writings on Cognitive Grammar, see below – and are not in and of themselves original contributions of this analysis; but they are being recruited to a novel purpose here.)

– Ontological category
  This parameter refers to whether the source concept is construed (for purposes of a given conceptualization) as an Event, Process, Thing, Relation, etc. For instance, when a Category is conceived of as a Location, both are *things/entities*.

– Scalarity/Dimensionality
  Some basic concepts – such as Tall, Heavy, Near – are fundamentally scalar in nature while others – Arrival, Inside, etc. –are not. This parameter is relevant to a metaphor like Anger As Heat, for instance, where both source and target are (construed as) scalar in nature.

– Arity
  This parameter (borrowed from mathematics and computational science, and based on the suffix of *binary*, for instance) refers to the number of entities that figure in a given relation or scenario. For instance, the English verb *put* most typically encodes a three-place relation: a Person places an Object in a Location. Referring again to an example mentioned previously, both Similar and Close are 2-place, i.e., *binary*, relations.

– Aspect (e.g., punctual, durative, fast/slow, etc.)
  Temporal shape or contour is another property shared by source and target concepts of primary metaphor. For example, in those familiar types of scenarios where we might say "I see what you mean," both visual and cognitive dimensions of the experience are stative in nature rather than punctual, for instance. But note that if the intended meaning is "I suddenly (punctual) understand what you mean," then the figurative "seeing" is probably also conceived as taking place in a particular moment, and the expression may even be accompanied by a single, sudden gesture. (McNeill 2003)

– Boundedness
  This parameter refers to whether a given entity, process, etc. is understood as having well-defined limits. For instance, a book or a city is (relatively) clearly delimited in space, an hour or a party or an invasion is (relatively) clearly delimited in time, etc. Water, happiness, reading, etc., are not (see e.g., Talmy 1978).

– Trajector-Landmark structure
  In most scenarios with more than one participant, there is an asymmetry such that one is conceived as the principal locus of attention (trajector), while others play secondary though important roles (landmarks). For instance, in the relation encoded by "the book on the shelf," the book is the trajector while the shelf is the landmark. A similar asymmetry is also recognized in nonspatial scenarios: If "Tom resembles Phil," then

Tom is the trajector and Phil is the landmark (see Langacker 1987: 231).

– Causal structure
  Causality is a common and easily recognized dimension of many scenarios. A given event causes another; a given participant causes a particular event, and so forth. For instance, in the mapping between (social, psychological) Compulsion and Compelling Force – e.g., "My friends *pushed* me to volunteer." – the "causer" and "causee" in the pushing scenario correspond to the causer and causee in the cajoling scenario. (Note that, like all elements of construal, perceived causal structure does not necessarily correspond to anything we can easily point to in objective reality.)

3.4. Metaphors and superschematic structure

With the examples in the previous section as illustrations of superschematic structure, we can now consider some more primary metaphor patterns, and how source and target in these patterns are alike at this highly abstract level.

– Difficulty As Heaviness
  e.g., *heavy* work*load*, a *burdensome* assignment, the *weight* of responsibility.
  Both difficulty and heaviness can be conceived as Scalar Properties.

– Quantity[6] As Height
  e.g., *high* crime rate, *lower* than average assets, *mounting* problems.
  Both physical height and quantity can be understood as Scalar Relations. Note that the third example also involves a construal of *process* (see below).

– (Resulting from a) Cause As (Emerging from a) Source
  e.g., consequences *flowing from* the decision, useful things that *came out of* the meeting
  When we conceive of results as *coming from* causes, both ideas are understood as Binary Relations. Note that the trajectors line up (effects, objects-in-motion) as do the landmarks (causes, sources). The construals of source and target may also share a temporal dimension, if they are conceived as processes (unbounded) or events (bounded); in either case,

Aspect is part of the shared superschematic structure.

– Anger As Heat
  e.g., *burning* with rage, *heated* exchange
  Both source and target can be construed as Unbounded Entities, or alternatively as Scalar Properties (angry, hot).

The examples are summarized in the table below. The first two rows include reminders and discussion of the parameters of superschematic structure that are in play.

Table 1. Targets, Sources and Superschematic 'Grounds' for Primary Metaphors

Target	Source	Superschematic Structure
Similarity	Proximity	Binary (arity) Scalar (scalarity) Relation (ontological category)
Compulsion	Propelling Force	Unbounded (boundedness) Entity (ontological category) with Trajector-Landmark Structure Or, Temporal (temporality) Relation (ontological category) with Causal Structure, Trajector-Landmark Structure (i.e., the *process* of compelling/propelling)[7]
Difficulty	Heaviness	Scalar Property
Quantity	Height	Scalar Relation
Sucessful Effort	Motion Towards a Destination	Unbounded Temporal Relation
(Resulting from) Cause	(Emerging from) Source	Binary (temporal) Relation, involving Trajector and Landmark
Anger	Heat	Unbounded Entity (or Scalar Property)

(Note that it does not appear relevant how many parameters of superschematic structure are shared in a given mapping.)

We have arrived at the idea of superschemas through exploration of primary metaphors, where a metaphorical 'ground', as traditionally understood, is hardest to identify. And we can, for the moment at least,

define superschemas as elements of conceptual structure shared by source and target concepts of primary metaphors. But we may now observe that the requirement of shared superschematic structure (the "Superschema Rule") applies to other metaphors as well. For resemblance-based metaphors (including those that create the sense of similarity) there are always more specific conceptual features shared by source and target. As Longfellow urges, "sail on, O ship of state," we recognize that both ships and nations are construed as large and complex, subject to good or bad fortune, guided by responsible decision-makers, etc. At the superschematic level they are both Bounded Entities, for instance. If an idea is a "gem," we understand that it is valuable and hard to come by – and once again, like an idea, it is construed as a Bounded Entity. In short, the Superschema Rule applies to all metaphors.

Note also that the superschematic requirement offers one way of distinguishing between "true metaphors" and idiomatic expressions such as "kick the bucket." The source image is a Binary Event involving an Agent/Trajector and a Patient/Landmark. There is no conventional construal in which the corresponding target scenario (i.e., death) includes a Patient/Landmark.

The superschema notion is, for the present, an empirically determined one, based squarely in the relationship between metaphorical source and target concepts. A consideration of the relationship between superschemas and grammar, however, suggests the broader significance of the category.

4. Superschemas and grammar

While such notions as scalarity or ontological category might be irrelevant to some theories of grammar, cognitive linguists generally take it as a basic assumption that much or all of grammar has meaning. One of the scholars most interested in this area of research, Talmy (1998: 46 and elsewhere) has referred to grammar as the "fundamental conceptual structuring system of language." And indeed, all of the conceptual parameters discussed in previous sections – arrived at through examination of the relationships between metaphorically paired concepts – have also played important roles in grammatical theory, and particularly in Langacker's expositions of Cognitive Grammar (e.g., Langacker 1987, 1991a). I will begin this section by offering brief pointers to the grammatical significance of the various superschematic parameters proposed so far, before turning to further discussion of the relationship.

– Ontological category
  The construal of a given stimulus as an event, thing, process, relation, state, etc. bears most directly and obviously on grammatical class – nominal, verbal, adjectival and so forth. Langacker's definitions of grammatical class refer explicitly to ontological categories: "Counter to received wisdom, I claim that basic grammatical categories such as noun, verb, adjective, and adverb are semantically definable … A noun, for example … designates a thing" (1987: 189).

– Scalarity/Dimensionality
  Relative position along a scale (e.g., of dryness, friendliness or any other property that is a matter of degree) is a conceptual basis for the grammatical category of comparatives, for instance.

– Aspect
  Temporal contour (punctual, durative, progressive and so forth) is a fundamental parameter determining the grammatical form of verbs (see e.g., Langacker's discussion of progressives, 1991b: 91–97). Languages may have very simple grammatical aspect systems, or may have rich inventories of derivational affixes encoding verbal aspect.

– Boundedness
  Boundedness (vs. unboundedness) is the semantic basis for the grammatical distinction between mass and count nouns, for instance. *Book* is a count noun referring to a conceptually bounded entity (i.e., an *object*), and may take a plural form, while *water* refers, in its most common sense, to an unbounded *substance*, and is a mass noun that does not take the plural.

– Arity
  The number of arguments in a particular relation is relevant not only as a parameter of a scenario, but is also a basis for valence and argument structures. To return to an example offered earlier, it is not only a semantic necessity for *put* to have three arguments, corresponding to agent, patient and location/path, but a grammatical one. (*He put the tomatoes.)

– Trajector-Landmark structure
  Langacker and others argue that the trajector-landmark relation in conceptual structure underlies various important grammatical categories

including possessives and the subject-object distinction: "The notions subject and object prove to be special cases of trajector and landmark respectively …" (Langacker, 1987: 217).

– Causal structure
  This parameter is of course, the basis of various grammatical expressions of causality, both morphological and syntactic – e.g., French *faire* + infinitive (*On nous a fait sortir le plus possible*, "They made us get out as often as possible").

Although all the superschematic parameters we have discussed so far are relevant to grammar, grammar is certainly not only a reflection of superschematic structure.

4.1. Grammatical meanings not based on superschemas

There are many types of grammatical meaning that do not appear to be related to superschemas. For instance, the grammatical distinction between first, second, and third *person* is based on the configuration of a speech situation – including a shared understanding about who is the speaker, who is the addressee and so forth. Person, in this sense, does not appear to be a conceptual category that plays a role in the mapping of metaphorical concepts. Consider the metaphorical statement, "She's been very cool (i.e., unfriendly) to me." The statement reflects the common mapping between the domains of affect and temperature. The arrangement of *persons* (third and first respectively) reflects the speech configuration rather than anything about the notion of coolness that is metaphorically projected.

Nor does grammatical *mood* relate in any obvious way to the superschematic level of conceptual structure. Moods such as conditional, subjunctive, indicative and interrogative are indicators regarding whether an utterance is intended as a statement about reality, or something else (a question about reality, an assertion about what *might* have been, what someone else has reported to be true, and so forth). Like person, this type of relationship between utterances and reality is fundamentally important to communication, but is not in the same conceptual realm as the superschemas shared between metaphorical source and target concepts. The conditional mood of a statement like "He would have exploded" is the same as it would be in a literal paraphrase such as "He would have gotten very angry" – it is more naturally understood as a quality of the framing

sentence than as an aspect of the metaphorical concept being mapped. By contrast, the concept "explode" has an inherent temporal contour – sudden rather than continuous, for instance – which is an element of the conceptual mapping, shared between source and target. Verbal aspect reflects superschematic conceptual structure, while mood does not.

As a first step in sorting out the types of grammatical meaning that are and are not related to superschemas, consider Sweetser's (1990: 49) distinction between the *root* and *epistemic* senses of modals like *must*:

> Robert must go to the store. (root, referring to an obligation in the world)
> Robert must be at the store. (epistemic, referring to the inevitability of a particular conclusion)

When we review the types of superschematic structure considered so far, we find that they refer to something closer to Sweetser's root meanings (as well as to what Fauconnier [1994: 14] has referred to as the "speaker's 'real' world," the external, physical world as we conceive it; and to the referents of more objective rather than more *subjective* expressions, in the sense of Traugott 1995, for instance). They refer to aspects of the (real or imagined) world being described by the utterance, rather than to relationships between speakers (as in grammatical voice or honorifics,[8] for example), speaker and utterance (as in various grammatical moods), or one part of an utterance and another (as in anaphora, government relations or complementizing constructions[9]). In short, superschemas constitute one level of structure of the world we are talking *about* – the number of entities in the scenario we are talking about, the ontological status of what we are talking about, the temporal contour of the scenario we are talking about, its causal structure, and so forth.

Even this observation is not yet sufficient to distinguish the types of grammatical meaning that do and do not reflect superschematic structure. There are many types of grammatical meaning we can point to that do reflect aspects of a scenario and yet do not appear to be based on superschemas as we have defined them here. One rich source of examples of this type is the classifier systems of the world's languages – grammatical categories (of nouns in particular) that can often be associated with semantic categories. Among the many types of meaning attributed to classifiers are:

– Gender (masculine, feminine, neuter)

– Shape (e.g., round, flat, long)
– Animacy
– Material (e.g., wooden)
– Status (e.g., associated with ritual)

Each of these meanings can be expressed through grammar, e.g., morphological marking, in at least some of the world's languages, and each refers to an aspect of the world we might be talking about. Yet gender, shape, material and so forth are not properties that must be shared by metaphorical source and target concepts. Source and target *might* both be animate (e.g., He's a real pig), but personification of inanimate objects is also common (e.g., The waves lashed mercilessly against our small boat). Source and target might both be round in shape (e.g., the sun or moon as an *eye* watching earth), but the moon is also personified, as Selene for instance. There is obviously no requirement that if source or target is a wooden object then the other must be, too. Beyond this argument based on the proposed definition of superschemas in relation to metaphorical mappings, we may also observe that concepts like Flat, Male and Wooden do not intuitively seem to belong to the same level of structure as ones like Binary, Scalar, Relational and so forth. In short, even if grammatical classification is based on parameters that are cognitively or culturally basic in some important sense, these parameters are not superschematic; as the name implies, superschemas reflect a higher level of schematicity.

Likewise, the meanings associated with grammatical *case* seem clearly to be fundamental to thought and communication, but are not necessarily superschematic in nature. Some cases found in the world's language, such as *allative* (prototypically indicating a landmark towards which a trajector is moving), denote spatial relations. Since source concepts of primary metaphor may include spatial meaning but target concepts may not, such meanings as "motion-towards" cannot be superschematic in the sense intended here. (In fact, they are closer in nature to image-schemas.)

Certain other cases, like accusative or nominative, are often held to have no meaning, and to have a purely grammatical status, indicating the relationships between arguments within a clause, for instance. Not surprisingly, cognitive linguists like Langacker have a different perspective:

> What might be proposed as the *conceptual basis* for NOM/ACC [nominative-accusative] and for ERG/ABS [ergative-absolutive] organization? Case marking offers a clue. … In a strict NOM/ACC system,

> the respective cases consistently mark the subject and direct object, which we have characterized schematically as the primary and secondary clausal figures. … (Langacker 1991a: 381–382) [emphasis added]

In Langacker's view, the nominative-accusative distinction reflects the trajector-landmark distinction in conceptual structure,[10] which we have already identified as superschematic.

4.2. Metaphor and grammar

One aspect of metaphors not usually commented on is that, within a given metaphorical expression, e.g., a phrase or sentence, the vehicle/source term often fits a grammatical slot where we might otherwise substitute a target term.[11] I may refer to an "affectionate person" or a "warm person" (adjective preceding the noun it modifies); we can talk about "grasping the point of an article" rather than "understanding the point" (transitive verb followed by direct object); we may read that treaty talks have "collapsed" (metaphorical intransitive verb) or "failed" (literal). Given the Superschema Rule, it is not surprising to find that the linguistic expression of a given source concept often matches the grammar of a corresponding target expression. Entities tend to be expressed by nouns; processes are often expressed by verbs in progressive mood, etc.

Importantly, however, the observation that superschemas are relevant to both grammar and metaphors does not "fall out" from grammatical constraints on metaphorical language. Metaphorical terms are not simply "substitutes" for literal ones. There is no requirement that a metaphorical expression be easily paraphrasable with a grammatically identical one (nor any guarantee that it can easily be paraphrased at all). Consider the statement that the U.S. government is urging Japan to "embrace transparent rules" regarding trade (*Washington Post* editorial, "Wag the Cow," March 11, 2005). Even though the Superschema Rule tells us that the target concept referred to by "transparent" is a Property, and probably a Scalar one, it is not necessarily easy or even possible to find another, literal adjective to fit this slot in place of the metaphor. To express this concept (or something passably close) in literal terms, we might need a longer phrase, such as "rules that are made known to everyone." Likewise, there is no reason to expect we can find a literal verb that could be inserted in place of "embrace," even though, on the conceptual level, the target must have the same superschematic profile as Embrace. In short, superschemas are

important to both grammar and metaphor, but not because metaphorical language must fit into particular grammatical slots.

5. Conclusion

The starting point for the discussion in this paper (question a) concerned the nature of the relationship between source and target concepts in metaphorical mappings. By examining a set of primary metaphors – figurative patterns that play a foundational role in thought and language, and which are hardest to account for in terms of "similarity" – we arrived at a set of parameters, and a requirement that they be shared by source and target. These parameters cannot be described as image-schematic, as earlier discussions of metaphor have suggested. Instead, the structure shared by concept pairs like Heavy/Difficult and Close/Similar is at a level even more abstract and "topological" than image-schemas, which I have called the superschematic level of structure. It is a necessary (but not sufficient) condition for primary metaphor that source and target can be construed as sharing the same superschematic structure – both are Scalar Properties, both are Bounded Entities, and so forth. In effect, this Superschema Rule is an elaboration of the intuitive idea that the metaphorical source concept must fit the "conceptual slot" otherwise occupied by the target.

Looking at the issues more broadly (question c), metaphorical and grammatical data appear to constitute converging evidence for the centrality of superschemas in conceptual structure. Both types of data suggest that superschemas act as important cognitive organizing principles for parsing scenarios. Such parameters as temporal contour, ontological category, arity and boundedness[12] define a level of conceptual structure that is fundamental enough to be encoded in every utterance (i.e., through various features of grammar) and to define the type of isomorphism that allows one concept to stand metaphorically for another. Importantly, this level of structure, which appears to play an important role in both grammar and lexical semantics, is itself conceptual and non- or pre-linguistic.

While it is not possible at this stage to provide a precise definition of superschemas or superschematic structure, I hope that the examples and discussions in the article offer a useful sense of the intended scope of the concept, and that other types of evidence can ultimately be brought to bear in order to further clarify and refine the status of these important conceptual parameters.

Notes

1. I am grateful for the helpful and insightful comments and suggestions of several reviewers of this article.
2. More speculatively, these concepts might even be associated with activity in different brain areas, e.g., those responsible for processing spatial and emotional dimensions of experience, respectively.
3. David Corn's wesite, http://www.bushlies.com, July 31, 2004.
4. These latter references may feel less metaphorical than some others. There is a tradition of measuring degree of metaphoricity in the psychological literature. Certainly, novelty is one factor in making a given expression seem more metaphorical than another. A second factor is semantic "distance" (e.g., Trick and Katz 1986), and it may be the case that primary metaphors (discussed below) are among the best examples of metaphor based on this criterion.
5. For a variety of reasons, I believe it is most helpful to treat Lakoff's "Event Structure Metaphor" as a complex of distinct mappings that are more or less closely related, and sometimes independently motivated.
6. As a reminder, Quantity counts as a "response" concept because it is not associated with any "particular" kind of sensory experience. There is no dimension of sensory experience that is common to scenarios that involve *more inflation*, *more noise*, *more sophistication*, etc.
7. Note that any particular construal that derives from this basic pattern will have a particular Aspectual contour, shared by source and target – perfective (His friends have finally *driven* him to act), progressive (They are *pushing* him to join), etc.
8. I am referring to languages like Japanese where aspects of a speaker's relationship to the addressee may be encoded through grammatical markers.
9. I won't offer a description of these here, but will offer the example of English sentences like "I believe that he has left," where *that* introduces a clause that is grammatically subordinate to the preceding one.
10. "Within a verb's processual profile, the most prominent element (in the sense of being the primary figure) is called the *trajector*. … A prominent element other than the trajector is referred to as a *landmark*. … [A] *primary landmark* is one that stands out as being especially salient (a secondary figure)" (Langacker 1991a: 355).
11. For one of the few extended discussions of the grammatical properties of metaphorical expressions, see Tirrell 1991.
12. I expect that further research would identify additional superschematic parameters, possibly including relative position on the thematic role hierarchy, for instance.

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