

Fourteen Arguments for Purposeful Syntax
Ongoing Perspectives

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1. Abstract

With a view to recognizing transparently evident purposes in the structuring of sentence parts, arguments are presented for broadly extending the architecture of syntax to incorporate functional perspective. Evidence supports allowing a set of syntactic processes access to a register of purposeful linguistic intents as input conditions. This provides the context of function and purpose for the speaker decision and action to use a particular syntactic element or construction. A range of theoretical concerns provides justification for the proposal: Empirical Coverage, Psychological Reality, Overgeneration, Simplicity, Modularization of Cognitive Models, Scientific Definitions, Creativity, Interdisciplinary Connection, Semantic Interpretation, Levels of Analysis, Directness of Explanation, Lack of Alternatives, and Stylistic Mechanisms. Enhanced constraints are provided to explain the learnability of natural languages from sparse and unrepresentative data. A window is opened into the many creative dimensions of human language.

Highlights:

- Addresses unresolved phenomena: intractable residues, well-known analyses lacking functional explanation/basis, and syntactic methods for poetic effect.
- Demonstrates that conditions of linguistic purposeful intent satisfy criteria for valid analysis in theoretical syntax.
- Simplifies syntax by precluding syntactic over-generation that requires filtering in cases where ill-formed sentences reflect prior incompatible intents which would fail to be instigated in the first place.
- Completes the scientific definition of syntactic processes by inclusion of purpose.
- Provides insight to the classic question how complex human languages are learnable from a poverty of stimulus.
- Extends the architecture of linguistic competence by providing inputs of purposeful intent to the syntactic component, with consequent opportunities to interface with cognitive models in the disciplines of psychology, anthropology, sociology, stylistics, etc. This re-opens some narrower, more hermetic conceptions of grammar to the broad manifestations of human language.
- Envisages modular integration with future models of artificial intelligence, and shows a reverse engineering potential to induce features of psychological linguistic intent from linguistic structures.

2. Thesis

We present a set of arguments from the most challenging data showing that the goals of theoretical syntax (empirical grounding, coverage, explanation, learnability, etc.) can be additionally served if syntactic formations and processes are formulated to incorporate input requirements of linguistic intent, representing function and purpose for the speaker's decision to use a particular syntactic construct.¹ We refer to this as the *Purposeful Syntax Hypothesis* (PSH). This is distinct from, and only glancingly related to, an obscure alternate sense of 'intention'

¹ 'Speaker' and 'hearer' are conventionally understood to include linguistic activities in which there is no verbal speaking or hearing as in the case of signing or other modalities.

more akin to ‘semantics’ generally as it relates/projects to the outside world, as found in certain philosophical and neurological discussions (N.B. the philosophical distinction between *intentionality* and *intention*) consult (Allott, Lohndal, & Rey, 2021), (Rey, 2003), (Rey, 2020), (Rey, 2020) (Adger, 2021), (Hale, et al., 2022). Here, intention is simply the decision, for some explicit purpose, to take an effectuating action in the structuring of a sentence. All references to intent in the following should be read to include both the concept of purpose and a decision for ensuing structural action. Our goal is to bring particular syntactic data sets to bear on the PSH and show their implications

There exists an *a priori* empirically evident necessity for the representation of linguistic structural intent attaching to theories and models of language, including centralized structural syntax in the generative program. Chomsky has frequently mentioned an intentional component as part of a full cognitive model. (Chomsky, 1995, pp. 2,154,201).

Purposeful Grammar (PG) provides a linguistic hypothesis, reflecting that a sentence is a set of actions, a composed performance wherein structural intentions are both evident from common observation of linguistic usage and, by definition, provide initiative for generative production. The possibility of a marginally widened model for generative grammar results.

Is an extension to purposeful instigations for syntactic structures dispositively anathema to the generative program? This seems a risky skepticism in light of Chomsky’s own advertisements for an interface to linguistic intention, with the implication that the generative model of linguistic cognition extends to interfaces that would otherwise leave syntax lacking inputs. Furthermore, the generative endeavor is explicitly a *program*, as opposed to a set of fixed theories, anticipating ongoing significant revisions as have already been introduced. An interface with functional intention is envisaged by Chomsky but needed to be backgrounded to promote progress on the manifold primary issues of structure and form. An implication that syntax can connect to an intention interface should in general not be surprising since otherwise syntax is left lacking inputs. (Chomsky, 1995, pp. 2,154,201)

The relation of form to function for Chomsky has been discussed previously. (Newmeyer, 1994). Newmeyer, citing Chomsky extensively, documents Chomsky’s openness to a role for functional factors. Any appearance that Chomsky denies functional impetus appears a misunderstanding from the highly successful methodological necessity initially to subdivide the complexities of human language so that rapid scientific progress could first be made in the domain of structural effects.

The working architecture of the generative model of language, launched on a syntax core without articulated inputs, has yielded rich results in the discovery of a large number of syntactic processes, constraints, and effects. These represent lasting fundamental relationships and generalizations, but they also allow progress beyond an isolative working model. Use of structural intention introduces an evolving architecture to seek additional descriptive and explanatory accounts in the context of function.

We propose and motivate here a step into this extended domain, Purposeful Grammar (PG), in which a sentence is an action, a performance wherein purpose is present in generative framing,

feeding instigations to syntactic formations. A sentence intention is a formative set of decisions for external representation of communicative thought by means of highly constrained, conventional, interlocking structures and processes, which can be thought of as 'tools' to reflect utility. Each tool is an intentional device for specific effect in the process of utterance generation, distinguished from the traditional concept of a linguistic 'rule' by the explicit specification of intent added to the standard structural input and output conditions. The data essential for motivating these linguistic triggers emerges from explicit field transcriptions of evident user action and intent and are represented in a provisional controlled scientific vocabulary. PG postulates that sentence generation exhibits linguistic cognitive actions fundamentally as companions to syntax processes more procedurally. Thus, they are supportive of, but distinguished from, the hypothesis that humans are fundamentally "syntactical animals". (Searle, June 29, 1972) Origination is coupled to effectuation. One crux of evaluation for this augmentation is whether stronger constraints on human language processes become available in support of the biologically desirable goal of positing simpler necessary apparatus compared to more exclusively syntax-centered accounts. This revision of the architecture of syntactic competence, edging away from an initial more isolative modularization, is highly desirable if it increases the potential for explanatory power and advances Chomsky's minimalist biological thesis.

Constraints on the inter-compatibility of intents present a potential to render relevant rules, conditions and constraints on configurational syntax simpler or unnecessary in those cases where unacceptable sentences reflect the incompatible misapplication of tools. Some swath of linguistic ill-formedness can be attributable to structures involving incompatible intents wherein actions involving conflicting purposes are rationally unexpected or inconceivable. It is beneficial not to have to rule out what may never occur.

PG refrains from placing intention at the "center" of generation. In place of a spoke-hub architecture, the PG approach proposes a data stream flow process. Intentional instigation, separate, uncombined, unentwined and prior, feeds syntactic construction through a register available at all stages of derivation.

The paper does not actively aim explicitly to contradict current models of syntax, but only to add a dimension, less undermining the Minimalist framework than seeking to extend and buttress it. PG adds input conditions so various doomed structures can be precluded prior to dead-end generation. To alleviate the burden on late filtering devices, PG provides conditions on specific structure building processes in the stages of generation to preclude structures of no utility due to incompatibilities of purpose.

No fundamental concepts, such as classical syntactic operations, can properly be filled out without understanding why, functionally, they should operate.

PG offers a contribution to the biological framework of Minimalism by providing supplementary explanations for the fundamental Chomskyan observation of rapid language learning in the context of a paucity of data. Where well-formedness depends on compatibility of intents, a language learner does not need data samples of what can and cannot be said.

3. Specification of the Purposeful Syntax Hypothesis (PSH)

3.1. Organizational Features

- Beyond a representational symbolic formation, sentence generation is the product of purposeful psychological actions.
- Syntactic abstract symbolic computation, in the domain of hierarchical structure, is complemented by inputs of purpose.
- Linguistic intent and syntactic structure are sequentially separate and unentangled but connected cognitive modules.
- Linguistic intention formation emits a register of specifications of purpose providing instigations which feed and condition syntactic formation throughout a derivation.
- The PSH concerns the intentional sources of specific syntactic components, as opposed to why a speaker may originally choose to construct the whole of a sentence in the first place. It addresses the grammatical construction of the sentence and the instigation of its structural parts, but not the larger creative conception leading to a decision that a sentence on certain topics, with certain commentary, is to be produced. Its domain is not general ideation but only the purposes and mechanics of presentation.
- Structural intent, as particularized sentence instigation, not operating in free productivity, brings a potential to forestall syntactic over-generation requiring ill-formedness filtration in late semantic interpretation.
- Feeding intention to condition syntactic structure lessens and simplifies the burdens of computational formation by precluding superfluous structure of no utility.
- Linguistic intention straddles the competence/performance divide, triggering generative performative structural actions effected by syntactic processes.

3.2. Technical Features

- Specific linguistic intentions precede specific structure formations.
- Specifications for linguistic structure-building and modification allow input requirements of structural intent and purpose, added to the standard structural input and output conditions, such that if not matched or in conflict the process will not operate. Where operative, specifications of intent complete the formal definition of a syntactic process by adding identifiable purpose.
- Intentions, throughout the stages of syntactic construction, are available in a register of relatively flat arrays of features. As complex and typically deep syntactic trees are generated in stages, the (interspersed) inputs of intention and purpose are themselves, in contrast, each relatively very flat. These do not displace the larger hierarchical process but only add simple input conditions to check formations for incompatible and contradictory intents and purposes.
- PG provides a “whiteboard” register into which specific features of purposeful intent are written and made available to the syntactic module which can read input during the stages of the structure building process.
- The relation of intention to structure is not necessarily an isomorphism one to one. For its presence, an observed structure must necessarily either have been directly intended by the speaker or can be indirectly automatic from other elements and

processes of sentence formation. Neither multiple effects nor optional effects from a single intention are ruled out in principle, nor is the case of a single syntactic process depending on separate intentions. Rather, the core goal is only the blocking effect of incompatible intents in a particular structural context. The PSH does not extend beyond a feeding relationship of intention to particular syntactic processes.²

4. A More Comprehensive Data Context

PG data includes newly introduced empirical data of intention. These result from observations of observers (who speak the same language) about what the speaker was intending to do in using particular constructions. These are accessible empirical data, heretofore not considered, which *de facto* underly sentence generation and complement the acceptability/unacceptability perspective on syntax. They are data, independently and directly observable from personal intuition and situational observation, similar to acceptability judgments and basic meaning, and equally verifiable through psycholinguistic investigation. Where ill-formedness has distinguished two types of data, ungrammaticality (syntactic ill-formedness) from semantic anomaly, PG provides a third type, intentional incompatibility, with commensurate empirical status. These are independent primary empirical observations that widen empirical scope and add leverage to linguistic argumentation. Raw data elicited from observers can be synthesized and validated into theoretical constructs by comparison of multiple sources.

Failure to recognize intentions as data begs the very hypothesis of their importance. Speakers of a language routinely apprehend what is intended in a sentence and express as much in paraphrase and in response to fieldwork questions. It is already transcribed in some work in the social sciences and can be validated. The widened perspective is not superfluous, unexpected, or premature: inputs of intention have been noted by Chomsky, through a period of rich discovery internal to the syntactic component.

5. Methodology of Argument Based on Unresolved Phenomena

To support a thesis with broad scope it is diffusive and inefficient to sample in detail the full literature on syntax through its variety of interpretations and conclusions. First, those analyses may often stand unaffected by intention, but also their very depth and breadth draws away from focus on the PG thesis. A more focused evaluation involves the analysis of phenomena which theories have been unable to resolve. In this, the strategy is not to critique analyses, but to look beyond. Rather than reworking theories, the goal is to ask whether the PSH itself is supported by evidence and true.

For argumentation we selected several kinds of phenomena:

- CORE EVIDENCE: Intractable residues, where authors themselves cited puzzling unresolved resistant/recalcitrant/perplexing residue data, balking, where no syntactic solution could be found.
- SUPPORTING EVIDENCE: Well-known structural analyses, lacking functional explanation/basis, in cases where purely syntactic accounts utilized structural features

² Chomsky's deferral of the topic of syntactic intention is compatible with the view that intentions can provide input at any stage of syntactic derivation. A number of mapping questions must be left to future empirical investigations.

but lacked any explanation or basis for *why* the conditioning properties should operate.

- EXPANDED EVIDENCE: Syntactic mechanisms for stylistic poetic effect. Since practical application validates theory, an ability to explain poetic effect is a strong test of the truth of a hypothesis in a most challenging context.

We demonstrate conditions of intent from a prior level of cognitive processing, providing functional explanation for constructional data. A diversity of these arguments provides support for the PSH.

6. Relation to Previous Literature

A review of the syntactic literature must be outside the scope of this paper as are the many ongoing revisions to particular theories, noting abundantly different approaches, variants, and unresolved controversies. We present PG for comparison in the context of literature syntacticians know well in order to open a new perspective. Our question is the general utility of an added dimension rather than pursuit of definitive solutions for particular problems. (For other work on challenging questions that remain for pure syntax, refer to (Culicover, 1999) and (Chomsky, Gallego, & Ott, 2019).) It would be duplicative and untoward to extensively excavate the literature when our aim is only to point the way to new considerations and show how widened perspective may even buttress old conclusions. In any case, an orientation to prior work lacking reference to intention would beg the question whether new data of functional motivation can cast some syntactic problems in a new light.

An important goal of PG, beyond syntactic solutions themselves, is to discover why, functionally, any particular syntactic mechanism might be operative. What explains what syntax affords? This cannot be fully achieved in a narrower focus, but only by superordination, as proposed here, with new data, and new perspective. PG seeks explanations *why* construction types should exist and *how* they may not be inter-compatible. This extends the generative program of constraining symbolic generation to yield only acceptable forms.

Where data might be described, for example, in terms of categorial c-selection or case-marking properties of the verbs, there is the question *why* structural constructs and constraints themselves are operative. Functional explanations can complement a syntactic accounting by further probing at a prior stage of linguistic decision making. Where pure syntax discovers a structural explanation, PG can be resourced for a functional correlate.

Pure syntax has shown itself amenable to explanations of certain types. While simplicity and other metrics of symbolic computation are useful, PG ranges beyond to non-structural functional explanations. When syntactic mechanisms and categories are available, as for c-selection categories and complementation types, PG looks to add functional perspective based on compatibility of intent.

Chomsky himself encourages meta inquiry to understand the *why* of syntax. For example, extending beyond how syntactic movement operates, that he holds that the internal merge mechanism is unsurprising due to its singular simplicity. PG envisages a complementary road

to explanation, a direct immediate route to an additional form of explanatory adequacy, exploring beyond formal properties to function in symbolic generation. There can be several paths to knowing how language actually works, and what is actually true.

7. Formalization and Definition of Terms

Per the generative hallmark of formalizing proposals, PG might give an initial false impression that it lacks the same degree of formalization. This is misleading due to the nature of intentions themselves, which, require more limited internal structure, even though they can condition complex syntactic processes. As a register of conditioning state features, they themselves have no need for complex structural trees, processing cycles, feature checking, output conditions, and so forth, as characterize pure syntactic accounts. These formal entities can remain available in syntactic derivations themselves even if not present in an input intention register. Intentions appear more simply as plain features of control. An important empirical hypothesis concerns the degree to which a simple register of intention features can obviate a range of complexities in pure syntactic generation sans intention without lessening the overall formalization of the system.

We refer to any integral clusters of these features as an *actioneme* when they evidently act as a whole and operate together. These elements are, of course, subject to refinement, and are presented here, marked by a dollar sign \$, only as pseudocode during higher level theoretical discussions.

Scientific aspirations must include comprehensive definitions of fundamental technical terms. The syntactic processes on which generative syntax is founded have often been defined only in terms of their structural properties and effects. Passive, for one example among many, has been characterized as a structural manipulation or mapping. PG has the important ability to fill out these definitions by adding functional purpose, adding an account for *why* these processes exist. Function can be an important element of definition contributing to the overall formalization of a system.

In addition, linguistics has not always converged on persisting scientific definitions of basic concepts, leaving, for example, *sentence* with a fairly intuitive understanding. PG suggests a possible candidate for the definition of a syntactic *sentence*: a structured output representation intended for external interpretation, initiated from an integral set of specific, compatible linguistic intentions that trigger linguistic structure-building actions.

8. Theoretical Positioning and Clarifications

8.1. Competence/Performance

While not traditionally a part of linguistic competence, syntactic structural intention qualifies, per the definition, as enabling knowledge in the capacity for language. It is also the instigation for linguistic performance suggesting a position at the competence/performance boundary. Corresponding to this, a structural instigation might in one circumstance be relatively conscious or less so in another. PG marginally opens linguistic competence to inputs of intention and purpose by means of an interface register.

8.2. Information Structure

Some cases to be discussed have an indirect relationship to work on Information Structure (IS). (Krifka, 2008) (Féry & Ishihara, 2016) While we propose a unified, more deterministic data flow model of syntactic generation, wherein if a user intends then a consonant structure is enabled, the work on IS has been noted repeatedly to lack an integrative generalized processing structure.

“...several theoretical approaches to explaining information structure: information status as a part of the grammar; information status as a representation of the speaker’s and listener’s knowledge of common ground and/or the knowledge state of other discourse participants; and the optimal systems approach. These disparate approaches reflect the fact that there is little consensus in the field about precisely which information status categories are relevant, or how they should be represented”. (Arnold et al., 2013)

In a recent comprehensive analysis, there is clarity that IS results from pre- and extra-linguistic processing that elaborates a framework in which useful sentences can be conceived and constructed:

“... few look beyond the sentence to examine in any detail the range of kinds of contexts in which an utterance with a given focus is actually felicitous. ... information structure is literally a structure on information — on the inquiry pursued in discourse and the information which that inquiry yields — and not on the utterances or sequences of utterances used to present it. All that is given at the sentential level, conventionally, are certain sorts of presuppositions about the place and function of the utterance in the information structure of the discourse in which it occurs.

This clear framing of IS implies that while its higher cognitive order appears not amenable to direct control of syntactic structures, it does provide the larger context which speakers have available in the complex ideational process to select structural intentions as input to syntactic construction. When there is an attempt to infer IS from morpho-syntactic and phonological patternings alone, without recourse, behind formal linguistic structure, to the larger cognitive context, there is also an element of circular codification without explanation.

IS concepts relate to larger context such as background knowledge, style, politeness, etc. In a variety of structures, one observes preposing, the moving of material closer to the start of the sentence. Operative concepts that have been proposed include focus, topic, givenness, backgrounding, newness and comment. These elements imply intent, but do not yield readily to unified integrated formal definitions. They are observational constructs, not motivated for direct linguistic generation, but rather reflecting prior conceptual preprocessing to afford the creation of syntactic directives. The resultant intentions, by contrast, instigate dynamic structural processes to bring items to the fore of attention. In *topic*, for example, its elusiveness as a formal concept suggests that there is no strictly formal unity, but only a variety of (intentional) processes that elevate elements to a higher level of attention. Intention

is where the complex sources of PG converge as structural decisions to take specific structural actions.

IS has been concerned with a narrow range of features compared to PG. Since structural parts of sentences are intentional by fiat (when not syntactically automatic), the entire domain of structural generation is evidently saturated by foregoing intent. This extends well beyond any framework of IS as currently articulated within its restricted set of informational dimensions. PG seeks to provide an integrated, unified and regulated theory of purposeful conditions on syntactic generation, which can have elements of IS in the background providing ideational context but syntactic structures are more directly determined by features of structural intention than by the relatively amorphous contexts of global information.

8.3. Pragmatics

Consideration of the pragmatics literature prevents dismissive relegation of PG to “only pragmatics”. No level of analysis has been proposed where the data of sentential intention and purpose are systematically codified as formal inputs to syntactic construction.

The claims of the PSH are in a different category from pragmatics or information structure. Despite evident intentions behind some pragmatic analyses, there has been no formal representation of intent, despite an implicit role, and the use of observational data of a quality similar to that of PG. This is not to deny any relationship, however, since the complex and varied areas of pragmatic ideation can underlie final decisions that register structural intention and condition syntactic construction. Pragmatics can be the precursor to structural action, mediated by the register of intentions per the PSH, but it includes dispersed domains more removed and less directly consequent for structure.

Pragmatics is far ranging and has been reported unwieldy as a unified whole or as an integrated module of cognition: it involves the study of human communication in the unrestricted context of use, including phenomena that affect expressive choices and potential inferences.

- For Green (Ward, 1991, p. 345) (Green, 1996), “pragmatics is inherently interactive, [...] the central notions of the field... are properties of speakers and hearers, not of words or sentences.”
- Jucker (Jucker, 2012, p. 512) characterizes it as a perspective rather than a cognitive module.
- Carnap has it broad enough to subsume voraciously per his delineation to the areas where “reference is made ... to the user of the language”. (Jucker, 2012, p. 498)
- Chomsky understandably demurs at any “theory of everything” lacking sufficient methodological focus. (Chomsky, 2000, p. 70)
- Jucker notes that, pursuant to foundational studies, there continues an “unprecedented diversification of subfields”. (Jucker, 2012, p. 498)

While pragmatics is dispersed over many areas of ideation, wide ranging in its manifestations, and oriented to the varied interactive nature of language, PG is narrowly restricted to specific constructional intentions the user has conceived from whatever

cognitive source, including pragmatics. Pragmatics orients to the domain of interaction, while PG adheres to closely purposeful construction of sentence parts in particular form throughout the stages of individual sentence construction. It provisions resolved decisions out of larger cognitive processes which are registered in order to relay directions to syntactic construction.

The elements of language would never be emitted without psychological instigation, requiring a place in cognitive modeling for structural intent. Isolated investigations have addressed the specific constructional purposes of particular structures (Green, 1996), but the domain of PG is yet to be properly explored by generative theory. Current work on semantic under-specification and incomplete logical form in a syntax/semantics generative system (Kempson, 2012) do not include intention requirements for structural production. It is self-evident that the speaker knows fully in the presentation of a sentence what and how s/he intends to communicate, so under-specification finds utility only in theories less concerned with the psychological realities of production. References to the “pragmatics-syntax interface” (Kempson, 2012) do not address intention and lack a formal register for its interaction with syntax.

9. Goals and Criteria for Evaluation

To guide the exploration, we propose the following criteria to evaluate the PSH:

- 9.1. Empirical Coverage: Speakers, linguists and psycholinguists have validatable access to the reasons for which speakers utilize a syntactic formation. These can be transcribed from contextual observation and validated with psycholinguistic methods.
- 9.2. Psychological Reality: Comprehensive modeling of cognition must include direct inputs to syntactic generation; psychological reality requires the intentional inputs that evidently underly structural choice.
- 9.3. Potential for Computational Inference: It becomes possible reverse engineer features of psychological linguistic intent from linguistic structure.
- 9.4. Overgeneration: Lacking inputs, syntactic generation has necessary recourse to overgeneration of syntactic candidates prior to late culling of unacceptable utterances via an interpretive component. In PG, incompatible intents can preclude bad sentences as non-starters, curtailing non-productive generation.
- 9.5. Simplicity: Simple constraints on incompatible intents preclude complex analyses depending exclusively on configurational structure. In symbolic systems, unnecessary complexity and ad hoc formulation frequently result when phenomena are addressed at the wrong level of generalization, lacking pertinent fundamental information.
- 9.6. Modularization of Cognitive Models: Interconnecting domains of human cognition are limited by a syntactic component having no immediate and explicit psychological interface.
- 9.7. Scientific Definitions: Comprehensive definitions for formational structures are incomplete without a specification of purpose. Well-studied constructs such as Passive, Dative Shift, etc., have been characterized as patterns, configurations, and relationships without specifying their purpose, function or intent.

- 9.8. Creativity: Beyond Chomskyan syntactic creativity, intention widens to a spectrum of types, including instrumental creativity by individuals and groups who create new formations for a structural purpose.
- 9.9. Interdisciplinary Connection: Transcription of linguistic intent (re)connects with the anthropological studies (where linguistic motivation frequently surfaces. Intention is pervasive in sociology, stylistics, and diachronic change, etc.
- 9.10. Semantic Interpretation: In syntax-focused models, semantics is an interpretive process operating on syntactic construction. This is a formalist characterization - syntax connects sound to meaning - but functional, psychologically instigated processes are not precluded in principle. A recipient interprets what a speaker projects, providing empirical status for formational intention.
- 9.11. Levels of Analysis: Failure to analyze at the proper level of symbolic representation promotes unnecessarily complex systems. An accounting may elucidate surface data patterns, but not be insufficiently integrated into larger processes to capture the true generalization. Simpler solutions may be available at a different level of analysis.
- 9.12. Directness of Explanation: If more elaborated, indirectly inferred intermediate apparatus can be reduced, while accounting more directly for the same observations, theories are enhanced and may be more natural, or cognitively justified.
- 9.13. Lack of Alternatives: When a phenomenon is explained by linguistic intent, but not in terms of syntactic structure alone, the connection between intent and syntax is validated.
- 9.14. Stylistic Mechanisms: If the effectiveness and impact of stylistic usage cannot be understood in structural terms but is explained by intent, the connection cannot be ignored.

The launching point for this paper is the observation that Chomsky himself often presciently referenced linguistic intention for consideration as a module of symbolic action. Here we explore how it can be opportune to connect intention to the theory of syntax. These goals and criteria are useful for evaluation of our thesis.

10. Specific Aims for the Supporting Arguments

We propose to augment the syntactic component with a register specifying speaker linguistic intent and purpose as input for choice of lexemes, morphology, structures, formations, and transformations. These instigations are evidently contiguous and interlaced with the process of Merge, in evident ways subject to future studies.

10.1. Axiom of Purposeful Grammar

Utterances are built with structural actions, each characterized as a linguistic structural process. Each has input requirements, output effects, and a specification of linguistic intent or purpose.

10.2. Corollary

Certain unacceptable sentences never would be generated in normal discourse in case they artefactually represent divergent conflicting intentions which would not be projected by a rational mind in a cognitive process unified around a decided set of goals. This relieves the configurational syntactic component from the responsibility to exclude these sentences, thereby potentially simplifying the syntactic component and vesting it with added psychological reality as a coherently integral module in a cognitive model of sentence production.

11. Selected Arguments

Following is a set of arguments for the PSH.

11.1. Conflicting Intents in Passive Structures

Deceptively mundane observations lead to significant implications for the syntactic passive construction, showing clearly that linguistic intention is directly involved. Formal recognition of intention input to passive syntax affords two benefits: 1) simpler, more direct empirical accounting for unacceptable structures 2) an opportunity more completely to define the linguistic element ‘passive’ as a formal operation, which has generally been characterized only in terms of configurational patterning without involving the essential specification of what it is for. We also demonstrate a corroborating side effect explaining why passives can characteristically be stative and involve past participles and perfectivity.

For discussion, we represent a structural linguistic intent action (or a combined set of such linguistic actions), as an ‘*actioneme*’, symbolized using a dollar sign (‘\$’). An actioneme is analogous to but different from e.g., the *emic* ‘sememe’ of traditional linguistics. It is a basic psychological component of linguistic structural intent and action. Actionemes are introduced as pseudocode in the tradition of symbolic system architecture where it is efficient and customary to summarize actions less formally in the design stage of system architecture, prior to later formalization in actual implementation.

The actioneme is a basic transcription of what a user is doing, the originating linguistic mental action, when a linguistic element or structure is selected and formed. It specifies communicative intention without the full semantic specification of received utterance meaning; the latter being a matter of reception and interpretation rather than utterance generation. The term *actioneme* signals emphasis on what forms are intended to do. The separate field of interpretive semantics involves discovering consequential receiver impacts and inferences from the transmitted signal, which can differ from what the speaker intended.³ A speaker can have in mind how an utterance might be interpreted, but this separate parallel cognition is not considered here.

It is axiomatic that every element of linguistic (trans)formation⁴ has intentional cognitive

³ We differentiate this work from the earlier contentious tradition of generative semantics since we do not advocate that syntax should be directly derived from an underlying semantic representation in logical or other form, but that it is useful to posit an intermediary action phase involving decisions that determine aspects of how structures will be built. Intention grammar involves this indirection and does not address the historical arguments for or against generative semantics.

⁴ Or construction, as the reader prefers. Throughout this work transformations may be cast as alternate constructions

purpose. We use the well-known passive formation here to illustrate.⁵ The passive form of a sentence evidently is not functionally equivalent to the active form:

- (1) Al visited the sick woman.
- (2) The sick woman was visited by Al.
- (3) What was surprising about Al was that he visited the sick woman.
- (4) *What was surprising about Al was that the sick woman was visited by Al (him).

This illustrates that an actioneme is operative in the passive example: \$bringPatientIntoEventFocus. The active form can be explained as an unremarkable default. (Or, since one might wish to assert the default functional intention, possibly reflecting \$exhibitEventAgencyFocus). When another phrase highlighting and focusing special characteristics of the agent (such as “What was surprising about” or “Of all the foolish acts given her allergies”) is added in contrary combination, the passive tool drawing focus away from the agent becomes incompatible.

- (5) Of all the foolish acts, given her allergies, Al visited the sick woman in his wool sweater.
- (6) *??Of all the foolish acts, given her allergies, the sick woman was visited by Al in his wool sweater.

These examples show a cognitive intention conflict⁶ between tools in opposition, trying in a single sentence, at cross purposes, to both add and displace special attention to the agent. This illustrates a natural Cross Purpose Constraint on the intentions underlying syntactic structure. One would not, at the same time, put the agent in focus and remove it from focus.

There are fundamental advantages in using intention to preclude and obviate an irrational possibility by affirming that it would not be generated in the first place.

1. There is added psychological and computational reality for a syntax that has instigative inputs. A computational model necessary for fast processing is enabled compared against an architecture requiring over-generation and filtration of dead-end possibilities.
2. Elements of syntax can be fully defined. Where structural syntax can only characterize patterns and relationships among syntactic forms, PG has the advantage of adding purpose and rationale for the structure itself, including what it is for. This enables a functional definition of passive as a structural manner of focus presentation,

depending on considerations which we do not presently take up.

⁵ In case a theory denies the existence of a particular transformation and construes syntactic alternations to have been produced directly, our arguments still apply, because at some point in sentence production a choice of structure is made and must be reconciled with other choices.

⁶ An intention incompatibility is a situation where the use of one tool does not make sense in the context where another tool has been used. A representation involving both puts them in conflict. These may either be viewed as constraints on construction, as we do here for purposes of demonstration, or might possibly be built into the individual tool structures so they are not candidates for conflicting insertion into structure. In either case we maintain that the filtering of incompatible structures follows from the common-sense utility of the structures rather than abstract configurational structures.

- not merely a patterning, but an intentional action with structural results. This explains why passive structures are distributed so widely in the world's languages: there is great utility in promoting patients into focus.
3. A prominent correlation falls out naturally and fully explained. Passives in many languages are typically stative, and also involve past participles and perfectivity. This is explained by noting that it is the patient that is promoted, and its inherently implied past stative nature reflects an element having been acted upon, in perfectivity, per the agentive predicate.

By adverting to an additional empirical fact, the intention to refocus on the patient, the analysis is brought to a more psychologically connected architecture, a simpler, more direct accounting, a completed scientific definition, understanding of the co-occurrence of perfective verb forms, and a wider perspective, explaining why passives are common in the world's languages.

11.2. Placement Alternations : Exigencies vs. Stylistic Options

PG accounts for the interplay of required syntactic processes with optional stylistic ones, uniquely offering explanations why data patterns as it does.

The following set of placement alternations has presented a perplexing challenge to pure configurational analysis lacking functional basis. Why the patterning? The phrase "at noon" seems often to follow the verb object. (data from (Johnson, 2007) p. 46)

- (7) a. Jill ate it at noon.
- (8) b. * Jill ate at noon it.
- (9) a. Jill ate spätzle at noon.
- (10) b. * Jill ate at noon spätzle.

But multiple conditions affect acceptability:

- (11) a. Jill ate the rotting kumquats.
- (12) b. Jill ate at noon the rotting kumquats.
- (13) Jill ate the rotting kumquats at noon
- (14) *Jill ate at noon the soup
- (15) Jill ate at noon a bowl of rancid wonton soup

These illustrate the well-known heavy NP structure whereby "at noon" can be located closer to the verb for a heavy object. We characterize it, as an intentional linguistic function: \$specifyUnusualObjectWithLongDescription. For this action, considering the heavy resource allocation and burdened processing, it is a parsing advantage to trigger a compensatory (trans)formation tool to keep the simpler verbal modification unit contiguous and easily associable to leave the more complex object isolated at the end of the sentence. The simplified parsing involves only a single boundary, etc. This structural (trans)formation, \$reassociateSimpleVerbalModifier, locates the simpler verbal modifier back close to the verb for transparent association. The unacceptability of [*Jill ate at noon the soup.] is due to the

useless application of \$reassociateVerbalModifier when there is no triggering circumstance of intervening complexity.

This is not overly different in mechanics from the traditional syntactic rule of Heavy NP Shift, excepting that we propose a tool with rationalized intent for computational purpose, extricating complexity away from the verb so that the association between the simple time phrase and the verb is not weakened, obfuscated or rendered ambiguous. As a reinforcing function, the heavier predication is relegated rightward, more a position for new information than interspersed internally. This analysis, involving purpose and considering instrumental utility, provides a functional definition for Heavy NP Shift, and the rationale why it should exist.

Note the similarity of this process to the well-known alternations of dative shift:

- (16) She gave the book to the man.
- (17) She gave the man the book.
- (18) ?She gave to the man the book.
- (19) ?She gave the old-fashioned book I brought back from France that didn't have the pages cut to the man.
- (20) She gave the man the old-fashioned book I brought back from France that didn't have the pages cut which earlier in the year had been noticed.
- (21) *She gave the old-fashioned book I brought back from France that didn't have the pages cut which earlier in the year had been noticed to the man.
- (22) She gave to the man the old-fashioned book I brought back from France that didn't have the pages cut which earlier in the year had been noticed.

Dative shift overlaps in its information restructuring capability, but differs because it is optional when the utility of restructuring is not present, i.e., when the object NP is not heavy. This is evidence that the \$reassociateVerbalModifier family of related operations can serve multiple functions. In the case of dative shift, the trigger can reflect, not specifically a reorganization to avoid a difficult-to-interpret dispersal of verbal information, but a stylistic decision to set relative affiliations of direct and indirect objects with the verb. The optional speaker action \$createPrimaryAssociation alternatively bonds via contiguity, or foregoes bonding, as a stylistic measure of speaker intent.

Note also the ability to handle a similar perplexing phenomenon cited by (McCawley, 1998) p. 66 as a “constraint against subordinate clauses in the middle of a surface constituent”:

- (23) Bill told that lie to Alice
- (24) *Bill told that Fred had quit school to Alice.
- (25) Bill told Alice that Fred had quit school.

The actioneme approach addresses further puzzling difficulties in a range of configurational analyses. (Johnson, 2007) p. 83 summarizes the theoretical importance of his data: “the conditions governing these preferences come from something other than syntax proper.”. Functional intent evidently accounts for the syntactically impervious cases cited by Johnson:

Obligatory Heavy NP Shift: finite CPs:

- (26) *Max [said that pigs fly] yesterday.
- (27) Max said yesterday that pigs fly.

Optional Heavy NP Shift: “full” NPs:

- (28) Max visited the students yesterday.
- (29) ? Max visited yesterday the students.

PPs:

- (30) Max talked to the students yesterday.
- (31) Max talked yesterday to the students

Blocked Heavy NP Shift:

Pronouns:

- (32) Max visited him yesterday.
- (33) * Max visited yesterday him.

“Short” NPs:

- (34) Max visited children yesterday.
- (35) ?*Max visited yesterday children.

Johnson adverts to a need for a different level of analysis: “This is a deeply mysterious affair. Why should movement transformations exist? A goal of much current research in syntax is to find an answer to this mystery. “

In PG, (trans)formations include tools to implement specific effects for purpose. Tools are, or are not, stylistically optional and are, or are not, functionally compatible with other tools, producing a variety of patterns of output. PG loosens the restriction of analysis to configurational syntactic formalism allowing patterns of syntactic action intent to more simply and directly account for a variety of phenomena.

11.3. Evidence from Meta Reference

John Ross raises a point of direct interest to the hypothesis that intentional tools underlie human language competence. He notes a problem in (Ross J. , 2013).

One mystery squib of mine was a question: what is the source of that in this sentence: “The rules of Clouting and Dragoff apply in that order.”?

The sentence implies a decision and action regarding which of conjoined terms to order leftmost. This evidently reflects an intentional tool \$specifyConjunctOrder, and 'that' must refer to this ordering, i.e., to the ordering actioneme itself. This shows that a process of

linguistic structure formation can be self-aware and refer to itself at the level of sentence formulation. The referent of ‘that’ is direct, incontrovertible evidence that the intentions of actionemes exist.

If a linguistic structure refers to an action, such as ordering, then that action is evidently real and must have taken place. Syntactic structures undergo a process of construction which is creatively improvisational and, per need, self-conscious and self-referential. Pure syntax implements formations in a contained generative automaton. In PG, purposeful directives trigger structure generation so may be conceptualized as cognitive elements.

11.4. Basic Constraints in Attention Constructions

This section deals with three types of construction intended to draw differentiating attention: focus, contrast and exclusion. It demonstrates that specification of intent in rule formation, per its evident presence, leads to straightforward explanations for sets of otherwise insufficiently explained ill-formed sentences. In PG, these would not be instigated due to incompatible intents at cross purpose.

Cleft and Pseudo-Cleft constructions are documented in many treatments of English syntax, illustrated, for example, by (McCawley, 1998) p. 66, where the underlying structures are described as “far from clear”:

- (36) I gave a watch to my brother.
- (37) *It was a watch to my brother that I gave.
- (38) *What I gave was a watch to my brother.

These contrast with acceptable clefting (our examples):

- (39) It was a watch I gave to my brother.
- (40) It was to my brother I gave a watch.
- (41) What I gave to my brother was a watch.
- (42) Who I gave a watch to was my brother.

It is evident that these (trans)formations exist to place material in a focus position, but exclusively structural rules of syntax exclude a functional purpose. We posit the actioneme, \$giveFocusToSalientElement, associated with syntactic focusing (trans)formations. Those sentences attempting to focus more than one element at a time are ruled out by a common-sense constraint.

Single Focus Constraint (SFC)

Given that the purpose of a focus construction is to bring an element to the foreground in front of other constructions, it is counterproductive to focus-transform more than one element. Focus on two elements is self-contradictory and detracts from the intended purpose to isolate a salient element. The focusing of two elements interferes with the proper focusing of either.

The choice between (11) and (13) themselves may or may not involve some degree of equivalence and free variation but, more likely, there are also differentiating intentions at work. These are beyond the scope of the present paper.

Simultaneous attention items involving contrastive stress can in fact cooccur, but these are different from focus. They reflect implied negation or seek to counter a lack of awareness. Often, one misapprehension at a time is addressed, but cases with double contrastive stress (*MARY hit JOHN*) can occur. The Single Focus Constraint is not contradicted by this, since contrastive stress, purposed differently for contrast, differs from focus for salience. Contrast is a manner of exclusion, and two simultaneous exclusions are not in conflict.

Another exclusive attention item, ‘only’, meaning ‘nothing else’, provides independent support for a variant of the SFC, as illustrated by data from (McCawley, 1998) p 68. Contrastive stress, itself a mechanism of attention, is marked by underlining.

- (43) John only put flowers in the vase.
(44) *John put only flowers in the vase.

Here we see two attention actionemes involving exclusion, ‘only’ (\$assertNoOther), and contrastive stress (\$assertThisOverThat) independently insinuating two different types of attention in the same sentence. When ‘only’ is pre-posed and brings attention to the entire verb phrase, it can co-occur with contrastive stress on the subordinate locative phrase as a compatible narrowing of attention that does not conflict with the larger one. But when ‘only’ pits the direct object against contrastive stress on the locative phrase, two coordinates at the same level, they conflict and are not compatible. In this case, a corollary of the SFC operates within the verb phrase.

Overlapping Exclusion Constraint

Rule out multiple attention devices involving exclusion when they occur at the same level of predication, which would dysfunctionally divert attention each from the other, allowing their combination only when one exclusion is superordinate and inclusive of a narrower one so that a *refinement* rather than conflict is provided.

Multiple attention elements can conflict but also be compatible when one reinforces another as a refinement. This illustrates the logical simplicity and directness of intention analysis.

11.5. Cross-over Phenomena

Sentence acceptability patterns can be examined to determine whether they are spurious, epiphenomenal, and/or artefactual due to analysis restricted only to the level of morpho-syntactic structure. Some solutions confined to syntax patterning can yield to simpler, more explanatory natural accounts at the level of intentional actions.

Some well-known Cross-over Effects (Postal, 1971) appear to be candidates for this reanalysis. PG offers an entree into the many unresolved issues for cross-over effects. The following present a sampling: (Potts, 2022) (Bhatt, 2004). The analysis below offers an

initial illustration of the simpler viability of the PG level of analysis in place of complex syntactic contrivances.

Consider crossover phenomena in the following. (Wikipedia, n.d.) Words with subscripts refer (intentionally) to the same person.

(45)

- a. **Who**₁ said **he**₁ was hungry? – Crossover absent, intentional coreferential reading available
- b. ***Who**₁ did **he**₁ say __₁ was hungry. – Crossover present (strong), intentional coreferential reading unavailable

(46)

- a. Who told **Jill**₁ that Fred would call **her**₁? – Crossover absent, intentional coreferential reading available
- b. ***Who**₁ did **Jill**₁ say that Fred should call __₁? – Crossover present (strong), intentional coreferential reading unavailable

(47)

- a. **Who**₁ will call **his**₁ mother? – Crossover absent, coreferential reading available
- b. ?**Who**₁ will **his**₁ mother call __₁? – Crossover present (weak), coreferential reading unlikely

(48)

- a. **Which student**₁ called **her**₁ instructor? – Crossover absent, coreferential reading available
- b. ?**Which student**₁ did **her**₁ instructor call __₁ - Crossover present (weak), coreferential reading unlikely

The reading of the a-sentences is acceptable. For only the unacceptable b-sentences, the wh-word moved and crossed the coreferential nominal to the sentence beginning. Is crossover the real explanation here, or artefactual and insensitive to separate factors? This configurational patterning is subject to a functional solution based on what the speaker is trying to do.

In the b. cases, there is an intentional co-reference: the transcribed gloss even uses the term ‘intentional’, illustrating that intentions are available to linguistic analysis as fundamental data.

Conspicuously, we see that only in the b sentences the interrogative WH word refers to a nominal position which is coreferential to the underscore trace which is itself co-referential.

The nominal in the position of the underscore trace refers back in co-reference so is, in a referential sense, known. It asserts a known reference back to an antecedent element \$assertKnownReferenceToElement. The key is to observe that wh-words posit an unknown variable: \$declareUnknown, which is the entire interrogative point of their presence in the sentence. This allows an operative explanation: it is straightforwardly counterproductive and contradictory to declare an unknown on a known reference.

In the a-sentences, there is an unknown reference to an unknown, which does not involve contradiction because the unknown reference is directed toward an unknown target. For the b sentences, it is illogical to declare unknown what is known by virtue of a co-reference.

What is the speaker trying to do? There is a constraint on intentional construction of

sentences. The speaker would not in normal discourse do two contradictory things at once.

11.6. Poetics as an Argument for Psychological Reality

In the Jakobsonian tradition (Roman Jakobson, 1987) (Jakobson & Levi-Strauss, 1962), whereby stylistics encroaches as a core linguistic topic, we propose intentional actions as essential tools for stylistic effect in poetry.

By way of inspiration, we cite the words of former U.S. Poet Laureate, and consummate man of letters over 6 decades, Donald Hall (p. c.):

I've always considered my poems to consist of actions ⁷

This harkens back perhaps to the habit of Robert Frost in reference to his public readings, where he speaks of “saying” a poem, rather than “reading”. Linguists will readily recognize that ‘saying’ is a direct action not at a removed representational level as in reading.

For the PSH, the structure of a poem cannot be comprehensively mapped or analyzed without breaking it down into the intentional actions involved.

Consider Blake’s poem “Tyger” which John Ross (Ross J. R., 2000) has carefully examined linguistically for poetic structure. A hallmark of his work is the discovery of what he calls the ‘corridor’, a sort of artistic column which is a repetition of structure in successive lines, so that a vertical pattern of recurrence sets in relief stacked corresponding items and offsetting horizontal patterns.

Structure emerges e.g. in the column of alliterations per Ross's insightful work, but there are also stacked actionemes, as will emerge from illustrations below.

Actioneme effectors in this poem are reflected on the surface as a series of wh-words, but if left as only syntactic features, these cold configurations of labeled hierarchies cannot do required duty to bring out the structure or impact of inexorably mounting uncertainty, which is the heart of the poem. If one considers Blake's poem as a reflection of superficial wh-word alliteration alone the result is a surface structural analysis faithful to syntax but unconnected to a core impact in whose emotional potential we experience the essence of the poem.

The limitations of syntactic structure can overlook what the poet seeks to do to the reader. An artfully aggressive set of gentle emotional actions is missed.

It is a robust test of PG whether it can in part explain the manner or enablement of verbal art. A poem might not so easily be made just from phonology and lexical-configurational syntax alone, but could reflect a series of impactful intended actions.

Examining the poem, if we posit a linguistic action, an intention effectuator (‘actioneme’) \$declareUnknown (alias \$positVariableToResolve) underlying each wh structure, the actioneme alliteration jumps to the eye, and can be seen in harmony and counterpoint with phonological alliteration. We have annotated the poem itself to reflect this.

The Tyger

⁷ Personal communication

Tyger Tyger, burning bright,
 In the forests of the night:
 [What] immortal hand or eye, \$declareUnknown
 Could frame thy fearful symmetry?

In [what] distant deeps or skies, \$declareUnknown
 Burnt the fire of thine eyes?
 On [what] wings dare he aspire? \$declareUnknown
 [What] the hand, dare seize the fire? \$declareUnknown

And [what] shoulder, & [what] art, \$declareUnknown,\$declareUnknown
 Could twist the sinews of thy heart?
 And [when] thy heart began to beat, \$declareUnknown
 [What] dread hand? & [what] dread feet? \$declareUnknown,\$declareUnknown

[What] the hammer? [what] the chain? \$declareUnknown,\$declareUnknown
 In [what] furnace was thy brain? \$declareUnknown
 [What] the anvil? [what] dread grasp, \$declareUnknown,\$declareUnknown
 Dare its deadly terrors clasp!

[When] the stars threw down their spears \$declareUnknown
 And water'd heaven with their tears:
 [Did he] smile his work to see? \$declareUnknown
 [Did he] [who] made the Lamb make thee \$declareUnknown,\$declareUnknown

Tyger Tyger burning bright,
 In the forests of the night:
 [What] immortal hand or eye, \$declareUnknown
 Dare frame thy fearful symmetry?

There is an actioneme behind each of the wh words corresponding to an action of asserting a looming unknown. The \$declareUnknown (alias \$positVariableToResolve) actioneme represents a Rossian corridor that overlays the wh word syntactic column. It is anathema to think of a poem as constructed by a process devoid of fervor for artistic action, and this requires adding the denouement of intent to structural analysis of poetry. The repetition of the affirmation of the unknowns is near the heart of this poetic creation.

There is a resonant rhetorical effect too from the presence of repeated questions around an integrated theme. \$accumulateRelatedQuestions is a second order self-referential actioneme which builds the literary tension through the poem down through the actioneme Rossian column. The syntactic and intentional patterns interplay also with the phonological. To attribute the poem's power to the colder insertion of wh items alone, is to restrict analysis it in a way that for poetry lacks the essential artistic emotional dimension. It is essential for structural stylistic analysis to step beyond the mechanics of structure and configuration.

There is an experience in reading the poem, verifiable by surveying sensitive readers of poetry, that not only is not reflected, but cannot be reflected, in any theory lacking the

actioneme. Is there sufficient evidence for the reality of this \$declareUnknown (alias \$positVariableToResolve) actioneme? Certainly, because any sentient reader of the poem must recognize that the essence of the artistic experience is the repetitive and accumulative pounding of the mysterious unknowns. We cannot escape Blake's intent. This is not a matter of theories of linguistics or poetics but simply a fact of the data, which can be independently verified. It is perhaps unprecedented to cite an artistic experience as motivation for a syntactic approach but, it is offered here as focused and verifiable evidence.

Without the actioneme there can be no truly comprehensive analysis of the rhetorical method or the poetic process. The subtle action-based re-framing of the wh-word occurrences enables us to represent the fact that Blake sends artistically crafted thunderbolts from the utilitarian cognitive instruments.

The actioneme \$declareUnknown (alias \$positVariableToResolve) has significant effects in stylistics, well apart from everyday utilitarian syntactic considerations. To deny it would be as to tell a viewer using a new higher power telescope that they are not in fact seeing what they see since the viewed objects do not appear in existing maps of the skies

11.7. Verb Subcategorization by Certainty for Unified Thinking

Next, we examine challenging data that threatens the viability of an exclusively structural pure syntax solution, to find a simple system underlying a set of sentences. Structural devices are not necessary when there is evidence of incompatible cognitive intents that would reflect disunified and unworkable sentence planning if they were to cooccur. There is a rational constraint against incompatible intents to prevent such sentences from being generated.

In the process of verbal complement subcategorization, separate intents can activate separate structures for verbs and their complements. These must be compatible when used in tandem.

While verbs are subcategorized for propositions, exclamatives and questions, their licensing for complements versus noun phrases is separate, as illustrated below from (Johnson, 2007), where a surfeit of complicated, interlocking, and less than fully resolved proposals suggests susceptibility to a simpler level of representation.

- (49) a. John asked me what the time is/the time (Question)
- (50) b. I'll assume that he's intelligent/his intelligence (Proposition)
- (51) c. Bill couldn't believe how hot it is/the heat (Question)

- (52) a. John wondered what the time was/*the time (Question)
- (53) b. I'll pretend that he's intelligent/*his intelligence (Proposition)
- (54) c. Bill complained how hot it was/*the heat (Exclamative)

That categorial selection evidently cannot be derived in a straightforward manner from semantic selection classes. This suggests an analysis proceeding, not in terms of traditional semantic categories, but function and purpose. Verbs are instruments designed for purposes, so it is elemental that they might be intended for asking, asserting, doubting, questioning,

exclaiming and so forth. These are prevalent aims in sentence utilization. Classification by function emerges from observation of use, which facts reveal that the licensing of noun phrases reflects an action-intention level of analysis.

While 'ask', 'assume', and 'believe' involve complements that are indifferent with regard to certainty, 'wonder', 'pretend', and 'complain' require complements of continuing uncertainty. These reflect the linguistic actionemes \$certaintyIndifferent and \$certaintyNotResolved, respectively. Further, the nominals, “the time”, “his intelligence”, and “the heat” reflect \$certaintyResolved since nominalization indicates an established state of affairs. In fact, a nominal is usefully viewed as a lexical packaging strategy allowing established certainties to be summarily presented. In contrast, situations of uncertainty benefit from the increased flexibility of the uncompact expanded syntactic descriptions in a full clause that has not been nominalized.

These factors are operative here. Only a verb that is insensitive to complement certainty allows both types. Verbs requiring unresolved certainty will only allow a consonant complement. The patterns are explained in a direct manner: a complement with unresolved certainty is, by utilitarian fiat, only selected when the controlling verb is compatible with that same valence of certainty. Presupposition of uncertainty coincides with selection for uncertainty; otherwise, generation would not be rational.

This is further illustrated by the following data (p.88-9). In the first set we observe verbs indifferent to complement certainty.

- (55) Mary promised me that she would sing.
- (56) Mary promised me the ring
- (57) Jerry told me that he can't stand Mary's singing.
- (58) Jerry told me the story.
- (59) Sheila showed me that she cares.
- (60) Sheila showed me her concern.

Contrast those with the following verb requiring a complement of unresolved certainty:

- (61) a. Mary persuaded Bill that he should go.
- (62) b. * Mary persuaded Bill the fact.

A tool of resolved certainty (nominal complement) does not pair naturally with a tool of unresolved certainty (*persuade*): operational classes are not co-selected when they work in opposition. An account for such data by means of syntactic configuration alone cannot cover linguistic intent. These processes to manage uncertainty reflect a deep functional impetus in human language to arbitrate what is known and what is not known in detail, and known for certain, so they can be expected to be prevalent in data patterning.

Subcategorization differences in verbs, such as COMP vs. OBJ for clauses and NPs, provide nomenclature and capture syntactic generalizations, but a question remains how data can be accounted for in an explanatory functional way. While feature checking and/or case

assignment affords a partial explanation, we are left here too with the question *why* these might restrict as they do. Separate work in progress addresses the role of *redundancy* for successful communication in noisy channels, and how it relates to syntactic structure. Many syntactic processes tease such functional questions. For example, if 'complain' anticipates no Case feature in its complement, it might be viewed as triggering a prepositional case-marker, but this immediately surfaces the question, *why*? Detailed investigation of this is beyond the scope of the present paper.

The unacceptable sentences reflect prohibition against the disintegration of thought resulting from a dysregulated flip within a sentence from one way of thinking about certainty to another incompatible one. Were one to set up an attitude for uncertainty, then abruptly release that context, to adopt the opposite attitude, it would project an irrational lack of integrated thinking. It is helpful to think of these incompatibilities of intent as violating a Unified Certainty Constraint on linguistic intent.

11.8. Complement versus Adjunct in Noun Phrases and Definitional Integrity

There are constraints on the application of intents beyond their inter-compatibility. Some information is definitional for a word⁸, in the sense that it is essential to the delineation of the term. We consider the contrast between complements vs. adjuncts as presented in (Carnie, 2007, pp. 163-170) from a functional perspective. In case of a modifier on essential information, the word is not then further modifiable by a non-essential incidental/circumstantial predicate.

Consider the semantics of what essentially makes a thing a book: having something like potential reading material on pages. This feature is essential, contrasted with many incidental variant features of books. A book can still be a book with or without a (red) cover. Yet it must have readable material of some type: poems, gambling bets, accounting records, etc.

When the type of essential material has a modifier, there cannot also be an intervening ancillary detail:

- (63) The book of poems with a red cover
- (64) *The book with a red cover of poems.⁹

The complement 'of poems' modifies an essential part of the definition for a book (reading material). Modification of the definition must remain contiguous; incidental modification cannot intervene:

- (65) It's the same book of poems with a different color cover.
- (66) *It's the same book by a different author with different content on a different subject of poems.

⁸ To avoid bringing in 'intension' where confusion might result reading quickly.

⁹ Situations where this might be acceptable, such as in a court of law where a book with a red cover is in evidence effectively bolster the analysis, especially since special intonation is required.

A book description may include poems modifying an essential feature, but color, author, content and subject are incidental, not essential.

This motivates an actioneme \$modifyEssential ('of X').". If we attempt to instantiate or elaborate a noun beyond essential definition, with decorations of non-definitional, incidental material, (\$addDescriptionBeyondEssential) there is a constraint:

Definitional Integrity Constraint on Locale Priority of Essential Elaboration

Do not apply a tool elaborating a definition when the term is separated by non-definitional material. This avoids fragmentation and dispersal of defining information.

This practical constraint is evoked in a crude metaphor: one wouldn't apply a foundation primer coat to seal the underlying material after the application of a decorative finish coat of paint.

Pure syntactic treatments handle these cases by invoking a difference between a complement and an adjunct to the verb. By providing a functional explanation why that distinction might operate, PG extends and complements an analysis of form, identifying only the pattern and configuration.

The PG analysis is further supported by Carnie's observation that where there can be multiple adjuncts, only a single complement is possible. The book with a red cover by Burns.

(67) *The book of poems of fiction.

In PG, it is contradictory to intend two essentially different things.

This illustrates how direct PG solutions become available beyond the limitations of a framework using only structural syntax.

The intentional selection of tools by the speaker is constrained not just by relative compatibility, but also by prioritized ordering and arrangement. Modifications of essential, definitional aspects must preserve contiguity by separating any incidental, circumstantial modifications. This preserves the hierarchical integrity of fundamental elements. We refer to this as the Definitional Integrity Constraint.

11.9. Wallace Stevens' Poetry

A well-known poem by Wallace Stevens' illustrates further the need for actionemes, beyond syntactic mechanisms, to account for artistic effect. This is drawn out clearly in a process already evident in the first verse:

Thirteen Ways of Looking at a Blackbird by Wallace Stevens
(first poem/stanza of 13)

(68) Among twenty snowy mountains,

(69) The only moving thing

(70) Was the eye of the blackbird

The larger poem, as it moves from and beyond this beginning, displays many levels of structure. We leave these various levels of complexity and artistic construction aside, to focus on one pattern of striking linguistic action.

In these three deceptively simple lines, there is a startling contrast between the first and second, then further contrast, in the same dimension, between the second and third. The psychological shock is from sudden aloneness in the context of wide horizons. The three lines twice hurtle us with impact from a wider view to sudden stark detail in high granularity.

The question is where the emotional/visceral impact and eventual fame of these lines come from? We can understand the effect by considering that the poet's words are forceful linguistic actions with simultaneous overlapping impact in at least five separate dimensions. This is evident from mapping the principal actionemes in the first stanza.

Perspective Dimension: Wide Panorama => A Dot

Among twenty snowy mountains,	\$widenHorizonToVastPerspective
The only moving thing	\$isolateNarrowingFocus
Was the eye of the blackbird	\$narrowFocusToMinutePoint

Scale Dimension: Vast Enormity => Smallest Dot

Among twenty snowy mountains,	\$describeVastCollection
The only moving thing	\$focusSingleObject
Was the eye of the blackbird	\$zoomToMinutePoint

Gestalt Dimension: Background => Foreground

Among twenty snowy mountains,	\$remoteBackgroundOfVastness
The only moving thing	\$midgroundSingleMovement
Was the eye of the blackbird	\$foregroundMinuteSingleDot

Activity Dimension: Serene Tranquility => Minute Single Movement

Among twenty snowy mountains,	\$vastStillness
The only moving thing	\$isolateSingleMovement
Was the eye of the blackbird	\$minuteActiveSingleDot

Color Dimension: White Background => Black Dot

Among twenty snowy mountains,	\$presentVastStillWhiteness
The only moving thing	\$contrastFocusSingleMovement
Was the eye of the blackbird	\$presentMinuteBlackDot

These are aggressive emotive actions seeking, from simple representations, impact on five dimensions simultaneously. A sense of awe results when mutually reinforcing actions are directed at us on five levels at once.

By isolating and characterizing the actionemes, we make explicit the multiple overlaid reinforcing patterns implementing structure in the poem. Each pair is an instance of the strategic poetic actioneme, \$makeStarkContrast. The instances reverberate, one against the other, resonating and reinforcing one another.

In support of this claim that artistic effect can involve multiplexing reinforcing actions,

consider the words of the preeminent American poet, Robert Frost, advising his daughter on her own poem:

“You could stuff more into that line.” (Grade, 1972, p. p. 57)

To the extent these intended actions are evident from the experience of reading the poem, doubt disappears about the psychological reality of intentional linguistic actions as elements of language competence. How might the stylistic actions of poets ever be properly analyzed if linguistic theory does not advert to a most basic intentional aspect of linguistic generation?

11.10. Postal Puzzles

Paul Postal has noted the failure of theoretical syntax to account for two sets of profoundly puzzling data. (Postal, 2014) Where observed data of purposeful intent can explain a phenomenon that is otherwise unexplained it validates the PSH.

11.10.1. First Paradox

We will break the problem sentences out by actioneme, observing two distinctly different types of intended action as explanations for patterning of the verb ‘reach’. Verbs can serve quite different actions according with the intent of the speaker.

Two Types of Assessment Frameworks:

\$assessAgentActionSuccessOnPatient = assessing agent effect on the patient

\$reportOnAgentActionTowardGoalSuccess = reporting agent effect on the patient

\$assessProcessGoalSuccess = assessing the goal of a process, ignoring agency

\$reportOnPatientEffectInGoalSuccess = reporting on the goal of a process, ignoring agency

Here is the ‘paradoxical’ data that Postal finds unexplainable:

- (71) The director never reached Adam
 - \$assessAgentActionSuccessOnPatient
 - \$reportOnAgentActionTowardGoalSuccess
- (72) That book never reached Adam.
 - \$assessProcessGoalSuccess
 - \$reportOnPatientEffectInGoalSuccess
 - (Lacks agency)
- (73) Adam was never reached by the director.
 - Passive=\$promoteAgencyPatientToFocus
- (74) *Adam was never reached by that book.
 - No agency component, i.e., a patient construct lacking salient agency.

The sentences are annotated with actionemes including the passive (trans)formation tool, which has the purpose/intent of promoting a patient participant in an agency event to the front focus position: \$promoteAgencyPatientToFocus: When a structure does not include salient causal agency, the passive tool cannot apply. In the last example, there is no role for the application of the (trans)formation with its input requirement unmet.

Agent Front Focus Tool (Passive) \$promoteAgencyPatientToFocus

Promote the agency patient participant to front focus. As a mechanism specified for focus in a required circumstance of salient causal agency, this tool cannot otherwise operate.

We provide a wider functional explanation of this constraint at the end of the next section.

11.10.2. Second Paradox

For a second data set, examples are annotated to reflect how agency in an Agentive-Goal Raising (trans)formation tool operates to account for syntactically perplexing alternations. Agentive Goal raising cannot apply if there is no agency.

- (75) Adam was difficult for the director to reach
\$AgentiveGoalRaising requires an agent
(director reached Adam: an agent)
- (76) *Adam was difficult for that book to reach.
No \$AgentiveGoalRaising operation without an agent
(book reached Adam: no agent)
- (77) Texas was difficult for him to reach
\$AgentiveGoalRaising if there is an agent.
(he reached Texas: an agent)
- (78) *Texas was difficult for the book to reach
No \$AgentiveGoalRaising without agency.
(book reached Texas)

Similarly, the ‘reaching of x by y’ and ‘x is unreachable by y’ constructs require an agent participant:

- (79) the reaching of Adam by the director
(80) *the reaching of Adam by that book
- (81) Adam was unreachable by the director.
(82) *Adam was unreachable by that book.¹⁰

¹⁰ This related data requires further analysis not undertaken here:

a. The director didn't reach Adam although she did Louisa.

We account for the data by positing that x as goal requires y as an agentive participant. Is this merely a re-coding of the facts of the case, or is some principle of language reflected? The answer follows from a functional interpretation of the structures and processes.

- Why does goal raising require an agent? Evidently, the goal is a subsidiary feature to agency: a goal is determined, by and relative to, the agent.
- What is a focus construction? Focus formation promotes an element to salience relative to some other element.

Accordingly, there is a general constraint, the Relative Promotion Constraint, whereby there is no purpose in promoting an element relative to some other element which is not in fact present. Additionally, this constraint evidently explains the data patterns of the previous section, differing only in that the patient is advanced rather than the goal. In evident ways we do not address here, this functional constraint also supports simplified parsing and minimizes garden path interpretations.

Postal's stated purpose, to present paradoxes which configurational syntax has been unable to address, serves to show that analysis based on transcriptions of intentional actions offer simple and direct empirical explanations for otherwise mysterious processes.

11.11. Floated Quantifiers: Complexity from Backtracking, Dislocation, and Redundancy

In this section we show how intentions in a functional context conspire to avoid three types of undue complexity for parsing and interpretation. These illustrate the role of intention for managing complexity in natural language syntax:

- Garden path constructions requiring interpretation backtracking
- Complex search for interpretation due to dislocation
- Useless redundant structure

11.11.1. Garden Path Backtracking

PG resolves syntactic floating quantifier behavior for puzzling data patterns identified in (McCawley, 1998, p. 98 ff). The English quantifiers 'all', 'both', 'each' do not behave like 'most', 'one', and 'many', since they permit 'floating' from a subject NP to a position to its right:

- (83) All/Most of the Chopin etudes give me great pleasure.
- (84) The Chopin etudes all/*most give me great pleasure.
- (85) Each/One of the guests made a speech.
- (86) The guests each/*one made a speech.

b. *That book didn't reach Adam although it did Louisa.

- (87) Both of Tom's hands were filthy.
(88) Tom's hands were both filthy.

A plural noun phrase, apart from modification, carries a default interpretation of totality. A functional account observes two intention categories contrasting totality with less than totality.

- $\$assertTotality$ for 'all', 'both'; and $\$assertItemIterationOverSet$ for 'each', encompassing $\$assertTotality$ through the parts.¹¹ These compatibly apply both before and after the plural noun phrase.
- In contrast, 'most', 'one', and 'many' restrict membership to less than totality ($\$assertSubset$). If post-posed as modifiers, misleading, contradictory constructs result in garden path discord with the prior noun phrase, having presented first, as a default, an interpretation of totality.

We characterize the limitation as a constraint:

Advance Notice Quantification Constraint (ANQC)

Place a restrictive set category quantifier before, not after, the plural noun phrase it modifies to adjust the implied totality of a standalone form. This precludes later backtracking to reverse the interpretation from a prior one. (Typical of PG constraints, this is an application of the general principle of avoidance of conflicting constructs at cross-purpose.)

11.11.2. Complex Interpretation from Dislocation

We see a corresponding restriction in McCawley's further data concerning quantifiers as they occur with direct and indirect objects:

- (89) Each of/all/both the visitors gave the children a dollar.
(90) The visitors each/all/both gave the children a dollar.
(91) The visitors gave each of/all/both the children a dollar.
(92) The visitors gave the children each/all/both a dollar.
(93) The visitors gave the children a dollar each/*all/*both.

(Note the ambiguity in the last example, orthogonal to the discussion: 'each visitor' vs. 'each child'.)

The acceptability of *each* in the last sentence is explained by observing that it refers, beyond just $\$assertTotality$, to an iteration over individual items in the entire set, i.e., visitors or children. Not just extent, but the distribution manner is specified for the entire predication, modifying at once the verbal action and its reception by patients.

¹¹ In this account it is logical to think of the predication involving an iteration over a set of individuals as coextensive with, and equivalent to, the predication on the total set established in the noun phrase, so they are meaning-preserving in a basic sense even while they add a dimension of focus on the iteration.

Final placement as a sentential adverb is acceptable because the larger sentential predication is modified: the overall process of distribution by an agent to recipients. There is no conflict or misapplication of intentions.

In contrast, there is an intention roadblock when ‘all, both’, nominal totality designators, occur post-posed in final sentence adverb position. This dislocation is a late inopportune placement to restrict, modify, or emphasize a nominal, given its previous interpretation in the local construction of the noun phrase. The incompatibility here involves interpretation complexity when an intentional formation is built in the wrong place in a structure. Undue complexity arises in non-local lookback compared to local interpretation at the nominal where no search is required. An unframed bare afterthought creates parsing and interpretation complexity for semantic adjustment that becomes necessary for displacement. This burden of complexity is evident from the following acceptable sentence illustrating the need for syntactic support for interpretation in the case of late emphasis.

(94) The visitors gave the children a dollar, (to) ALL/BOTH of them

The acceptability of this paraphrase illustrates the role of syntax to manage complexity. Without the syntactic framing of the paraphrase, there is a search burden to identify the nominal to which the quantifier applies. We propose a corollary to the ANQC: Do not displace a structural intention to where it creates unnecessary complexity for parsing and semantic interpretation.

The ANQC illustrates that complexity management can be a principal driver of syntactic form, a larger topic which we postpone for present purposes.

11.11.3. Useless Redundant Structure

(McCawley, 1998) p. 101 cites further perplexing data for quantifiers after objects which have been pronominalized:

- (95) Arrau played them all.
- (96) *Arrau played the Beethoven concertos all.
- (97) Arrau played them both.
- (98) *Arrau played the Brahms concertos both.
- (99) I have listened to them all.
- (100) *I have listened to the Beethoven sonatas all.

Plural pronouns involve an action, \$referToPreviouslyEstablishedSet, without specifying whether the set is a part or totality. As unspecified, they cannot conflict with designators of totality such as *all* or *both*. In contrast, definite noun phrase such as ‘the Beethoven sonatas’ or ‘Brahms concertos’ explicitly designate the totality of items. It is a misuse of \$assertTotality (‘both, all’) to apply it redundantly for no effect

after the fact, given the intrinsic default specification of the noun phrase. This illustrates a rational constraint against using a tool where it is ineffectual, lacking utility:

Redundant Intention Constraint (RIC)

Forego actions which would have no result in the context after a default specification.

This does not preclude a prior contrastive clarification of totality in advance, such as the acceptable “all the Brahms concertos”. This constraint may also be conditionally finessed, in one case, when emphasis is implemented (\$addEmphasis) by re-duplication of a structural action, extra-sententially after a pause, as in apposition with contrastive stress.

(101) I have listened to the Beethoven sonatas... ALL (of them).

11.11.4. Summary

PG provides functional explanations for a syntactically perplexing range of quantifier data. Undue complexity results from constructions that require interpretation backtracking, unnecessary search, or useless redundant structure. The syntactic component need not over-generate or impose burdens of filtering when functional constraints on intentional structure building preclude unacceptable sentences.

11.12. Implications for Basic Syntactic Structure

11.12.1. Intent Interacting with Syntax

What seems superficially to be only syntactic can often usefully be understood as rooted in structural intention.¹²

A question whether syntactic elements originate exclusively within the syntactic module, or are triggered by intentions, arises in the following data, where we observe the intentions \$indicateSpecific (‘the’) and \$indicatePossessor (‘’s’). These sentences from (Johnson, 2007) suggest a certain co-equivalence and functional relationship between some syntactic categories and underlying intention:

(102) * the Mary’s book

(103) * the the man’s toy

(104) * a the man on the moon’s nose

Just as a verb might not be expected to receive multiple subjects, indirect objects, etc., so

¹² We need not resort, however, to any overarching view which elements might be syntactic primes not triggered by intention, leaving many issues open for future research. We advert to various possibilities how an intention component and syntactic processing can be independently required as intermediations.

also a noun might not have multiple determiners selected from the set: {definite, indefinite, possessive}. There is only one slot for the determiner in the lexical compatibility matrix. This has been, generalized as a syntactic phenomenon: a noun can be proscribed for no more than a single determiner.

This example is particularly syntactic, but there is a connection to structural action. The relationship between syntax and intention is usefully viewed as functionally intimate. It seems redundantly inefficient and infelicitous, for example, that a noun would be subject to both \$identifyPossessor and \$indicateSpecific, since specifying a possessor tends itself to make the possessed element specific. Adding two specifiers redundantly, without additive effect, lacks purpose. It can also be contradictory when one is definite (possessor) and the other indefinite (indefinite article). The action of adding a determiner is subject to a constraint proscribing a duplicate or contradictory application by another action.

Yet languages can differ significantly in their functional application of specifiers, including co-occurrences in one that correspondingly are incompatible in another, indicating underlying differences. In Old English, the precursor of modern *the* included, at the time, the demonstrative function. Demonstratives do co-occur with proper nouns, as in *that Mary's book* where either two *Marys*, or something notable about Mary can be understood. There is extensive cross linguistic variation in how determiners can be combined. This has led to the positing of hypothetical structural formations to explain the variation. Consult (Hsu & Syed, 2019) for an overview. Beyond the functional analysis of English, we leave wider questions involving different compatibilities in other languages to future research. The conclusion here is that IS can provide alternatives to purely configurational solutions laden with hypothetical artifice by relying on simpler functional explanation but that intricacies across languages are involved that can be facilitated by further research comparing the syntactic and intentional approaches.

11.12.2. Fungibility of the Intent-Syntax Division

Underlying intent selection restrictions can be posited for what appears superficially to be a purely syntactic phenomenon, as in the following.

(105) * He ate should apples.

The obligation/probability modality marker *should* is applied to an object lacking applicability for either will or probability, creating incompatibility and conflict.

In another example, co-occurrence constraints and substitution classes (Johnson, 2007) lead to similar functional accounts.

(106) A very happy child

(107) The extremely large boat

(108) I have deliberately misled.

(109) I have noticeably erred.

(110) A deliberately angry child
(111) The noticeably large boat

(112) * I have very misled.
(113) * I have extremely erred.
(Johnson, 2007)

A key indicator of function is noted in how these *can* be expressed:

(114) I have very much misled.
(115) I extremely often erred.

Both 'very' and 'extremely' assert degree on some dimension:

\$assertExtremeDegreeOnDimension. The unacceptability of verbal modification is due to the absence of explicit dimensionality for the verbs 'misled' and 'erred', in contrast with 'happy' and 'large'. There can be no utility in modifying a dimension that does not exist.

Some items (*happy, large*) have inherent degree or extent, i.e.,

\$assertInherentDegreeDimension. For others, degree or extent needs to be expressed in an ancillary element of gradience. There is no utility in having

\$assertExtremeDegreeOnDimension unless degree or extent has been enabled e.g., via 'much'. These correlations follow from general constraints on the application of intents.

These possibilities too open questions for further research about the relation between intention and basic syntactic structure.

11.13. Intention Correlates with Syntactic Placement

PG models linguistic competence to formulate efficient and functional constraints on language generation. Questions about the correlation of intention with the syntactic component of linguistic competence emerge in many areas. In the following, we consider additional data patterns from (McCawley, 1998). Phenomena which present as purely syntactic can have evident connections to purpose and intent. Syntactic placement correlates with purposeful intentions.

Word order of auxiliary verbs illustrates fundamental syntax, as in McCawley's recitation that "passive 'be' cannot precede any other verb": (McCawley, 1998, p. 1)

(116) John has been arrested.
(117) *John is had arrested.

Beyond syntactic mechanisms, PG sheds new light from the perspective of underlying intentions. The phrase 'had arrested' asserts past action and implicates an agent without implying any additional stative copular predication. The 'is' copula, for asserting some characteristic of a nominal, calls for a complement to provide an attribute to ascribe to its subject. This ill-formedness reflects ill-begotten combined intents, trying at once to do

two disjoint actions. Neither provides resources which the other requires, nor meets expectations which the other demands. While syntactic, the data illustrates an intentional substrate. This situation can be viewed as either purely syntactic, or in terms of intention.

There are nevertheless cases where stipulative word order specification seems essential, demonstrating syntactic structure exclusive of linguistic intention: (McCawley, 1998) p. 2:

(118) I admire her.

(119) *I her admire.

(120) Je l'admire. 'I admire her.' Fr.

But, as we see, word order is not always without explanations of intent. Contrast the following data, where word order follows the lines of intention: (McCawley, 1998) p. 2

(121) I will go to Boston soon/tomorrow.

(122) I will soon/*tomorrow go to Boston.

(123) I *tomorrow/soon will go to Boston.

(124) Tomorrow/soon I will go to Boston.

Conditioning by intent underlies syntactic ordering for 'soon' and 'tomorrow'. For 'tomorrow', we observe the actioneme \$assertSpecificTimeOfFutureEvent, a specific expectation of time, while 'soon' asserts a more general expectation, \$assertGeneralExpectationOfEarlyFutureEvent.

These actionemes condition syntactic constituent structure. *'tomorrow go to Boston' and *'tomorrow will go to Boston' fail because an expectation of time specificity in 'tomorrow' is appropriate only for an entire proposition, including the subject, action and goal together. Subsets, 'I', or 'I will' cannot be separated in time; only the complete proposition can have temporal specificity if parsing is to be transparent and efficient? Placement of the adverb in an interior position controverts its utility by misleadingly creating a parsing miscue, as if the whole were subdivided for a reason, with the adverb applying only to some part, which it can't. Interior to the proposition, it breaks apart the wholeness of the integral material. This fragmentation is an action for which there is no rational intention. The specificity of 'tomorrow' implies a time certainty requiring the target to be packaged without counterproductive internal complexity.

The sentence 'I will soon go to Boston' has the less specific time adverb 'soon' placed in useful position, excluding the 'I will', in which there is no temporal imprecision, qualifying a verbal action not so precisely anticipated.

Similarly, for 'I soon will go to Boston', 'soon' prior to 'will go' allows compatible expectation of time between the adverb and the verbal. In general, since 'soon' is less specific, its placement is more flexible per applicability to predication parts.

This section illustrates again that syntactic patterning is congruent to sequences of intention. Syntactic placement clearly correlates with purposeful intentions for elements of construction even as it appears also to have in some cases independent status.

11.14. The Complex NP Constraint and the Syntax/Pragmatics Interface

In this section we consider an insufficiency in the work on Dynamic Syntax and the Pragmatics/Syntax Interface (Kempson, 2012) by not countenancing the PSH. Where purpose is implicitly evident in data sets, it has not been made explicit for theory, formalized as input features for sentence generation, nor even recognized as a principal driver of syntactic structure.

The syntax/pragmatics interface proposed by (Kempson, 2012) accords with both the PSH and proposals by Chomsky that the intentional/conceptual system can provide inputs to generation at any stage of sentence generation. Yet, its formative directives include only a semantic goal tree in propositional form *without* features of structural intent or purpose. Purpose is evident, but left implicit for core examples in the argumentation, e.g., where one speaker's syntax may be used to induce a congruent response (Kempson, 2012, p. 537):

- (125) Where are you going?
- (126) To London.

Alternatively, the speaker might have said:

- (127) I am going to London.

Although left implicit and *optional*, intentional purpose to collapse parallel structure for concision is evident in such alternations, but so also for those of a single speaker, apart from any conversational mechanism to trigger ellipsis: (Kempson, 2012, p. 523)

- (128) John saw Mary, and so did Bill (VP ellipsis)
- (129) John ignored Mary and Tom Sue. (Gapping)
- (130) John ignored Mary. Tom too. (Stripping)
- (131) John ignored someone, but I don't know who. (Sluicing)

Each co-exists with their verbose counterparts, lacking ellipsis, e.g., 'and Bill saw Mary'. The verbose alternatives demonstrate, as compelling empirical data, an intent to simplify. With or without the context of conversation, there is an evident motive to $\$simplifyParallelStructureForConcision$. This level of analysis is nowhere present in the proposed Syntax-Pragmatics interface. There is lacking a psychological instigation of an elliptical simplification process to capture the commonality of the alternations. In a model oblivious to evident speaker psychology, this dissociation introduces a measure of wasteful inefficiency and randomness counter to the pursuit of Minimalist precepts.

Further, Kempson looks to the data of ellipsis to motivate the absorption of putative syntax

into a fundamental semantic building process: “no level of syntactic representation other than that of growth of semantic representation”. (Kempson, 2012, p. 542) Without addressing the whole of the discussion, where it is insightful in various respects, the missed evident intent for ellipsis in the data presented undermines a core argument for the dynamic grammar proposal: that the syntactic Complex NP Constraint (CNPC) (Ross J. , 1967) becomes unnecessary when replaced by a constraint on the semantic building process. Indeed, this exclusion allows a conclusion that syntax generally is derivative from a semantic building process.

Consider Kempson’s core example:

(132) John interviewed every student that Bill had.

(133) *John interviewed every student that Bill ignored the teacher who had.

The CNPC has long been formulated in syntax: an element of a subordinate clause within an NP cannot have a relation to an element outside the NP. This imposition of syntax is argued as unnecessary if, alternatively, syntax emerges from semantic construction; ellipsis across complex NP constructions is precluded as semantic interpretation is built. The CNPC replacement is non-syntactic: “Any expression characterized as decorating an unfixed node, e.g., a relative pronoun, has to be resolved within that tree which that unfixed node construction step initiates ... hence it cannot be resolved in some tree only linked to that tree, and the island constraint is captured.” (Kempson, 2012, p. 542) This semanticized reformulation notably still requires a corresponding reformulated constraint.

Significantly, neither formulation, syntactic or semantic, embeds a functional explanation for why there should exist any such limitation at all. Yet, if we admit the evident empirical fact of an intent and purpose to simplify, a constraint falls out naturally and self-explanatorily. The ellipsis process implies, for both producer and receiver, a search space to inspect for reducible parallel structures. As the scope of the search space is increased to include additional syntactic elements via levels of embedding and predication, the matching task becomes less simple. What degree of complexity can simplification endure?

PG explains why the CNPC exists as a regularity of natural language. Structural purpose provides a rational constraint on intention:

Complexity Constraint on Simplification (CCS)

Linguistic processes to simplify must not introduce unwarranted complexity into the process.

We forego formalization via intention for present purposes given the essential point, that functional purpose is explanatory. Significantly, as a measure of nonlinguistic logic requiring no learning, the CCS improves the understanding both of rapid language learning from sparse data and support for Chomsky’s thesis of rapid step-function biological evolution. Some linguistic principles involve only general rationality and logic. Ross apprehended the phenomenon well as involving complexity, explained now here in PG as a functional process.

The importance of purpose relative to complexity is confirmed by the observation that there is no parallel constraint in the less complex VP (Bošković, 2015). Abundant evidence indicates that the constraint is one on complexity and searchability across a variety of complement constructions, not restricted narrowly to clausal complexity in the NP. A full formal treatment is beyond the scope of this paper, but the general conclusion is clear that the constraint is a limitation on purposeful simplification. The CCS is triggered by a register of features, including one for simplification, that is aware of complexity the sentence formation. In general, processes of syntax are oriented to management of complexity, so the CCS can be involved more generally than indicated here.

In the processes of simplification, Chomsky's most basic claim, that syntax is distinguishable from semantics, would seem to be confirmed and elucidated since the intent to simplify entails a restriction on the complexity of pure structure. Calculation on the form of a structural search space cannot be characterized as a feature of semantic construction.

Notwithstanding the foregoing, the perspectives of Kempson and Chomsky potentially merge to a degree in a conception of syntax performance as structural strategies for efficiently packing the elements of conceptual trees into linear output under conditions to manage entropic properties of symbolic representation such as complexity and uncertainty. This speculation for ongoing investigation includes processes which have clear purpose but are so grammatically automatic that residual intent is recessive and implicit.

These observations do not address any complement of Kempson's dynamic system, but show only that a core argument based on Ross's constraint fails to consider facts of intention, which alone can explain the existence of the constraint. The logic of dynamic grammar is oriented to discourse and conversation and the general idea of building up meaning from individual actions is conceptually aligned both with Merge and the PG observation that linguistic structures result from discrete structural intentions. Beyond this, the comprehensive idea that *all* syntax is progressively built up from propositional content, orienting to the content of a goal tree, ignores the evident intentions in linguistic parsimony and stylistics together with the purposes of managing complexity. The idea that "ellipsis can now be seen as making use of the different facets of context which the evolving build-up of interpretation give rise to" (Kempson, 2012, p. 543) sidesteps the important question why structures are made as they are in functional terms. This must be formulated to include intent and purpose.

12. Discussion: An Entree for Linguistics and the Social Sciences

PG complements structuralist analysis by using the data of purposeful intent to investigate functional explanations for syntactic patterning. It extends in degree and manner well into new areas beyond functional analysis of Prague School, the varieties of structurally functional syntax (Kuno, Halliday, Langacker), Lexical-Functional Syntax, Information Structure, and so forth. Since intent evidently saturates the instigations of syntactic structure, it is not unexpected that it should be of use to theoretical syntax, at a minimum in difficult and recalcitrant cases. If these dimensions have not yet been of major interest to linguistics, the purpose here has been to question that very fact. Many diachronic linguistic changes as well as variationist patterns might

be considered in a widened context of purpose for particular linguistic structures.

In a widened horizon, results can be of interest in cognitive and social science generally, providing a new entree to interface with syntactic theory. Wider entrance, opened to new investigations, is provided to the manifold rich manifestations of language use. Psycholinguistic methodologies can test the validity of intentional instigations in sentences and develop categories and formalisms for capturing linguistic intent while evaluating psychological reality. Anthropologists, already concerned with what speakers do with language, and its framing in cultural contexts, can access a level of systematic representation. Analyses of rhetoric and stylistics have clear connections to intention. Similar opportunities abound in sociology, and the social sciences generally, where markers of underlying intent can interact with the scientific processes formulated in each domain.

13. Summary

Evidence reflects two separate but connected domains, structural patternings and their underlying purposeful linguistic intents. We have provided a multiplicity of argument types to collectively address the Goals and Criteria we set out.

The crux for the PSH is whether optimal explanations for structural/configurational patternings must be pursued in that domain alone (together with semantic interpretation and mediated by hypothetical constructs) to the exclusion of underlying intentional-functional specifications. We have demonstrated compelling generalizations and explanations that emerge from the representation of purposeful intent. This enables a potential for specifications of linguistic intent to simplify theoretical mechanisms, to implement solutions more straightforwardly, and to offer complementary functional dimensions of explanation.

We have illustrated how constraints against incompatible, unnecessary and untoward intents can reduce complexity and entropy in syntactic operations. PG bolsters configurational and structural analyses discovered in a pure syntax approach by supplying new functional explanation for syntactic regularities. More comprehensive definitions for fundamental syntactic constructions emerge. Intention compatibility and feasibility constraints, where they preclude the instigation of malformed sentences, offer a core explanation for the learnability of natural languages from sparse and unrepresentative data in support of the Minimalist biological thesis.

Important questions remain that can only be addressed by further investigation beyond the initial observations presented here. There is promise that intention can be helpful in solving a range of the most challenging syntactic problems. Science abhors both complacency and finalization. The perspective of wider investigations of language beckons.

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