Elliptic Coordination*
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Abstract

Proposals are made to expand and refine previous analyses of coordination in Cognitive Grammar. The account presupposes a number of general notions established independently: (i) flexible symbolic assemblies (rather than constituency) as the basis for describing grammar; (ii) a dynamic view of structure (as patterns of activity occurring in windows of attention on different time scales); (iii) a metaphor involving access, activation, and conceptual overlap (to complement the standard compositional metaphor); and (iv) various kinds of abstraction (including schematicity, the type-instance distinction, and the invocation of virtual entities). Coordination is characterized as the mental juxtaposition of entities conceived as being analogous. These notions are first employed to describe the conjoining of constituents, including clauses. Non-constituent coordination is analyzed in the context of other sorts of clausal “reduction”, including the accentual reduction of unfocused elements in English as well as ellipsis, where overlapping content is left unexpressed. A pivotal descriptive notion is the differential, i.e. the content appearing in one clausal window that does not appear in the prior window. The anti-differential consists of any previously active content that the differential conflicts with and suppresses. Non-constituent coordination is a special case of ellipsis where the differential and anti-differential function as conjuncts.

Keywords: activation, composition, conceptual overlap, constituency, dynamicity, ellipsis, focus, type-instance, virtual entity, window of attention

1. Introduction

Coordination is a notoriously complex topic that poses serious descriptive and theoretical challenges (Gleitman 1965; Smith 1969; Hudson 1988, 1999). In particular, as noted by Goodall (1983) and Steedman (1985), it is inherently problematic for a view of grammar based on rigid, well-behaved constituency hierarchies. The apparent conjuncts in (1), for example, cannot be analyzed as constituents on independent grounds, nor are they precisely parallel (since only the first contains a verb).

(1) Ann came with, and Bob without, a date.

Though still complex and challenging, coordination is at least not inherently problematic from the standpoint of Cognitive Grammar (CG). On this view constituency of the classical sort is variable and non-fundamental (Langacker 1997, 2008). It emerges as a special case of symbolic assemblies, comprising semantic structures, phonological structures, and symbolic links.

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between the two. As a version of construction grammar, CG claims that lexicon and grammar form a continuum fully describable in these terms.

My objective here is to provide the basis for a CG description of coordination, including expressions like (1). While basically consistent with previous CG accounts (Langacker 1991: §11.2, 2009: ch. 12), the present effort refines and extends them considerably. It addresses a number of other, more general phenomena—themselves quite complex—which figure in the analysis of coordination. Of necessity, the treatment of coordination itself is selective and still preliminary, even for English. But despite being neither comprehensive nor definitive, it should afford some idea of how to approach other cases.

2. Preliminaries

To lay the groundwork for describing coordination, four broad topics will be considered: symbolic assemblies, dynamicity, the notion of access and activation, and various kinds and levels of abstraction.

2.1. Symbolic assemblies

From the earliest days of generative grammar, it was recognized that a single constituency hierarchy is not in general sufficient for an expression’s grammatical description. Suppose a phrase tree like Figure 1(a) is taken as adequately representing the syntactic structure of (2a). In terms of Chomsky’s classic analysis (1965: §2.2), *Joe* is identified as the sentential subject by virtue of its NP-node being the immediate daughter of S, and *salmon* as direct object by virtue of its NP-node being directly dominated by VP. The subject and object relations are represented configurationally, not by separate nodes, because they constitute grammatical functions rather than grammatical categories. But what about another grammatical function, namely that of (clause-internal) topic? Perhaps the topic role of *salmon* in (2b) could be characterized by its position as daughter to a higher-level S-node, given as S’ in Figure 1(b). Then, however, *salmon* is no longer identified as the sentential object. To show it as having both functions, one could posit a transformational rule deriving (2b) from (2a). But then the two functions are not represented in a single syntactic tree structure.¹

(2)  
   a. *Joe dislikes salmon.*  
   b. *Salmon Joe dislikes.*

¹ Even if it were claimed that the topic function is not a matter of grammar, a transformation would still be needed to reconcile the surface position of *salmon* in (2b) with its syntactic role as object.
So both functions are accommodated only at the theoretical cost of positing deep structures and derivations. Moreover, in line with the putative autonomy of syntax, notions like subject, topic, and object (not to mention NP, VP, etc.) are taken as purely formal entities—no characterization is given of their semantic or functional import. By contrast, CG eschews derivations from underlying structures and takes the conceptual characterization of such notions to be fundamental. Symbolic assemblies are sufficiently flexible for multiple dimensions of grammatical and functional organization to be represented simultaneously. There is no reason why the same symbolic elements cannot be grouped in cross-cutting fashion on the basis of different considerations. Constituency emerges when grouping occurs at successive levels of organization. However, hierarchical organization is only one form symbolic assemblies can assume, and a single hierarchy is seldom if ever exhaustive of an expression’s grammatical structure.

A minimal CG characterization of (2a) is at first blush not dissimilar to the phrase tree of Figure 1(a). As shown in Figure 2(a), it may well exhibit the same constituency: dislikes groups with salmon to produce the phrase dislikes salmon, which in turn combines with Joe to form a clause. But unlike 1(a), where nodes like NP, VP, etc. are purely syntactic, the structures in Figure 2 are all symbolic, each residing in the pairing of a semantic and a phonological structure.
The diagram illustrates some notations to be employed throughout. Heavy lines indicate a profile: the conceptual substructure an expression designates (refers to). An expression profiles either a thing (circle) or a relationship (arrow), a process in the case of a verb or clause. The trajector and landmark of a profiled relationship—its primary and secondary focal participants—are identified by their position at the origin and the point of the arrow, respectively. Dotted correspondence lines show how the structures are connected to form an assembly. Finally, circles and arrows bear mnemonic labels standing for the detailed conceptual content comprising the meanings of each element.

On the CG account, basic grammatical categories are defined in terms of meaning and semantic function. Very roughly, nouns and nominals (“noun phrases”) profile things, while verbs and clauses profile processes; since these are inherent aspects of their meaning, separate syntactic node labels would be superfluous. Also defined semantically are grammatical notions like subject and object. A subject is a nominal whose profile corresponds to the trajector of a profiled relationship, while an object’s profile corresponds to the landmark. Joe and salmon are thus identified as the subject and object of dislikes in Figure 2(a). Because these semantic characterizations make no reference to hierarchical arrangement, they apply equally well with the alternate constituency in Figure 2(b). Hence Joe is still the subject in (2b), and salmon the object.²

As it stands, nothing in Figure 2(b) shows the topic status of the object nominal. In CG such notions are regarded as aspects of linguistic meaning represented in symbolic assemblies. Meaning resides in conceptualization (in the broadest sense). Semantic structure resides in conceptualization that is adapted and exploited for linguistic purposes. It is multifaceted, encompassing not only the objective scene—the situation being described—but also the speaker-hearer interaction, relevant aspects of the context, and the ongoing discourse itself. Notions like topic and focus, often relegated to “pragmatics” or “information structure”, are therefore part of semantics in this umbrella sense. The basic motivation for the broad definition is that any particular line of demarcation would be arbitrary. This does not imply that everything is homogeneous or that distinctions cannot be made. We can certainly recognize information structure as a separate channel (Langacker 2001a) because it does not pertain to the objective scene per se, but rather to how the latter’s content is presented. Notions like topic are supervenient, in that their own conceptual content is maximally schematic—their import is primarily a matter of how the content supplied by other elements is accessed and apprehended. Topic constructions are nonetheless symbolic in nature, having both a semantic and a phonological characterization.

Topic relationships are a special case of reference point relations, involving sequence of mental access (Langacker 1993, 2001b). Posited for possessives and various other linguistic phenomena, a reference point relationship is shown abstractly in Figure 3(a). It is just a matter of a conceptualizer (C) invoking one conceived entity, the reference point (R), in order to establish “mental contact” with another, the target (T). A reference point’s dominion (D) is the set of entities closely associated with it, hence possible targets accessible through it. Dashed arrows represent paths of mental access.

² The grouping ((SV)O) represents a secondary but conventional pattern of English. In addition to topicalization, it occurs with relative clauses (the salmon [Joe dislikes]) as well as coordination involving “right node raising” (Alex hates and Joe dislikes the salmon).
The special case of a topic relationship is represented in Figure 3(b). The reference point is typically a nominal (NML), while the target is a clause in which the nominal referent has some role, be it central or peripheral. It is by virtue of this connection that the clausal occurrence is accessible via the nominal, so that the clause is interpreted as pertaining to it.

(a) Reference Point Relationship

(b) Topic Relationship

Figure 3

Languages incorporate particular topic constructions, which in CG take the form of symbolic assemblies. Figure 4(a) depicts English topic constructions in very general terms. Devoid of specific content, it is nonetheless an assembly of symbolic structures, each of which pairs a semantic and a phonological structure. Semantically, the two component structures have the schematic import of referring to a thing and to a process involving that thing in some fashion. X and Y are schematic representations of phonological structures serving to symbolize such notions. The composite symbolic structure specifies how these elements combine in topic-comment expressions. Semantically, the thing symbolized by X functions as reference point; it also has a role in the clausal process symbolized by Y. The latter functions as target—it is part of R’s dominion, being accessed through it and interpreted in relation to it. This conceptual integration is symbolized by the phonological integration of X and Y, whereby they are juxtaposed in the speech stream and occur in that sequence.

(a) X Y

(b) salmon Joe dislikes

Figure 4
This general pattern subsumes more specific patterns, one of which holds within a clause and identifies R with a participant in the clausal process. It is thus incorporated as part of a clause-internal topic construction, which inherits from it a non-standard word order implying a non-standard constituency. This construction is shown in Figure 4(b), for the particular example (2b). Observe that salmon is characterized as both the clausal object, by virtue of being the processual landmark, and also as clausal topic, by virtue of being the reference point through which the process is accessed. These simultaneous functions pertain to different dimensions, or channels, of semantic structure: the situation described (objective content), and information structure (access and presentation). They are nonetheless part of a single (albeit multifaceted) symbolic assembly.

2.2. Dynamicity

Despite the use of static diagrams (which can hardly be avoided), CG views language, in all its aspects, as inherently dynamic. This does not imply the absence of linguistic structure—quite the contrary (Langacker 2010). What it means instead is that all linguistic structures (elements, constructions, and expressions of any size, irrespective of their nature or degree of entrenchment and conventionalization) consist in patterns of processing activity. Language, in short, is something that happens.

Processing occurs through time. Linguistic structure thus has a time course, i.e. it unfolds through time in a certain manner. It cannot however be characterized in terms of a single “left-to-right” pass through an expression. Processing proceeds in parallel in different dimensions and at different levels of organization. It occurs on multiple time scales, ranging from the coordination of articulatory gestures, on the smallest scale, to the apprehension of extended discourse, on the largest. Recall, projection, and backtracking represent other departures from strict linearity.

On a given time scale, processing takes place in successive windows. A window provides the extensionality required for multiple entities to be represented and connected with one another. Canonically, the content subsumed in a window is thereby integrated to form a coherent structure organized around a single focus, or salient entity. Let us take a phonological example. On one time scale, windows align with syllables, rhythmic segmental groupings whose focused element is the syllabic nucleus. On a slightly larger time scale, windows align with words, clusters of syllables one of which is focused accentually. At higher levels, in windows of longer duration, word sequences give rise to phonological phrases of different sizes.

Illustration is given in Figure 5, starting at the word level. Windows are represented by boxes with rounded corners. The numbers indicate time scales, taking word-sized windows as a baseline, labeled 0. Phrases of different sizes appear in larger windows (+1, +2). At each level, heavy lines mark the element focused within its window. At the word level (0), the focused elements are syllables: football, equipment, repair, facilities. Words in turn are focused within each phrase at the +1 level: football equipment, repair facilities. And at the +2 level, the second phrase is focused: football equipment repair facilities.

3 By the same token, syllables appear in smaller windows, which would be labeled -1. In all cases the numbers used here are relative, not indicative of actual duration.
We are more attuned to windows on certain time scales than on others, e.g. we are more aware of words than of segments, syllables, or phonological phrases. A time scale with this property is thus a baseline, the level at which we tend to operate, at least from the standpoint of conscious awareness. So by default, the structures appearing in its windows have greater inherent salience than those at other levels. Naturally, different baselines can be recognized for different aspects of linguistic organization.

Especially important for grammatical and discourse purposes are the windows that Chafe calls “intonation units” (Chafe 1987, 1994; Langacker 2001a). Of the various factors he cites as the basis for their prosodic delimitation, I will rely on just a pause or break in timing (/ /). In English these windows “are fairly strongly constrained to a modal length of four words”, suggesting “a cognitive constraint on how much information can be fully active in the mind at one time” (1994: 69). Since they tend to coincide with clauses, as in (3a), I will refer to them as “clause-sized windows”. In view of their evident importance in spoken discourse, I will also describe them as 0-level windows, their time scale serving as a baseline for the purposes at hand.

(3)  
a. // Since Joe hates salmon // we’ll have to serve steak. //  
b. // Since Joe hates salmon // with such a passion // we’ll have to serve the steak //  
   we’ve been keeping in the freezer // for a special occasion. //  
c. // If he likes it // he’ll eat it. //

In line with Chafe’s reference to “information … fully active in the mind at one time”, I offer a conceptual characterization of intonation units as windows of attention for apprehending clausal content. The pairing of a phonological intonation unit with a conceptual window of attention constitutes a symbolic structure, for which I use the term attentional frame. Organization into attentional frames is one facet of information structure. Like topic-comment organization, attentional framing is supervenient on the content supplied by other elements. In and of itself, an attentional frame has little intrinsic content: phonologically, its characterization is limited to certain prosodic features; semantically, it is just a window of attention on a certain time scale. But the former does still symbolize the latter, just as word order symbolizes a topic-comment relation (Figure 4(a)).

Attentional framing represents the packaging of expressive and conceptual content into chunks of manageable size. Its canonical alignment with clauses reflects the importance of clauses as basic discourse units. I suggest, in fact, that the prototype for a finite clause specifies coincidence with an attentional frame as one dimension of its characterization. But as with most
prototypes, there are many departures from this canonical alignment. Clauses with too much content are spread out over multiple frames, as in (3b). Conversely, multiple clauses may sometimes be compressed into one frame, as in (3c). When they do coincide, however, the inherent salience of baseline windows reinforces the discourse salience of clauses.

Temporal windows are by nature sequential. How, then, does the seriality of sequential processing mesh with the predominantly hierarchical organization commonly imputed to linguistic structure? The relation between seriality and hierarchy is of course a classic problem (Lashley 1951). The tension between them is a major factor in language structure and language change. But they are not incompatible—indeed, they are both represented in phrase trees like Figure 1. They are likewise readily captured in symbolic assemblies, which are not constrained to any one mode of organization, and where the same elements can be organized simultaneously in different ways. For instance, the inherent seriality of speech does not preclude the hierarchical arrangement of syllables, words, and phrases observed in Figure 5.

As an aspect of processing activity, hierarchical organization is basically dynamic. The key factor is grouping, the ubiquitous process of elements at one level being co-activated and connected to form a structure which functions as a single element for higher-level purposes. In a linear sequence, hierarchy emerges as the content appearing in successive windows, on one time scale, forms a structure that appears in a single window on a larger time scale. In effect, then, the content accessed serially at one level (e.g. a sequence of syllables) is accessed as a simultaneously available whole (e.g. a word) at the higher level.

For the case of grammatical constituency, this is shown in Figure 6 by adding attentional frames to the symbolic assembly in Figure 2(a). It exhibits the canonical framing of a simple clause: it occupies a 0-level window, with the subject and predicate appearing in windows at level -1, the verb and its object at level -2. The arrow labeled T is speech time, one manifestation of processing time. The organization of content into windows along this axis stems from the status of words as non-overlapping phonological entities. It nonetheless has both conceptual and grammatical import. The phonological windows are also windows of attention for grouping the conceptual content that appears in them. Moreover, the sequence and grouping of words serves to symbolize the semantic integration thus effected.

![Figure 6](image-url)
To be clear, this neat co-alignment of intonation and grammar is not invariable, but only canonical and presumably optimal because it reinforces the groupings inherent in semantic and grammatical structure. If not symbolized intonationally, these functional groupings may still be indicated (more weakly) by temporal adjacency, and in some cases (still more weakly) by mere co-occurrence within a clause. If one posits a predicate (“verb phrase”) in a sentence like (2b), *Salmon Joe dislikes*, it is not linked symbolically to any phonological grouping. This is directly comparable to recognizing a complex lexical item, e.g. *take offense at*, even when its elements occur discontinuously, as in (4). Its conventional lexical meaning constitutes a conceptual grouping, but while its individual components are symbolized (thus allowing its recognition), the whole is not symbolized by any structure evident on purely phonological grounds.

(4) **Offense was taken at her remarks.**

The CG claim that constituency is variable and non-fundamental is therefore quite consistent with its emergence as an aspect of symbolic assemblies. At the same time, the flexibility of these assemblies accommodates the hierarchical organization of semantic functions even in cases where grammatical constituents of the classical sort fail to emerge. And to the extent that these groupings follow general patterns, captured in CG by *constructional schemas*, semantic and grammatical *compositionality* is both recognized and straightforwardly described. Rejected, however, is the orthodox view that grammatical constituency is fundamental, rigid, and autonomous, with semantic structure being strictly compositional.

### 2.3. Access and activation

The linguistic notion of composition is based on the metaphor of building something out of smaller pieces. While it is unavoidable, useful, and valid up to a point, the compositional metaphor has its limitations and is deleterious if pushed too far. I will thus employ an alternative metaphor based on notions of *access* and *activation*. The two metaphors are complementary—each has its place in an overall account of linguistic structure. And while neither tells the whole story, both reflect aspects of symbolic assemblies and their role in language use.

In this alternative metaphorical model, a *moving window* of attention provides serial access to a complex conception. Portions of this *target* conception appear in the window at each processing stage until it is deemed to have been *covered* sufficiently for communicative purposes. With respect to Figure 6, for example, the target conception is that of Joe disliking salmon. If we view it at the -1 time scale, Joe appears (and is focused) in the moving window at the initial processing stage, and the process of disliking salmon in the second. But since processing runs concurrently on multiple time scales, we can also view it at the baseline (0) level, where the window of attention subsumes all this content at a single moment. This may, of course, represent just one moment in a discourse sequence, in which the content accessed at successive moments corresponds to clauses.

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4 If added to Figure 2(b), it would be equivalent to the predicate in diagram (a), but without its phonological manifestation.
The baseline level has greater inherent salience: other things being equal, we attend more to whole events than their component elements. So for many discourse purposes we can regard the content of the moving window as being updated on a clause-by-clause basis. As with time scale (or level), there is also an inherent difference in salience (in this case more evident) along the temporal axis. We are naturally more acutely aware of content appearing in the current window of attention—i.e. the window at the current processing moment—than content presented either previously (accessible via memory) or subsequently (accessible through anticipation). This is shown abstractly in Figure 7, depicting a number of successive window stages. The current window is labeled 0, indicating its baseline status. The number at the top of each retrospective and prospective window indicates degree of departure from this baseline, which naturally correlates with diminishing salience of content.\(^5\)

![Figure 7](image-url)

Spoken discourse is an intersubjective activity through which the interlocutors achieve some alignment in their scope of awareness and locus of attention within it. In successive windows, on different time scales, linguistic symbolization serves the purpose of evoking conceptual content and directing attention to the profiled entity. This does not occur in isolation. The conceptions entertained presuppose an elaborate conceptual substrate (Langacker 2008) from which they cannot be dissociated. This substrate includes the speaker-hearer interaction, the context, and a vast array of background knowledge, as well as the ongoing discourse itself. Hence the content in the current window is apprehended in relation to both previous and subsequent frames (not to mention windows at other levels). In particular, the structure in each window emerges organically from its predecessor, as indicated by the wedges (> in Figures 6 and 7. The content active at each processing stage functions as point of departure for the next.

By viewing linguistic elements as discrete, self-contained building blocks, with linguistic structures obtained just by stacking them together, the compositional metaphor has no intrinsic means of accommodating either the continuity of discourse or the dependence of linguistic meaning on a conceptual substrate. It thus gives rise to spurious conceptual problems, e.g. the source of non-compositional aspects of meaning, or how semantic structure connects with discourse structure. These issues do not arise in the access and activation model. With this alternative metaphor, the emphasis is not on building conceptual structures out of smaller pieces,

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\(^5\) Observe that numbers at the top of a window pertain to distance and temporal sequence, whereas those at the bottom pertain to time scale.
implying that they did not exist previously, but rather on invoking and attending selectively to structures that, for the most part at least, are already in place.

With certain qualifications, I take it as already being in place for both the speaker and the hearer. It is important not to embrace the simplistic notion that the speaker merely encodes, going from meaning to sounds, while the hearer merely decodes, going from sounds to meaning. The CG position is rather that both interlocutors engage in coding, the process by which a set of linguistic units are activated as the conventional basis for apprehending (or participating in) a usage event, comprising an expression’s full contextual understanding paired with its fine-grained phonetic manifestation. The activated units constitute the expression’s linguistic structure. In the ideal case—at best only approximated in actual practice—the interlocutors wind up activating the same symbolic units, agreeing on both the expression used and how it relates to the target conception. When they use an expression successfully, their scope of awareness and focus of attention with respect to the target are momentarily aligned.

Viewed in global terms, the interlocutors proceed in tandem through the target, each expression serving to access, and if need be to augment or modify, certain portions of it. The ease and success of this intersubjective journey depend on how extensively their conceptual substrates overlap to begin with. And since the substrate includes the ongoing discourse and its current state, the overlap is generally quite substantial even in regard to the target. It is not a matter of the speaker starting with a full target conception and the listener with none at all: at a given point in the discourse both interlocutors know what has been said and have some idea of what is likely to come. The speaker, at least, must entertain some version of the target before expressing it. How far in advance the projection is made is highly variable, and it is subject to modification as the discourse proceeds. In any case, the hearer also makes this projection and can often anticipate much if not all of what is coming. The content conveyed is commonly already known to both interlocutors. Typically they alternate in the speaker and hearer roles. Moreover, each simulates the other’s role, the hearer imagining what the speaker might say, and the speaker estimating how the hearer will apprehend it. So whoever takes the initiative at a given moment, discourse is an intersubjective process of co-construction.

Linguistic expression is thus a means of evoking conceptual content, as opposed to constructing it, and often explicit mention merely prompts a complex conception rather than describing it exhaustively. As exemplified in Figure 6, symbolic assemblies represent particular ways of accessing target conceptions and directing attention therein. Attention correlates with level of activation and thus with acuity and cognitive salience. Activation being a limited resource, the lion’s share tends to be conferred on just one element in a window, which thereby stands out as focus. Moreover, activation tends to decay: if not reinforced by further input, content focused or active in one window tends to be less so in the next. But since it does not return immediately to the resting level, the activation levels in each window constitute a baseline exerting a strong influence on those of its successor. Due to this priming effect, the content accessed in successive windows generally overlaps. In diagrams like Figure 6, this overlap is shown by correspondence lines.

The moving window metaphor suggests the alternate notation in Figure 8. Instead of showing each window separately, even when content overlaps, it shows the target conception just once with windows superimposed. Each window shown is of course the current window at a

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6 For example, spontaneous conversation and the reading of a formal lecture are radically different in this respect.
certain moment. Sequence of access is indicated by variable labels like i and i+1, for the windows at moments $T_i$ and $T_{i+1}$ of processing time.

(a) Coincident   (b) Overlapping   (c) Disjoint

![Diagram of windows i and i+1 for coincident, overlapping, and disjoint access]

Figure 8

The target conception can be “covered” with more or less efficiency. It is least efficient in cases of full repetition, which nevertheless has its purposes. Exemplified by the middle two clauses in (5a), repetition is a matter of the moving window not doing so—in moving through the target conception, the speaker gets stuck in one place. Hence the content in windows i and i+1 is coincident. It can also be disjoint, as in the last two clauses of (5a). In a way this is maximally efficient, but it does incur the cost of having to make a connecting inference (since he won’t eat salmon, there’s no need for you to go the store and buy it, so you can stay home), and fails to exploit the residual activation of elements mentioned in the previous window. The usual situation of overlapping content, as in the first two clauses of (5a), represents a happy medium: it builds on what has gone before but also goes beyond it.

(5)  a. Joe dislikes salmon, so he won’t eat it. He won’t eat it. Just stay home.
    b. Joe loves fish, but he dislikes salmon.
    c. Joe loves fish but dislikes salmon.

Influenced by the compositional metaphor, I have previously spoken of “building” a conceptual structure through discourse, entailing the need to “consolidate” the semantic structures provided by each successive clause (Langacker 2001a). As shown in Figure 9 for the simple example (5b), the semantic and discourse structures were represented separately. Comprising the lower tier are the composite semantic structures of the clauses. The upper level represents the evolving discourse structure, updated by each clause through the incorporation of its content. After the second clause, consolidation is required because Joe and he, mentioned individually in separate clauses, are interpreted in the discourse as being the same person.

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7 The label ‘m’, for ‘male’, stands for the import of he.
The implied distinctness of semantic and discourse structures was more a matter of representational convenience than a claim about the actual nature of things. It does however illustrate the potential to be led astray by metaphor. In this case the discreteness of the compositional (building-block) metaphor engenders two issues which turn out to be non-issues from the standpoint of the alternative access and activation metaphor. There is first the question of how, if they are separate, the connection between semantic and discourse structures is established. There is also the issue of consolidation (e.g. its temporal relation to updating).

These issues disappear when we shift to representations like Figure 8, where a moving window affords serial access to a target conception already in place. Figure 9 can thus be reformulated as Figure 10(a). There is no mapping between semantic and discourse structures, for they are really not distinct. Nor is either one distinct from the target conception or the broader conceptual substrate from which it emerges through selection and augmentation. Instead, semantic structures consist in particular ways of evoking and construing certain portions of the target conception and its substrate, as prompted by linguistic symbolization. The structure “built” through discourse is just the totality of the content evoked in this fashion. Likewise, there is no need to consolidate separate semantic structures into a single conceptual structure, for the latter already exists: semantic structures consist in overlapping portions of the target conception.
Although meaning resides in conceptualization, semantic structure is not just conceptual structure. Rather, it consists in the selection, adaptation, and presentation of conceptual content for linguistic purposes. It is thus quite possible for expressions with essentially the same conceptual content to be semantically distinct just by virtue of expressing it differently—indeed, they are necessarily distinct granted the CG claim that every lexical and grammatical element imposes its own construal on the content invoked. I would claim, then, that (5b) and (5c) have subtly different meanings by virtue of the constructions employed, despite describing the same conceived situation using the same lexical items. As shown in Figure 10, the former presents this content in two clausal windows, the latter in a single window. So even though both expressions profile the same two relationships, the former does so successively, the latter simultaneously (as a dual clausal profile). The semantic import of factors like sequence of access, focusing, and the packaging of content is fundamental to the CG view of linguistic meaning. Conceptualization is dynamic, and its time course—how it unfolds along the temporal axis—is one dimension of semantic structure (Langacker 2001c).

2.4. Abstraction

A final preliminary matter is the need to distinguish various kinds of abstraction that all have essential roles in language. I will not be particularly concerned with our capacity to apprehend both concrete and abstract phenomena, as we use analogous expressions for describing situations in the physical, mental, and social realms. Other dimensions of abstraction pertain more directly to grammatical analysis.

Along one axis, conceptions vary in their degree of specificity (or conversely, schematicity), also known as “resolution” or “granularity”. Lexical items range widely along this axis, e.g. salmon, fish, and food (all viewed as substances) are progressively more schematic. A basic notion of CG is that lexicon and grammar form a gradation with any particular line of demarcation being arbitrary. By and large, though, the structures regarded as “grammatical” are highly schematic, while “lexical” structures gravitate toward the opposite pole.

A schema is immanent in (lies within) the more specific structures that instantiate it. For present purposes, it is useful (albeit awkward) to have a notation which reflects this directly. I will thus use representations like those in Figure 11, where immanence is shown by nested circles (or ellipses) and boxes: ((X)Y) indicates that the conceptual content (or cognitive processing) constitutive of X is inherent in the more elaborate content (or processing) constitutive of Y. In diagram (b), for instance, the conception of a thing—schematic for the class of nouns—is elaborated by the semantic specifications responsible for the notion ‘female’ (f), which in turn is elaborated by those giving rise to ‘girl’ (g). Likewise, the conception of a process—schematic for the class of verbs—is successively elaborated by the content constitutive of the notions ‘ingest’, ‘eat’, and ‘devour’.

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8 Levinson 1997 egregiously misrepresents CG in this respect.
9 These are crude representations adopted for convenience. The number of layers shown and the properties indicated depend on the problem being addressed. In particular, the labels m, f, and n—for ‘male’, ‘female’, and ‘neuter’—may be omitted.
Lexemes like these involve abstraction of a different sort, in that they specify *types* (schematic or specific) as opposed to designating *instances* of those types. In the CG account (Langacker 1991, 2008), a lexical noun or verb specifies a type of thing or process, whereas a nominal or a finite clause profiles a thing or process instance. This instance, moreover, is *grounded*: some indication is given of how its relates to the *ground*—the speech event and the interlocutors—with respect to fundamental epistemic factors, notably identification (for nominals) and status vis-à-vis reality (for clauses). In English, nominal grounding elements include determiners and grammaticized quantifiers, whereas clausal grounding is effected by tense and the modals.

With some nouns, notably proper names, there is no distinction between type and instance. Being conceived as a unique identifying label, itself sufficient to single out the intended referent, a proper name qualifies as both a noun and a nominal. In the case of types with multiple instances, lexicalization pertains to the type level: *dog* describes a type of creature without singling out any particular instantiation. But since a type is immanent in its instantiations, the label can also be applied to any of those.

What, then, differentiates a type conception from an instance conception? The CG proposal is that, in contrast to a type, an instance is specifically conceived as occupying a *distinguishing location* in a certain domain, the *domain of instantiation*. For processes, this domain is always time. It varies in the case of things, but for physical entities (to which we can limit our attention) it is usually space. A distinguishing location is not necessarily one that we can actually identify. The point is rather that an instance, by nature, is thought of as being distinct from other instances, and since they all represent the same type, what distinguishes them from other instances is their position in space and/or time. This distinguishing location will be indicated diagrammatically by means of a dot. We thus have representations like those in Figure 12, for nominals and grounded verbs, which profile instances of their types.
Another sort of abstraction concerns the distinction between actual and virtual (or fictive) entities (Langacker 1999, 2005). The distinction is a relative matter. Abstracted types, for example, are virtual relative to their instances. But instances can themselves be virtual in nature. On the non-specific interpretation, the puppy referred to in (6a) is merely a figment of the subject’s desire, existing only in this special mental space (Fauconnier 1985). A virtual instance is simply imagined for some local purpose, having no status or existence outside that context. Where the distinction is relevant, I will indicate virtual instances with an empty dot rather than a filled dot. The specific and non-specific interpretations of (6a) are thus represented as shown in Figure 13.

(6)  
   a. *She wants a puppy.*  
   b. *A porcupine is a rodent.*

Surprisingly much of what we describe linguistically is virtual, even when it serves to characterize actual circumstances. Virtual entities are commonly invoked in making generalizations. A case in point is (6b), which describes a real situation without referring to any actual porcupine or any actual rodent. The porcupine and rodent are representative instances of their types, conjured up just in order to make a generally valid statement. And it is valid: since porcupine is a subtype of rodent, any porcupine one examines will also be a rodent. The overall conception is thus as shown in Figure 14. What is coded linguistically is the identity of two virtual referents, each representative of a set of actual ones. And if they are virtual entities, so must be their identity. But everything shown contributes to the expression’s linguistic meaning. How the profiled relationship projects to actual circumstances is crucially invoked as part of the supporting conceptual substrate.
3. Constituent coordination

We are now equipped to deal with simple cases of coordination. Of course, it is never really simple. One dimension of complexity that I will largely ignore is semantic variation among conjunctions and even for a single conjunction. For the most part I will only be considering the basic sense of *and*, excluding both other conjunctions (*or*, *but*, *both … and*, *and then*, *or else*, etc.) and extended meanings of *and* itself (involving causation or temporal sequence). Although much will carry over to other cases, adjustments will certainly be necessary.

The essential import of *and*, I suggest, consists in the mental juxtaposition of multiple entities conceived as being analogous. These entities can be of any sort (things, processes, non-processual relationships). While multiplicity encompasses any integral value greater than one, to keep things simple I will mostly confine examples to the baseline value of two. In what respect are the coordinated elements analogous? I am not prepared to deal with this complex issue in any depth. It can however be observed that their parallelism has both intrinsic and extrinsic aspects. Their intrinsic parallelism involves some perceived commonality, hence the potential for schematic characterization, so that canonically (but not always) they represent the same grammatical category. Their extrinsic parallelism consists in analogous connections with external elements, e.g. the same grammatical role in a clause. A further aspect of their parallelism, concomitant with mental juxtaposition, is the default expectation of their being equal in status and prominence.

Although structures of any size can be coordinated, conjuncts larger than clauses will not be considered. Conjoined clauses exhibit intrinsic parallelism just by virtue of being clauses. It might be expected that having analogous grammatical structure would contribute to their optimality. If so, however, the effect is minimal; there is no appreciable difference between (7a) and (7b) in this respect. More important at the clause level is the extrinsic factor of pertaining to the same topic and forming a coherent discourse. In (7a-b), the events described are interpreted as facets of a single episode of meal preparation. In (7c) the events are quite disjoint but can easily be related, e.g. as parts of the life history of a married couple. When it is hard to make a connection, as in (7d), clausal coordination may be infelicitous. But even that example is appropriate in the proper context (e.g. in response to an exhortation to name two unrelated facts).
a. Ann cooked the salmon, and Bob prepared the vegetables.

b. Ann cooked the salmon, and Bob just rested.

c. Ann was born in Milwaukee, and Bob went to school in Minnesota.

d. Ann is tired, and treaties have to be approved by a two-thirds vote of the Senate.

In CG terms, the mental juxtaposition of entities with equal salience translates into their co-occurrence as focused elements in some window of attention. The clausal coordination effected by and in (8a) is thus as shown in Figure 15(a). There are two profiled events. They would normally be rendered in successive windows of attention at the baseline (0) level, so their juxtaposition is sequential on this time scale. They do however appear in the same window on a larger (+1) time scale, making them effectively simultaneous at this level. Either way, they co-occur as equally focused elements. Both are portrayed as actual events.

b. Ann inherited a fortune, or Bob won the lottery.

If mental juxtaposition captures the essence of and (as well as coordination in general), the conjunction or might seem to pose a problem. On the one hand, it functions grammatically in much the same way as and, as seen in (8b). But on the other hand, its basic meaning—as presenting mutually exclusive options—is seemingly incommensurate with juxtaposition. The two notions are however compatible, as shown in Figure 15(b). The key observation is that or is semantically more complex than and, as well as being more abstract owing to virtuality. The juxtaposed structures are not conceived as actual, but rather as alternate candidates to instantiate

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10 I emphasize, though, that the actual/virtual distinction is only relative. In a larger context, they might both be revealed as virtual (e.g. If Ann inherited a fortune and Bob won the lottery, they would be rich).

11 Inclusive or, as well as another sense quite comparable to and, are analyzed in Langacker 2009: ch. 12.
a schematic event that is. They are mutually exclusive only in regard to their status as the actual occurrence. Yet they are mentally juxtaposed in the same way as in the case of and.

In Figure 16 I sketch the conjoining of clauses to form (8a). At the lower level of composition, and combines with the clause that will be the second conjunct.\textsuperscript{12} And profiles two schematic entities; the box above them represents their presumed parallelism (intrinsic and extrinsic). At the lower level, one of the profiled entities is identified with the clausal structure \textit{Bob won the lottery}. The choice of a clause for the second conjunct implies that the first conjunct will also be a clause (intrinsic parallelism), and that the clauses will pertain to a common topic, represented by a dashed-line box at the composite structure level. At the upper level of composition, the second profiled entity is specified by the clause \textit{Ann inherited a fortune} to yield the coordinate structure.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure16.png}
\caption{Ann inherited a fortune and Bob won the lottery.}
\end{figure}

Constituents of any size can be conjoined, and often the same target conception lends itself to multiple options in this regard. To describe the occurrences in Figure 17(a), for instance, we have the options in (9), with coordinate clauses, predicates, or verbs. Since the latter two expressions are comparable semantically to the first, in the early generative era they were analyzed as deriving from the first by a rule of “conjunction reduction”. This is not permitted in CG. What we have instead, in terms of the access and activation model, are alternate ways of

\textsuperscript{12} Semantically and indicates parallelism and co-equality, but phonologically it combines with the final conjunct. While only two conjuncts are shown, in a fuller account its representation would have to be generalized to allow any number.
covering the same target conception. The differences are a matter of how extensively the conjuncts conceptually overlap.

(9)  
   a. Bob peeled an apple, and he ate it.  
   b. Bob peeled an apple and ate it.  
   c. Bob peeled and ate an apple.

Given the target situation, the conjoining of verbs is the most efficient. The double-headed arrow in Figure 17(b) indicates the locus of difference: while they have the same participants, there are two distinct events representing different types. And since the verbs do not themselves express participants, the conjuncts (enclosed in boxes) have minimal overlap. Now if the verbs are distinct in type and reference, so are two predicates formed on them, even if the object nominals are co-referential. This is shown in diagram (c), where the double-headed arrow marks the predicates as distinct despite the referential identity of their objects. The dotted correspondence line represents this conceptual overlap: the two conjuncts incorporate object nominals which in fact refer to the same entity in the target conception. Opting for clausal coordination takes this one step further, as shown in diagram (d). The clausal conceptions are indeed distinct because they profile distinct events. But since these have the same participants, the conjuncts overlap in regard to their subjects as well as their objects.

The case of verb coordination is detailed in Figure 18. The formation of the compound verb *peeled and ate* is directly analogous to the clausal coordination in Figure 16, except that here the extrinsic parallelism pertains to combination with the subject and object nominals. At the first level shown, the verbal conjuncts combine with their object, which qualifies as such because its profile—simultaneously and in parallel—corresponds to the landmark of each. The resulting composite expression, *peeled and ate an apple*, has a dual processual profile with one shared participant. At the second level, once more in parallel, Bob specifies the schematic trajectors of the verbal processes, making it the subject of each. The result is a single clause that profiles a complex occurrence.
The coordination of other constituents works more or less analogously. It is hardly surprising, though, that complications soon arise. The one that concerns us arises in simple cases of nominal coordination, e.g. (10a). On the default interpretation that the people mentioned complained individually, there were three distinct instances of complaining, as shown in Figure 19(a). And because the events are disjoint, it cannot just be assumed that describing one serves to “cover” the other. Yet in English the same verb, with no indication of plurality, describes them all. How does this happen? What does the sentence profile?

(10) a. Al, Bill, and Joe complained.
    b. Al complained—not just once, but several times.
    c. Each boy complained.

The issue is not specific to coordination. The failure of the verb itself to indicate multiple occurrences is also observed in cases of repetition, like (10b), and with generalizations via representative instances, as in (10c). Despite the multiplicity of the target event, shown in diagrams (b) and (c), the verb has the same form as it does in describing a single instance. It is thus a general fact of English that verbs do not distinguish morphologically between one instance of their type and more than one instance. Unlike nouns, where the singular indicates just one

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13 A single clause may have multiple instances of constituent coordination, e.g. Ann and Bob prepared the salmon and the vegetables. The special case coded by respectively is analyzed in Langacker 2011.

14 Plural verb inflection (e.g. Al, Bill, and Joe are complaining) does not specifically indicate plurality of the event, but only of the trajector. Note, for example, that we say The boxes are
(owing to a privative opposition with the plural), verbs effectively neutralize the singular/plural contrast. It is not that they are truly schematic in regard to number—certainly the default (or baseline) conception involves just one occurrence. But the absence of finer lexical or morphological differentiation allows the same verb stem to apply irrespective of number. We tolerate a systematic vagueness in linguistic coding, such that a verb is used for any situation where its process type is instantiated. Provided that its lexical specifications are satisfied, it does not matter whether the situation is characterized exhaustively.

![Figure 19](image)

The expressions in (10) all make a generalization over several instances of complaining. In each case, the instance profiled by the grounded verb stands for the actual instances comprising the target conception but cannot be equated with any one of them in particular. It can thus be thought of as a virtual instance that represents the actual ones, as shown by the dotted correspondence lines in Figure 20. The expressions differ as to the nature and referent of the subject nominal. In (10a), the coordinate subject profiles three individuals who all instantiate the trajector of the virtual event. In (10b), the same individual participates in all the actual events and therefore has the same function in the abstracted generalization. And in (10c), the subject also has a virtual referent: an instance of boy conceived as being representative of several actual ones.

![Figure 20](image)

*heavy* even if there is only one instance of heaviness (i.e. their collective weight is at issue). In any case it is not inherent in lexical verbs, but a matter of clausal grounding.
It might be objected that these expressions profile the actual instances of complaining, not an imaginary virtual instance. That, however, rests on certain misconceptions about the nature of profiling and linguistic reference more generally. It is true that in using such expressions we are primarily concerned with the actual occurrences involved. But profiling is not a matter of either importance or real-world reference. It is rather a matter of prominence, consisting in the focusing of attention effected by linguistic symbolization on the conceptual content invoked. The profiled entity is the referent within this conception, irrespective of how it relates to actual or real-world situations. Obviously, the situations we talk about—the objective scene—are not limited to those which are physical, real, or actual. And when we are concerned with actual circumstances, we often apprehend them via levels of mental construction (Fauconnier 1985, 1997; Fauconnier & Turner 2002), with the consequence that the entities described linguistically are virtual in nature. The referent of each, for example, is necessarily virtual: each boy cannot be any one actual boy, even though it figures in a generalization pertaining to actual boys.

It is also not quite accurate to say that the actual instances of complaining are unprofiled in (10) and Figure 20. Rather than being distinct from the actual events, the profiled virtual instance is abstracted from them, hence immanent in their conception. Their separate diagrammatic depiction is misleading in this respect. So at least to some degree, the prominence of the conceived occurrence profiled by the grounded verb carries over to the actual instances it represents. In any case they are covered by the verb in the coding of the target conception.

The extent of the carry-over depends in part on the subject nominal: the greater the prominence conferred on the individual actors, the greater the prominence of the event instances in which they participate. Other things being equal, they are most prominent with a coordinate subject, as in (11a), for then each participant is profiled individually. They are less so with a plural subject, as in (11b), since it does not profile the individual boys, but rather the replicate mass they constitute. Still, because a plural derives morphologically from a non-plural stem, the individual members do retain a measure of salience. This largely disappears with a collective noun like choir, in (11c), where the initial lexicalization occurs at the level of the mass.

(11) a. *Al, Bill, and Joe sang very well.*
    b. *The boys sang very well.*
    c. *The choir sang very well.*

An attempt is made in Figure 21 to represent these degrees of prominence, as well as the differences they engender in the salience of actual event instances. And it no doubt is a matter of degree. Since the very fact of coordination effects the grouping of nominal referents, as indicated by the box in diagram (a), the nominal profile is easily shifted to the group as a whole, as in (b). Various factors encourage this metonymic shift, e.g. adverbs like together that specify joint activity. With a collective noun like choir, which focuses quite strongly on the whole, another phenomenon comes into play: the emphasis shifts from multiple instances of an individual activity to those respects in which it constitutes a collective activity.\(^\text{15}\) Singing is something that either an individual can do, with certain characteristic properties, or a group can do, with other

\(^{15}\) Being a matter of construal and relative prominence, this is not precluded with a coordinate or plural noun.
characteristic properties. Diagram (c) shows the latter construal, in which case the profiled occurrence is actual rather than virtual: group singing is done by the group as a whole, even though it consists of individual activities. Some verbs, such as harmonize, profile the collective aspects of an overall event as their primary value.

Figure 21

4. Focus and ellipsis

On the face of it, constituent coordination is constituent coordination. I have sketched its description in CG, showing that the rough semantic equivalence of constituent and clausal coordination does not require an operation of “conjunction reduction” deriving the former from the latter. However, reduction from clauses would seem to be necessary in cases like (1) [Ann came with, and Bob without, a date], where the conjuncts cannot be analyzed as constituents. We can best approach such cases by first considering other kinds of clausal reduction.\(^1\)

One such phenomenon is the accentual reduction of non-focused elements in English. The focusing involved pertains to information structure: full accent is generally reserved for elements with substantial lexical content not already expressed. Because they retain full stress, these elements—the informational focus—are also focused prosodically, having greater accentual prominence than those surrounding them. Using small caps to mark this prosodic focusing, regular type will indicate accentual reduction. Examples are given in (12). Only greedily is focused in the second clause of (a), since ate and it amount to repetitions of devoured and the cake. On the other hand, devoured is focused in the second clause of (b) because it substantially elaborates the content of ate.\(^2\)

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\(^1\) The term “reduction” is used for convenience. In CG it is just a matter of partial expression, not of starting with a full clause and reducing it.

\(^2\) Focus accent, which is simply accentual non-reduction, has to be distinguished from the accentual augmentation of contrastive stress. For instance, (12b) might be continued as follows: She ABSOLUTELY DEVoured it. The three levels of stress are clearly iconic for the degree of conceptual prominence conferred on the symbolized elements.
This phenomenon is readily described from the standpoint of access and activation. Roughly speaking, reduced stress registers conceptual overlap, leaving full stress to signal informational focusing. Like topic-comment organization and attentional framing, informational focusing is supervenient on the content supplied by other elements. It is nonetheless symbolic, the accentual prominence serving to symbolize the informational prominence. At both poles, identification of the focused elements hinges on the departure from a baseline. Phonologically, they stand out from their surroundings by virtue of being fully accented. The semantic elements highlighted in this manner are those which do not appear in the previous attentional frame—they stand out as noteworthy by virtue of not overlapping with the content of the previous clausal window. I will refer to this non-overlapping content as the differential (Δ). With respect to successive clausal windows, the differential is the content in window i+1 that does not appear in window i.

This is shown for (12) in Figure 22, using one variant of the notations introduced previously. Also, the box labeled ‘g’ ascribes the manner property greedily to the eating. In diagram (a), representing (12a), this property constitutes the differential, and is thus the informational focus. The diagram shows directly that this is the only conceptual element in window i+1 that is not subsumed in window i. It is only in this respect that the second clause departs from the content already covered by the first—the baseline for purposes of information structure. As is usually the case, overlapping elements need not be described as fully in the second clause as in the first. Thus only window i expresses the content (d) distinguishing devour from the more schematic notion eat, as well as the content (c) distinguishing cake from the neuter pronoun it. But since it belongs to window i (not i+1), this is not the differential as defined. Rather, it is baseline content, part of the substrate for the second clause.

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18 These are complex matters involving many interacting factors (Calhoun 2010). I would only claim that the factor cited is a central one.
In (12b), represented in diagram (b), the same target conception is accessed in a different sequence. The adverbial property greedily is covered by the first clause (window i), where the verb is simply eat. The event’s more elaborate description as devour in the second clause (window i+1) introduces further content (d), which constitutes the differential. And because it expresses the differential, devoured is fully accented.

A window on this time scale subsumes the “information … fully active in the mind at one time” (Chafe 1994: 69). Since activation is transient and soon diminishes, the basic tendency is for the content fully active in one window to have only residual activation in the next. Overlapping windows represent a countervailing tendency of keeping elements active as a foundation for the next conception. It is efficient in that less processing effort is required to maintain an element’s activation than to access one that is previously inactive. This lesser effort translates into lesser prominence of the symbolizing phonological structures that serve to evoke them.

The conceptual overlap that triggers this accentual reduction does not require coreference, strict conceptual identity, the same form, or grammatical parallelism. These points are all exemplified in (13a). The two occurrences of dog are non-coreferential, but the second is nonetheless destressed. So is making a lot of noise, which is not semantically equivalent to barking, the same in form, or parallel grammatically. The well-known contrast in (13b-c) shows that the requisite overlap can even reside in non-explicit factors, in this case whether the speaker presupposes that calling someone a Republican constitutes an insult (Lakoff 1971).

(13) a. **ONE DOG is BARKING. The OTHER dog is ALSO making a lot of noise.**
    b. **ANN CALLED BOB a REPUBLICAN. THEN she INSULTED him.**
    c. **ANN CALLED BOB a REPUBLICAN. THEN she insulted him AGAIN.**

Exemplified in (14), the difference between coreference and overlapping content is represented in Figure 23. In (a), coreference of the object nominals is part of the overlap between windows i and i+1. There is only one instance of letter, hence only one distinguishing location (shown as a dot), which appears in both frames. Coreference allows the second instance to be coded by the pronoun it, so its characterization as a letter (l) is limited to the initial clause. Bob and read provide the new content in the second window, so together they constitute the differential (informational focus) with unreduced stress. Sentence (b) is comparable except that different letters are involved. Thus, while the two windows share the conceptual content of letter (l), they host different instances of this type with different distinguishing locations. The second occurrence of letter is nonetheless unstressed because coreference is not required for accentual reduction.

(14) a. **ANN WROTE a LETTER, then BOB read it.**
    b. **While ANN WROTE a LETTER, BOB read a letter.**
In (14) the differential is arguably not a grammatical constituent. Be that as it may, it is well known that the informational focus is not invariably a constituent, nor even phonologically continuous. It does however represent a conceptual grouping, effected by the very fact of departing from the baseline of the previous clause, as well as a phonological grouping, standing out by virtue of being unreduced in stress. With the symbolic assemblies of CG it is entirely anticipated that groupings effected on different grounds will sometimes cross-cut one another.

A discontinuous focus is exemplified in (15) and diagrammed in Figure 24. Since it is based on conceptual non-overlap, there is no reason to expect the differential to coincide with narrowly grammatical organization. Here the overlapping content is limited to the process type coded by *wash*; the clauses refer to different instances of this type, so each window contains a dot representing a distinguishing location. The differential comprises the conceptual content distinguishing Bob from Ann (B), and dog from cat (d).

(15)  *ANN WASHED a CAT, then BOB washed a DOG.*

Turning now to ellipsis, I must once more emphasize that this is a vast topic little explored in CG. There are many patterns of ellipsis, each with its own restrictions and peculiarities. Here I can only sketch a general way of approaching it.

We can reasonably speak of ellipsis in cases where an expression that is not itself a clause nonetheless receives a clause-like interpretation by analogy to one that is. An example is (16b), in which *a poodle* is understood in the same manner as the second clause in (16a). In both expressions, content that overlaps with the prior clause is less than fully manifested phonologically. The difference is one of degree: accentual reduction in (a), complete omission in (b). This correlates with another difference pertaining to the nature of the requisite overlap. We
saw that the accentual reduction of non-focused elements is largely insensitive to factors like coreference, identity of form, and grammatical parallelism. By contrast, ellipsis is sensitive to all of them. In (16b), the poodle is none other than the dog just referred to, and the phrase is interpreted as an elliptic version of the specific expression *Ann bought a poodle* (not *Ann purchased a poodle, Sam wants a poodle, or What Ann bought was a poodle*).

(16)

a. *ANN BOUGHT a DOG. She bought a POODLE.*
b. *ANN BOUGHT a DOG. A POODLE.*

With ellipsis, then, we are not just dealing with overlapping conceptual content but with overlapping expressions as semantic, phonological, and symbolic entities. Though largely unexpressed, the structure accessed in the first window retains its activation in the second, where it provides the framework for interpreting its overt elements. These are mostly limited to the differential. Interpretation is then a matter of reaccessing the prior structure, keeping as much intact as possible. The structures in windows i and i+1 are thus analogous, with adjustments made as needed to accommodate the differential.

The ellipsis in (16b) is represented in Figure 25. In this case all the content of window i remains active in i+1, which does nothing more than expand the characterization of the purchased canine. The conceptual content of the prior clause is kept intact, and the focused nominal has the same role in the reconstructed expression as the nominal it elaborates. It is as if one were saying [*Ann bought*] a poodle without however allowing the bracketed material to actually be realized phonologically.\(^{19}\)

\[\text{Figure 25}\]

An elliptic expression’s interpretation retains the structure of the prior expression insofar as possible. Figure 25 represents the special case of full retention: the structure in window i remains intact in window i+1, which merely augments it with further specifications. But often the differential contrasts in some respect with the previous expression. An example is (17), where *dog* contrasts with *cat*. Interpreting the elliptic phrase is therefore not just a matter of reactivating the prior structure. One facet of that structure, the object’s characterization as a *cat*, must be suppressed and replaced by its characterization as a *dog*. This has the further consequence that a different instance of washing is involved, one affecting the canine rather than

\(^{19}\) To be sure, if it were realized the subject would be pronominal, as in (16a).
the feline. The replacement of *cat* by *dog* induces the conception of an event that is parallel to—but distinct from—the one described in the prior clause.

(17)  *She washed the cat. Then the dog.*

These relationships are sketched in Figure 26. As before, a double-headed arrow marks the locus of difference: *dog* contrasts with *cat* and supplants it in the event reconstructed in window i+1. *Dog* is the differential (Δ), which I have further marked by enclosing it in a dashed-line box. The structure it corresponds to and suppresses, in this case *cat*, will be referred to as the *anti-differential* (Δ⁻). Also shown in window i+1 is the unexpressed instance of washing involving the dog. It is drawn with a dashed arrow to indicate that it is not directly coded in either window, but emerges in the reconstructive process. It is parallel to the event described in window i because this interpretive process preserves as much of the prior structure as it can.

To say that this has been a minimal account of ellipsis would be an understatement. It does however provide some descriptive apparatus needed for non-constituent coordination.

5. Non-constituent coordination

Some cases of constituent coordination are semantically comparable to clausal coordination, as we saw in (9) and Figure 17. Rules of “conjunction reduction” serving to relate them were thus proposed in transformational grammar. It was also noted that some instances of constituent coordination could not be plausibly derived in this manner (Smith 1969). For instance, it would strain credulity to claim that (18a) derives from (18b). Such examples are unproblematic in CG, which describes them directly in their own terms.²⁰

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²⁰ This is not to deny that various subtle factors are involved. Some of these are discussed in Langacker 1991: §11.2.2 and 2009: ch. 12.
There are however cases of coordination that seemingly do represent the reduction of coordinate clauses. One such case is (19a), where the conjuncts—consisting of subject and verb, to the exclusion of the object—are usually not regarded as constituents. One way to handle such expressions was to posit a rule (“right-node raising”) deriving them from clausal conjuncts. From the CG standpoint, one might question whether these expressions are problematic to begin with. Adopting flexible symbolic assemblies (in lieu of rigid constituency hierarchies) makes it possible to maintain that (SV)O constituency exists in English as an alternative to S(VO), so that (19a) is actually just a case of constituent coordination. I believe, though, that matters are slightly more complicated. The commas in (19a) indicate that the sentence would normally be produced with significant pauses at those junctures. This prosodic feature is in fact characteristic of cases that are not in general susceptible to analysis as constituent coordination. At the same time, in simple examples it is not impossible to omit the pauses, as shown in (19b). I am thus inclined to posit two analysis for such sequences: one (without the pauses) involving the coordination of SV constituents; the other (with the pauses) being related to clausal coordination.

(19)  

a. **Ann washed, and Bob dried, the cat.**  

b. **Ann washed and Bob dried the cat.**

But how is it related? Expressions like (19a) cannot be derived from an underlying structure with coordinate clauses, as CG does not permit derivations. Previous descriptions of coordination in CG have offered non-derivational alternatives for handling the sorts of cases dealt with here. There was first the notion of “phonological coinstantiation” (Langacker 1991: §11.2.4), whereby a single phonological sequence simultaneously realizes multiple structures. A later analysis (Langacker 2009: ch. 12) posited constructions with component structures that are overlapping (rather than disjoint). I do not regard these as incorrect, nor are they clearly distinct from one another or from the proposal outlined here. I believe, though, that the present account is more straightforward by showing how the constructions in question emerge as special cases of ellipsis in the access and activation model.

On this account, (19a) is described as shown in Figure 27. One complicating factor, to be dealt with shortly, is that the two windows of attention are not strictly sequential—window i+1 interrupts the processing of window i instead of coming after it. The pauses setting it off are iconic indications of its interruptive nature, marking it as extraneous to the clause in window i.
So despite the interruption, Ann washed the cat functions as the baseline clause in window i. Bob dried is thus an elliptic expression that invokes this clause as the basis for its interpretation. It also represents the differential, Bob contrasting with Ann, and dried with washed. By substituting Bob and dried for their counterparts (the anti-differential), and otherwise preserving the structure of the baseline clause, the overt sequence in window i+1 is reconstructed as Bob dried [the cat].

It does not matter whether the elements of the differential (or the anti-differential) form a grammatical constituent in the usual sense. If not, they can simply be regarded as a bipartite differential like the one in (15) and Figure 24, except that its two elements happen to be adjacent. While the elements of a complex differential constitute both a conceptual and a phonological grouping (hence a symbolic grouping), they need not represent a “classical constituent” (Langacker 1997) of the sort represented in phrase trees. Indeed, they are not necessarily either contiguous or directly connected grammatically. The basis for their grouping is rather their shared status as elements departing from the baseline and being overtly expressed. This is so even if they are quite disjoint on other grounds. Groupings effected discursively—such as windows, differential, and anti-differential—contribute their own dimension of organization to the symbolic assemblies representing grammatical structure.

A related question is what the differential profiles. While it is understood as part of a reconstructed occurrence parallel to the one in window i, it does not necessarily profile that occurrence, which would give it the status of a finite clause. Profiling is the focusing of attention effected by symbolization, and generally the reconstructed process is evoked rather than symbolized in window i+1. In (17) and Figure 26, the differential is just a nominal (the dog), so presumably it profiles the nominal referent (a thing), not the event of her washing it. Matters are not so clear in (19a) and Figure 27, where the differential contains a grounded verb. If Bob and dried are directly integrated to form a grammatical constituent, as a whole it profiles the event. On the other hand, if they are simply elements of a bipartite differential, window i+1 has a dual profile, one nominal and one processual.\footnote{I incline to the former option, based on the general assumption that grammatical organization emerges to the extent that it can. In any case, the issue is not essential for present purposes.}

A final question raised by (19a) concerns the conjoining marked by and. Is it clausal coordination, constituent coordination, or neither? What should be identified as its conjuncts? On
the face of it, the conjuncts are *Ann washed* and *Bob dried*, so that is what I will assume. Are these grammatical constituents? Not necessarily. Given that window i+1 is interruptive, the structure in window i is *Ann washed the cat*, whose default organization is S(VO) rather than (SV)O. However, a glance at Figure 27 suggests an alternative: the conjuncts are nothing other than the differential ($\Delta$) and the anti-differential ($\Delta^-$). Irrespective of constituency, these are symbolic groupings which, as such, can participate in combinatoric patterns with other symbolic structures. So above and beyond the structure in Figure 27, with a clause in window i and a partial clause in window i+1, the differential and anti-differential combine to form the coordinate expression *Ann washed and Bob dried*, which cross-cuts the clausal groupings. This does not entail any substantial modification of the previous characterization of *and* or how it combines with the conjuncts (Figure 16). It need only be generalized to accommodate conjuncts defined discursively as well as grammatical constituents.

Thus the conjoined expression *Ann washed and Bob dried* is not, strictly speaking, a case of either clausal coordination or constituent coordination. Yet it is not really distinct from either one. The basic import of coordination is that the conjuncts are mentally juxtaposed and connect in parallel fashion with other elements. The differential and anti-differential are parallel in regard to their role in an overt and a reconstructed clause. Hence their juxtaposition and actuality implies the juxtaposition and actuality of these clauses (cf. Figure 17). And while they may not have any prior or independent status as constituents, the very fact of their being invoked as conjuncts provides a basis for regarding them as such. Rather than being prerequisite to coordination, constituency of the differential and anti-differential emerges from it.

Let us now consider (20), representing the construction known as “gapping” (Ross 1970).22 In contrast to the previous example, there is no question that the differential and anti-differential are non-constituents (at least prior to coordination). Each is bipartite, consisting of two nominal elements connected only via their participation in the clausal process. The differential (the overt portions of the structure in window i+1) thus has a dual nominal profile: the referents of *Bob* and *the dog* are focused successively in windows on a smaller time scale.

(20)  
*ANN WASHED* the *CAT*, and *BOB* the *DOG*.

Figure 28 should by now be self-explanatory. Appearing in window i is the clause *Ann washed the cat*, which profiles an instance of washing. The nominals in window i+1 specify two points of difference: *Bob* contrasts with *Ann*, and *the dog* with *the cat*. Because the participants are different, the event of washing reconstructed in i+1 (by analogy to window i) is a different instance of this process type.

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22 The example is quite similar to (15), the main difference being that the second verb is elided rather than just reduced in stress. My basic point, of course, is that accentual reduction, ellipsis, and non-constituent coordination are closely related phenomena handled in a unified way in the access and activation approach.
We can now describe the example we started with, namely (1), *Ann came with, and Bob without, a date*. In Figure 29, the non-processual relationship profiled by *with* is represented by a line connecting the referents of *Ann* and *date*. Vertical bars (l) indicate the cancellation of this relation by *without*. This is once more a clear case of the differential being phonologically discontinuous within the reconstructed clause: *Bob [came] without [a date]*. The reconstructed elements are separately shown in window i+1 and drawn with dashed lines because they are distinct from their counterparts in window i (different instances of *come* and *date*).

From the diagrams and discussion, the semantic structure of elliptic coordination should now be fairly clear. But what about its phonological structure? An initial point worth noting is that the target conception, involving parallel occurrences, is covered with maximal efficiency. One occurrence is coded in the usual fashion by a clause appearing in window i. Taking advantage of their parallelism, the second occurrence is specified as succinctly as it can be and still do the job: the only elements explicitly mentioned are those which diverge from the baseline clause. For this purpose, moreover, instances of the same type are considered equivalent—the type is specified just once, in window i, and that is taken as sufficient coverage for the distinct
instance in window i+1. In Figure 29, for example, the second instances of date and come are left implicit and have to be reconstructed.

The basic strategy, then, is simply for the baseline clause to combine with an elliptic expression consisting of and plus the differential. But where does the latter go? Sometimes it follows the baseline clause, as in (20): Ann washed the cat, and Bob the dog. In other cases it interrupts the clause, as in (19a): Ann washed, and Bob dried, the cat. And in some cases both orders are possible: Ann came with, and Bob without, a date; Ann came with a date, and Bob without. These basic patterns are represented in (21), using square brackets to enclose the phonological content appearing in window i, and parentheses for the overt content in i+1. These phonological sequences can either occur sequentially, as in (a), or else the differential can interrupt window i, as in (b).23 Two questions must therefore be addressed. First, what determines whether only pattern (a) is permissible, only pattern (b), or both? Second, what determines the differential’s position with respect to the baseline clause in cases where pattern (b) is allowed?

(21) a. [i clause] (i+1 and Δ )
b. [X (i+1 and Δ ) Y]

Let us look more carefully at the data. In (22)-(27), I list expressions corresponding to patterns (a) and (b) for previous examples as well as several cases where the differential consists of just one element (a nominal or a verb). To facilitate processing, both the differential and the anti-differential are given in boldface.

(22) a. *[Ann washed the cat], (and Bob dried).
b. [Ann washed, (and Bob dried), the cat.]

(23) a. [Ann washed the cat], (and Bob the dog).
b. *[Ann washed, (and Bob the dog), the cat.]

(24) a. [Ann came with a date], (and Bob without).
b. [Ann came with, (and Bob without), a date.]

(25) a. [Ann washed a cat], (and Bob).
b. [Ann, (and Bob), washed a cat.]

(26) a. [Ann washed a cat], (and Bob).
b. *[Ann, (and Bob), washed a cat.]

(27) a. *[Ann washed the cat], (and dried).
b. [Ann washed, (and dried), the cat.]

23 This is the opposite of what appears in the diagrams, where window i is included in i+1. We are now considering phonological inclusion, whereas the diagrams indicate a different kind of inclusion at the conceptual level: the content of window i is invoked as the basis for interpreting the differential.
Two basic generalizations can be made. The first, which comes with a significant qualification, is that pattern (a) is freely allowed. Showing the need for qualification (if not rejection) is the infelicity of (22a) and (27a). I suspect, however, that they represent a single, motivated exception that may not even require separate statement. These are the two instances where the differential ends in a verb, and in both cases it is transitive. Their infelicity might therefore be attributed to the awkwardness of a transitive verb appearing in such a salient position without its normally expected object complement—especially since it is so easily expressed with a pronoun, as in (28). Conceivably this gap in pattern (a) is just a matter of the pronominal alternative being well enough entrenched that it preempts the other option. One would then predict that pattern (a) should be permissible when the final verb is intransitive. Taking (29b) to be elliptic, as opposed to the constituent coordination in (29a), the prediction is borne out.\footnote{If a story along these lines is basically correct, why is the final preposition acceptable in (24a)? This may reflect a broader pattern of \textit{without} occurring without an object complement: \textit{Do you need a coat? No, I’ll go without}. In some cases a final preposition is indeed problematic: \textit{The cat was sitting on the table, and the dog under}. Adding \textit{it} makes this expression perfectly acceptable.}

\begin{enumerate}
  \item[(28)]
    \begin{enumerate}
      \item Ann washed the cat, and Bob dried it.
      \item Ann washed the cat, and dried it.
    \end{enumerate}
  
  \item[(29)]
    \begin{enumerate}
      \item Ann stretched and yawned.
      \item Ann stretched, and yawned.
    \end{enumerate}
\end{enumerate}

Still, it cannot be denied that the examples in question are in some way exceptional. It is also perfectly evident that a far greater amount of data will be needed to document the actual range of options for pattern (a). Presumably, in line with the usage-based approach (Barlow \& Kemmer 2000; Langacker 2000), it can be resolved into a number of subpatterns with varying degrees of specificity and entrenchment. Here it suffices to note the general availability of pattern (a) as a basic option.

The second generalization concerns the placement of the differential when it interrupts the baseline clause. It is easily stated: the differential directly follows the anti-differential. In simple cases, it produces a contiguous linear sequence analogous to constituent coordination, with $\Delta^-$ and $\Delta$ as the conjuncts: $\Delta^-$ \textit{and} $\Delta$. We thus have sequences like the following: \textit{Ann washed} and \textit{Bob dried} (22b); \textit{Ann and Bob} (25b); \textit{washed} and \textit{dried} (27b). A complicating factor is that the anti-differential is sometimes discontinuous in the baseline clause, e.g. in (24b). In that case the differential directly follows the final element of the anti-differential: \textit{Ann came with} and \textit{Bob without}. Pattern (b) can thus be formulated as in (30), where ellipses (...) indicate that the linear sequence containing the anti-differential may also incorporate extraneous elements.

\begin{equation}
[i, X ( \ldots \Delta^-)_{i+1} \text{ and } \Delta ] \ Y]
\end{equation}

Putting the differential someplace else in the baseline clause results in ill-formedness. Thus (23b) is infelicitous because the differential (\textit{and Bob the dog}) precedes, rather than
follows, the second element of the discontinuous anti-differential \textit{(Ann \ldots the cat)}. The sentence cannot be rescued by moving the differential to preverbal position; (31a) is just as bad as (23b), for the same reason. It can indeed be rescued by placing it after the object, but since the object is the final element of the baseline clause as well as the anti-differential, the resulting expression, (23a), is indistinguishable from pattern (a). With a longer baseline clause the patterns can be distinguished. Thus (31b) instantiates pattern (a), with the differential outside the baseline, whereas in (31c) it directly follows the discontinuous anti-differential inside the baseline clause, in accordance with pattern (b).

(31) a. *[Ann, (and Bob the dog), washed the cat.]
   b. [Ann washed the cat on Tuesday], (and Bob the dog).
   c. [Ann washed the cat, (and Bob the dog), on Tuesday.]

Further corroboration of (30) is found by comparing (25) and (26). In terms of their form, (25a) and (26a) are actually the same: \textit{Ann washed a cat, and Bob}. The difference, indicated by bold type, is that \textit{Bob} is parallel to \textit{Ann} in the former (so that Bob washed a cat), while in the latter it is parallel to \textit{a cat} (so that Ann washed Bob). The (b) examples are also formally identical: \textit{Ann, and Bob, washed a cat}. But as predicted, the expression is only felicitous with \textit{Ann} as the anti-differential.

6. Further issues

I will conclude by briefly discussing a number of further issues. There is first the question of whether it can plausibly be claimed that one window of attention (i+1) interrupts another (i). The very notion of windows is rooted in serial processing, with numbers indicating position in the temporal sequence. So it might seem contradictory to say that two windows are related by temporal inclusion.

But as was noted earlier, the inherent seriality of processing activity does not imply that linguistic structure reduces to a single linear sequence. Processing occurs in parallel in multiple domains and on different time scales, allowing hierarchical organization. Also departing from strict linearity are factors like recall, anticipation, and backtracking. Interruption can be added to this list. So despite the pervasive importance of temporal sequencing—time being the medium of conception—it is not the only dimension of structural complexity.

Like any phenomenon, windows of attention have a certain duration. But they also have a functional characterization. In Chafe’s terms, the length of a baseline window (intonation unit) relates to “how much information can be fully active in the mind at one time” (1994: 69). In a similar vein, I stated earlier that a window provides the extensionality required for multiple entities to be represented and connected with one another. A window might thus be thought of as the “working space” for accomplishing some processing task. Now most tasks worth doing decompose into subtasks, some of which feed into others. There are also limits on our capacity for multitasking.\textsuperscript{25} So usually a complex task—even when organized hierarchically—is carried

\textsuperscript{25} The seriality of speech imposes a strong limit. Although it may be possible, at the same time, to apprehend the meanings of two words, phrases, or clauses, we cannot pronounce them simultaneously.
out sequentially. The seriality of processing windows can thus be seen as reflecting that of the subtasks involved.

When windows are viewed in functional terms, duration and sequence are to some extent dissociable. Characterized as the time span canonically required to accomplish a certain task, a window can be recognized as such even when the task is momentarily interrupted to work on another. In non-linguistic tasks we tolerate interruptions all the time (or at least endure them). We are sometimes able to “pick up where we left off”, “without missing a beat”, and thus fulfill the task as effectively as in a seamless execution. Although the total time elapsed is then longer than without the interruption, the time devoted to the task itself may be the same.

Linguistic tasks are no different from any other in this regard. Interruptions range from ad hoc occurrences involving the insertion of purely extraneous content, as in (32a), to established constructions where the intrusive content bears a particular relationship to the matrix, as in (32b-c). Incorporation of the differential in a baseline clause falls under this rubric. It is not only conventional but has a functional motivation: by directly juxtaposing contrasting elements, it highlights the parallelism of the baseline and reconstructed clauses. And while processing of the baseline clause is interrupted, it is not disrupted. Our mental agility is such that we can usually resume and complete it while preserving its structural integrity. As shown in (32d), this may have the consequence that the baseline clause is split between 0-level windows (non-adjacent ones at that). So what counts as window i for purposes of elliptic coordination cannot be identified with a single prosodic window on that time scale. It is still a temporal window in the sense of being the (discontinuous) span of time during which the clause is processed, but from the constructional standpoint its functional characterization is more important. As in other cases, the coincidence of clauses with prosodic windows (Chafe’s “intonation units”) is canonical rather than invariant.

(32)  a. And then she said—Is your coffee warm enough? I can always warm it up—that she would never agree to a divorce.
    b. She would, I think, be better off without him.
    c. She finally decided, with some reluctance, to contact a lawyer.
    d. Ann came with // and Bob without // a date.

A related issue concerns the temporal sequence of windows i and i+1. Initially they were defined as the current windows at successive moments in processing time (Figures 7 and 8). It could not then be the case that one is internal to the other. We thus have the option of either hewing to the definition, so that window i invariably precedes window i+1, or broadening it to encompass both temporal and functional precedence. To facilitate description, I have adopted the latter course.26 But it is just a matter of definition. Either way, it has to be acknowledged that functional precedence does not invariably align with temporal sequencing in speech time. A few examples are given in (33): a pronoun can sometimes precede its antecedent (a); a topic sometimes follows the comment clause (b); and a clause may rely on the one that follows for specification of its subject and temporal location (c). In such cases, certain content is first processed with no indication of precisely how it fits in the overall target conception. It remains active until further content allows its interpretation.

26 It allows a unified functional characterization of the alternate word-order patterns: window i provides the basis for interpreting the content of window i+1.
(33) a. *The lies they tell don’t seem to bother right-wing commentators.*
b. *She’s really quite attentive, that nurse.*
c. *Before going to bed, he washed the cat.*

As with any description, the one presented here can be extended and elaborated. One direction of extension is to cases where the differential merely expands on the baseline clause, so there is no contrasting anti-differential.27 An example is (34), obtained from (32c) just by adding a conjunction. Here, too, it is possible for the differential to either follow the baseline clause or to interrupt it. Such cases suggest the absence of any clear distinction between elliptic coordination and other kinds of ellipsis.

(34) a. *She finally decided to contact a lawyer, and with some reluctance.*
b. *She finally decided, and with some reluctance, to contact a lawyer.*

The description might also be extended to cases of elliptic coordination involving structures smaller than clauses. Some instances involving nominals are given in (35a-b). These are not simply cases of constituent coordination, as the apparent conjuncts (in bold) cross-cut the constituency established on other grounds. Instead, they would seem to be elliptic versions of the conjoined nominals in (c) and (d). Note, however, that only the interruptive variant is clearly acceptable. The examples in (e) and (f), where the differential follows the baseline nominal, are marginal at best.

(35) a. *the red and the yellow jellybeans*
b. *many doctors with, and a few nurses without, fancy cars*
c. *the red jellybeans and the yellow {jellybeans / ones}*
d. *many doctors with fancy cars and a few nurses without {fancy cars / them}*
e. ??*the red jellybeans and the yellow*
f. ??*many doctors with fancy cars and a few nurses without*

Further study of these latter topics requires better knowledge of the actual usage patterns as determined by corpus investigation. This is also needed for research aimed at documenting the current status of the language; a comprehensive treatment of English coordination, in all its complexity, would have to characterize the full range of constructions and subconstructions, their relative frequency and productivity, the strength of any lexical correlations, and so on. That has not been my objective. While the present account could undoubtedly be extended and sharpened on the basis of corpus data, revealing additional phenomena and raising further questions, my own concern has been limited to determining how, in principle, some basic patterns can be described in CG.

The analysis does not presuppose any particular processing model, nor does CG purport to be one. It is a descriptive framework, and as such is formulated on the basis of linguistic data. Research in CG has consistently followed a particular strategy regarding the ultimate goal of explicating language as an aspect of cognition. To ensure its potential relevance in this respect, the mental capacities invoked are restricted to those which are either well known or easily

27 Such cases are thus analogous to the ellipsis in (16b) and Figure 25.
demonstrated (e.g. the focusing of attention, figure/ground organization, conceptual grouping). The aim is to show how a limited set of descriptive constructs make possible the cogent analysis of a wide and representative array of grammatical phenomena. Properly conducted, I regard this research as empirical in nature; through it we can ascertain what language itself suggests about cognition and linguistic processing. Particular descriptive proposals can then be tested by independent empirical methods such as psycholinguistic experiments and computer simulation, which can lead to their evaluation and refinement. Over the long term we can thereby hope to determine what kinds of processing activity might constitute particular aspects of language structure.

The present study is part of a broader research agenda investigating the inherent dynamicity of semantic and grammatical structure. I have tried to show that a cogent analysis of the topics considered here requires a descriptive framework that directly accommodates some plausible features of dynamic processing. In accordance with the general CG strategy, the features adopted are basically self-evident: it is hardly controversial that language processing has a serial aspect, that it occurs on multiple time scales, that we can attend to only so much at any one moment, or that levels of activation are a factor. By analysing a range of phenomena in those terms, we can find out more specifically what a descriptively adequate framework might look like. To the extent that they are detailed and well supported, the resulting proposals offer an informed basis for experimental testing and implementation in a processing model.

The descriptions presented here are certainly incomplete and at best preliminary, but they may at least suggest how certain important linguistic phenomena can be dealt with through motivated features of a coherent descriptive framework.

References


