Pragmatax Tool Grammar: Refactoring the Generative Program
A pervasive action dimension for linguistic descriptions, theories and models [1] [2] [3]

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This is a dynamic document responsive to reader critique.
Comments and challenges are welcome for future versions.
Collaboration is welcome including all theoretical perspectives.
Companion analyses improving and advancing tool grammar concepts are welcome.
The extended version under revision is available from the author.

[1] We are deeply indebted to the incisive comments of readers who suggested constructive improvements even as the ideas presented here were sometimes at considerable variance with their own preferred working frameworks. We owe special thanks to John Hewson, Paul Postal, Vit Bubenik, and Pieter Seurens.
[2] We had considered an alternative title for this paper since it seeks to explain malformation: "A Review of Verbal Misbehavior"
[3] This paper may be considered sufficiently radical in perspective to suggest a possible range of reactions such as Gandhi once summarized. While even the hint of a comparison would be odious for a mere academic article having surely many faults, we wonder how far along Gandhi's continuum of acceptance the ideas in this paper might travel: "First, they ignore you. Then they laugh at you. Then they fight you. And then you win." This is the adventure, and the fate is uncertain.

There are more things in heaven and earth, (…),
Than are dreamt of in your philosophy.
- *Hamlet* (1.5.167-8)

Whatsoever may be the plays on words
and the acrobatics of logic,
to understand is, above all, to unify.
- Albert Camus *The Myth of Sisyphus*

Operative Motivating Hypotheses of This Paper:

Does the exclusion of linguistic intention and action from generative rules introduce artefactitious complexity and preclude the strongest possible natural constraints on characterizations of the human faculty of language?

Does the inclusion of intention in linguistic rules both enable solutions of otherwise intractable problems and otherwise enable a wider set of more generalized and more naturalistic solutions?

Does theorizing based on linguistic intent lead to thinner, simplified, more directly empirical argumentation compared to the indirections necessitated by complex syntactic analysis based on central configurational syntax?

Does the inclusion of linguistic intent in generative rules motivate the processes of Merge and Move as the essence of human language synax?

Contents

1 Abstract and Summary

Are there alternate paths to explanatory theories beyond Chomksy's programmatic axioms? We propose and motivate Tool Grammar, in which a sentence is an action, a performance wherein intention is central rather than syntax. 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 linguistic descriptions is thus enhanced by explicit field transcriptions of evident user action and intent using a controlled scientific vocabulary. Tool Grammar (TG) postulates that sentence generation exhibits linguistic cognitive actions most fundamentally and syntax processes more procedurally, parallel to but distinguished from the Chomskyan hypothesis that humans are fundamentally "syntactical animals". (Searle, June 29, 1972) The crux of resolution for this contrast is whether TG better can enable stronger constraints on the definition of human language than more rigidly syntax-centered accounts. We present and defend empirically transparent and radically penetrating mechanisms for constraining the notion of a human language in support of the primary Chomskyan goal of explaining infinite linguistic creativity from finite resources and rapid child language learning in the context of poverty of stimulus data.

Language has the external representation of meaning as a purpose and tools as a means of action. Natural constraints on the inter-compatibility of tools render many rules and constraints on configurational syntax unnecessary, since unacceptable sentences often reflect the incompatible misapplication of tools. A vast swath of linguistic ill-formedness can be attributed to structures involving incompatible intents. When syntactic phenomena are understood to be conditioned by linguistic action/intent descriptors, difficult problems yield to straightforward solutions: conflicting intents yield ill-formed sentences. When generalizations are sought at an incorrect and incapable level of representation, unnatural and unnecessarily contrived solutions unavoidably result. By incorporating intention action directives into linguistic structure building, syntactic problems generally acquire a facilitative pragmatic resolution: much of syntax is transformed into utilitarian cognitive pragmatics. Important fundamentals of syntax are reducible to a particular form of cognitive pragmatics and syntax is no longer so autonomous a component of linguistic competence. Much of the Chomskyan Weltanshaung and the resulting theories can be retained and revalidated, but much also is to be gained by refactoring the work product of linguistic science.

TG represents a sub-paradigmatic shift in syntactic theory to the extent it can be integrated to the generative program. Important Chomskyan tenets are revised but significant elements are retained. Poverty of stimulus, universals, ill-formedness, recursiveness, interpretation, generative

capacity, filtering, and so forth are reinterpreted in an alternative architecture of linguistic competence. Our arguments are launched by considering a range of critical issues in theoretical syntax plus a set of difficult unresolved problems.

The following examples provide a taste of how the intention of the passive tool can conflict with the intentions of other tools: the passive structure, drawing attention away from the agent, is vulnerable to conflict from a tool centering on the agent.

> Al visited the sick woman.
> The sick woman was visited by Al.
> What was surprising about Al was that he visited the sick woman.
> *What was surprising about Al was that the sick woman was visited by Al (him).

We observe incompatibility between tools in opposition, at cross purposes, to both add and take away special attention to the agent. This is a tip-of-the-iceberg example of issues that can be handled in a straightforward way if intention is represented in linguistic rules. When this approach is extended to many other areas of syntax, attractive and simplified solutions become available for a surprisingly wide range of problems. This paper presents a range of arguments from linguistic and poetic data that action intents are of the essence in a set of syntactic processes. When the intentions underlying structural decisions are examined, separate from the internals of syntax, semantics and pragmatics, all three maybe simplified, potentially increasing the constraints on what it is to be a human language.

The operative hypothesess of this paper include whether linguistic rules must include linguistic structural intentions, a theoretical position that has not heretofore been fully examined. From a preponderance of diverse cases involving linguistic problems that resist authoritative solutions, we demonstrate that optimal linguistic theory is inclined toward incorporation of components of linguistic action and intention. We present a set of problems in linguistic theory that require the dimension of structural intent for fully empircal solutions to emerge given that intentions are undeniable in the epistemology of language. The absence of this level of representation in syntactic theory is seen to account for difficulties in advancing the theory in linear progress toward more comprehensive coverage.

We conclude that the exclusion of linguistic intention and action from generative rules introduces artefactitious complexity and undesirably prcludes the strongest possible natural constraints on characterizations of the human faculty of language. The inclusion of intention in linguistic rules both enables solutions of otherwise intractable problems and enables simpler, more naturalistic solutions generally. Theorizing based on linguistic intent leads to thinner, simplified, more directly empirical argumentation compared to the indirections necessitated by complex syntactic analysis based on central configurational syntax. The inclusion of linguistic intent in generative rules points toward the processes of Merge and Move as the essence of human language synax?

2 Background: Pragmatax as Linguistic Action

Architectural work on large symbolic systems frequently leads to the observation that undue complexity arises when there is an attempt to capture and express regularities at the wrong level of generalization, i.e. where natural conditioning properties are inexplicit or unexpressed. A primary thesis of TG is that there has been excessive idiosyncratically contrived complexity and resulting instability in Chomskyan theories of syntactic competence when generalizations have been sought apart from the factors that condition them. This implies that superior solutions can be achieved at a different level of representation. The vast syntactic literature seeking explanations for which sentences of a language may or may not be acceptable can be reviewed for potential reanalysis if the fundamental reasons for linguistic structure formation are examined in detail. Syntax might be significantly reduced in a utilitarian context to cognitive pragmatics of a kind. TG offers the world of syntax to investigators with the mindset of cognitive pragmatics.

The origin of this paper goes back to discussions with an anthropologist finely attuned to the linguistic actions of a native language. As she gathered material and made progress on the phonology, morphology, lexicography, etc. of the language she was so carefully archiving, it seemed a gaping insufficiency that linguistics could not offer elicitation field tools for the vocabulary of social life that interested her. Linguistics offered methodologies for phonetic transcription, phonemic discovery and transcription, morphological analysis, syntactic description, and promising scientific frameworks for theory, but there was little tradition for recording or analyzing the semantics of the actions that are so obviously carried out in the process of speaking. This stood in stark contrast with the myriad expressions available in every language to characterize what a speaker is doing with words. Elicitation of semantic detail can be difficult, yet every field linguist asking what something means has likely known the experience of hearing rather what the speaker is doing when words are used. This suggests a dimension of semantics which is closer to the surface and easier to elicit and describe than the intricacies derived after difficult thought in a truth functional model theoretic semantics framework. TG assumes the validity of a particular methodology: when a linguist elicits or records data s/he could well write down an answer to the question what a speaker is doing when a certain form is used. What is the action?

Chomsky's massively influential generative program has fundamental attributes which are unassailable, but nevertheless extensible. Language is cut up into competence and performance to put scientific focus on cognitive ability, adding a divide and conquer strategy necessary in the midst of the overwhelming complexity of human language. It brings to center stage rapid language learning in childhood and the startling recursive creative potential of language, while also imposing empirical constraints on putative theories and mechanisms. Generative mapping, with its emphasis on formalization, testing, and minimal contrasts of sentence acceptability, provides discipline to guide hypotheses toward the counterexamples necessary for progress. There has been an extraordinary collection of distinctive facts and patterning effects for a large number of diverse language phenomena. Its methodology has been highly effective as a stimulant to scientific advancement, but can also entail forward interests involving new perspectives. For all the fecundity of the unfolding Chomskyan vision, theories have retained syntax, not semantics nor pragmatics, as the core focal center of language generation.[4] While the range of data has widened broadly, the area of focus, syntax, has remained narrow relative to the

[4] Paradigmatic and other systematic aspects of morphology have on occasion also been overlooked.

full range of operational linguistic phenomena. In TG we explore whether a shift in perspective might not be advantageous, wherein language is viewed not so much as centering around syntax as the structural action semantics of intentional purpose.

Among many dimensions of scientific challenge, the generative program has focused on the speed and ease of child language learning but has not so much set a paramount goal to explain why in the worlds' languages there should be such variability, or instability or ambiguity.

TG adopts the idea that elements of language are to be understood as having an intentional functional purpose. Elements of this idea have existed in linguistics for some time, generally involving the analysis of a relatively limited set of abstract functional concepts such as focus, theme, {fore|back}ground etc, TG is distinguished by placing an elaborated system of functional intention at the controlling generative core of language and elaborating a rich set of functional concepts/categories used to explain linguistic phenomena. We advert to prior work by a wide range of researchers, including Halliday's systemic functional approach (Halliday, 2004), lexical functional grammar (Bresnan, 2001), the psychomechanics and psychosystematics of Gustave Guillaume, Walter Hirtle and John Hewson (Hirtle) (Hewson), cognitive linguistics of e.g. Wallace Chafe, , George Lakoff, and Leonard Talmy (Lakoff) (Talmy), construction grammar of e.g. Charles Fillmore George Lakoff, Goldberg, and Ronald Langacker (LANGACKER, 1986) (Langacker, 1999), André Martinet's Functional Syntax: (Langue et Fonction, Paris : Denoël, 1969, ©1962, Studies in Functional Syntax, München, Wilhelm Fink Verlag, 1975, Syntaxe générale, 1985, Fonction et dynamique des langues, Paris, Armand Colin, 1989.), the Prague School, and so forth,, A goal of TG is to bring diverse elements of various theories into a unified, inter-compatible linguistic framework, while discarding orphaned beliefs disconfirmed by ongoing empirical work.

TG is compatible with, and benefits from, restricted elements of each of these traditions but distinguishes itself by extending the role of specifying linguistic intention to a much greater degree and in much greater resolution than has previously been proposed. It also seeks to integrate with Chomsky's generative program re-combining characteristics of various approaches at the same time.

Special mention should be made of Pieter Seuren's work on Semantic Syntax and his pioneering formulations of the computerized means by which semantic initiatives can result in syntactic results. His work showing how lexically driven patterns result in syntactically formed configurations in a computationally transparent style are helpful in conceiving the manner by which linguistic intentions might resolve into patterns of acceptable and unacceptable sentences. While our theoretical framework is different, we take from Seuren's endeavors the belief that linguistic theory is enhanced, not just by the notion of formalization emphasized by Chomsky, but by actual formal implementation as a generative computer program, which is arguably an optimum goal for formalization in linguistic theory.

Whereas various authors have shown overlap between the syntactic and pragmatic components of linguistic competence (Chierchia, 2004) (Horn, 2000), etc., our aim is to explore a reorganized view of linguistic generation based on the central concept of linguistic tools which are used to realize a generative component of linguistic intent. Rather than examine only the structural and configurational generalizations, i.e. syntax-generative rules, and what their projection onto truth functional semantics might involve, we propose to investigate what the speaker intends to do and

how s/he does it structurally. We refer below to this general area of investigation as ‘pragmatax’ tool grammar. Pragmatax concerns the decisions speakers make in formulating the structure of sentences. Without proposing that the full-blown meaning of a sentence underlies and explains syntactic structure, it presents a view in which syntax is not so autonomous as it is often conceived.

The current work on TG is limited to core phenomena roughly associated with syntax and its semantic correlates. It excludes important broad ares of linguistic science such as truth functional semantic interpretation, discourse, background encyclopedic awareness, and so forth. In this way the work is significantly less ambitious than works such as (Seuren) and (Halliday), but since many of these wider fields of research involve pre-linguistic cognitive processing in one way or another, TG may be found to be compatible and to interact with them in the future. We see advantages to encouraging more of a theoretical lingua franca for linguistic science,

3 Ill-Formedness and a Working Methodology

If language involves the application of a set of tools, ill-formedness, in all its variation, can result from picking the wrong tool for the intended task, or combining incompatible tools, or not having the prerequisites for some tool. In general, unacceptable sentences don’t occur in normal usage and it is natural to seek the most direct explanation. Syntactic theory has never come close to explaining all the sorts of ill-formedness documented in the literature. (Ross J. R., Haj Ross's papers on syntax, poetics, and selected short subjects, 2014) We present the hypothesis that there are so many manners of ill-formedness because there are many tools in a language that have natural restrictions on their use. Examples of ungrammatical sentences might be likened to trying to paddle an elevator or forcing square pegs into round holes, or where there is no hole at all. A goal of this paper is to demonstrate new resources for the explanation of patterns of unacceptability

Since we claim that structural action semantics can be transcribed, and is at the core of the language faculty, an operative question arises whether problems which have been considered unresolved, controversial, or even intractable might succumb more easily when the fundamental actions of language are factored in.

The methodology for exploring our hypotheses will be to survey and comment on selected problems and key data from the following sources, with some emphasis on central or difficult problems:

Standard textbooks in generative grammar

Well documented unresolved problems and issues

Specific works documenting areas where generative grammar is incapable

Problems of metaphor, stylistics, and poetics which in their finesse can be regarded as quality control on syntactic theory

We pursue this program of investigation below, undertaking preliminary analyses to explore a theoretical goal of discovering strong constraints on the limits of human language.

4 Specific Objectives and Scope

A full exploration of the relationship between linguistic intention and expressed linguistic realizations is a vast project so we must begin by limiting the scope of initial work. From one perspective, our purpose here is initially somewhat negative insofar as we aim to show that there can be alternative explanations to be explored for many unacceptable sentences which have been attributed only to configurational aspects of linguistic generation. So our first goal is to look again at why sentences may not be grammatical or acceptable, from another angle, based on the premise that for transparent and coherent reasons many recombinant structures, which may look possible when viewed from the limited perspective of independent variation, may not, instead, ever be of a nature ever to be preconceived due to cognitive constraints. In the context of these original questions, we begin to explore the nature of a system that uses linguistic intention to preclude instances of what would not be said for pragmatic cognitive reasons. A number of scholars have pursued a more functional view of linguistic structure and linguistic rules have been configured as functional elements using a limited range of operational concepts such as theme, focus, background, and so forth. Our goal in contrast is to begin to envisage a larger framework where the role of functional intent is massively expanded to provide operational workings that support and pervade the manifestations of syntax in a more encompassing way that also can enable more powerful constraints on universal grammar in the sense of the generative tradition. Our use of the term 'tool grammar' reflects an interest in analyzing as many syntactic phenomena as possible for underlying functional explanations.

Whereas Chomsky's minimalist program proposes a generative account of the syntax-centric connections between sound and meaning to include the creative, recursive component within those connections, we advert to the challenge of integrating such a system with creative linguistic intention and explore the implications of reconfiguring the program of research to incorporate a level of creative linguistic cognitive action into the generative enterprise. We investigate going beyond a minimal revision such as adding a linguistic action interface to the syntactic component in addition to the phonological and semantic ones, and put it rather at the center of sentence generation. It is beyond the scope of intial work to proceed the full distance into this research program so we limit our goals to demonstrating the feasibility and advantages of such an approach while programmatically outlining some directions that seem promising for future progress, and observing in passing some opportunities for imposing strong general constraints on for form of possible language structures..

Formalization of linguistic theories is important to make them explicitly testable and to guide data collection toward an understanding of important structural effects. Linguistic science has progressed to the point where theories can be usefully formalized as actual implementations in computer code. Implementations as computational prototypes, even strictly within the domain of linguistic theory, may be especially revelatory for generative systems since they not only validate the empirical claims but can bring new theoretical questions to light. Although we are not aware of a data base of regression tests for the acceptable and unacceptable sentences of any language we are intending to implement our own proposals as a working prototype. This aspect of TG studies is beyond the scope of the present work but should be understood as an important longer term goal for scientific validation. While focusing on theoretical linguistics, we also envisage work toward a model of linguistic competence which lends itself to incorporation in active

computational models that generate and interpret sentences. Unlike the Chomskyan model of syntactic competence which statically and declaratively represents syntax knowledge in a standalone system, we intend, by flowing from structural intention to syntactic output, to encourage a view of syntax which might eventually be incorporated in engineered solutions for natural language problems. While we adhere to the importance of linguistic analysis and modeling, we also anticipate a possibility of machine learning algorithms attempting automatically to mediate between specifications of linguistic intent and surface syntactic structures. Hidden Markov models and other statistical techniques may produce valuable linguistic engineering systems without hand crafted linguistic rules, and may bear useful similarity to neural models of brain functioning.

We intend this work to be empirical but programmatic and incremental. We present arguments that a set of syntactic phenomena are attractively explained if the analysis includes a specification of linguistic intent for structures observed in data, but the objective is programmatic and exploratory with limited goals. The sole objective is to show that structural decision actions can explain linguistic patterning. Discussion is limited to classic, challenging or resistant problems which motivate use of structural action conditioning factors that impose general constraints on generation by eliminating incompatible co-occurrences.

Since we address a subset of linguistic problems we leave open the possibility that some well studied phenomena with settled solutions might or might not have purely configurational solutions as presented in mainstream work in autonomous syntax without a component of linguistic intent. We motivate the need for a linguistic action dimension in a set of cases and outline a preliminary alternative architecture of competence but it is beyond the intended scope to examine the full range of syntactic processes which might be impinged, nor to present a complete alternative system. To the extent our arguments are successful, theoretical syntax would benefit from incorporating a new dimension, but it would be premature to try to anticipate the full range of implications. There are a wide range of deeply studied syntactic phenomena which remain to be examined from the perspective of linguistic action intents. We do not here aim to show that all syntactic processes involve linguistic intent specifications and do not exclude autonomous syntactic solutions. For this reason, and since many questions are left open, any definitive conclusions about the degree of difference between alternative systems and architectures of competence would be premature. This caveat allows for the possibility that a variety of previous solutions presented in the literature on more autonomous generative syntax are not impinged by specifications of structural intent.

In summary, the objective, therefore, is only to argue that linguistic intent conditions syntactic patterning while outlining an alternative architecture of linguistic competence without articulating a full technical proposal in detail. Our process of analysis can be considered an exploratory pilot in order to observe whether the constraints on structure that result tend toward strong generalizations to constrain the notion of what a human language is and can be.

We do not address issues of semantic analysis or semantic theory beyond a very narrow and functionally restricted domain. The specification of linguistic structural intent has a qualified semantic nature but is limited to actions affecting structural choices and excludes issues of

interpretation, compositionality, implication, inference, possible worlds, as well as the wider spectrum of linguistic truth-functional semantics as a general discipline. Furthermore, we do not propose that the full specification of the meaning of a sentence underlies the generation of syntactic structure as in the earlier tradition of generative semantics. Our position is that one very limited tranche of semantic information is associated with linguistic choice, leaving issues of interpretation apart for separate study. Where work on generative semantics was challenged for not providing sufficient constraints on universal grammar, our hypothesis is that the theoretical use of one dimension of semantics, structural intention, in syntactic analysis opens the possibility not only of providing a stronger level of universal constraints, but one that covers data more completely. Generative semantics derives syntax from meaning, TG derives structure from intentions that result in selections of lexical items and constructions. In TG, syntax is not completely autonomous, but neither is it fully enmeshed with the elaborations of semantic theory.

Our proposals include preliminary statements of compatibility constraints on the combination of structural elements. To the extent that these provide simpler explanations for complex phenomena, or preclude unresolved exceptions and residual puzzles they become subject to comparison with configurational constraints in generative grammar which do not make use of the dimension of structural intent which is at the core of the present work. We argue that constraints on generation using representations of linguistic intent hold promise generally to simplify the statement of linguistic universals which is essential for generative grammar, thereby advancing the Chomskyan goals for a specification of competence. The ideal result would be a simpler system of constraints that stabilizes and grows as new discoveries are made, while providing better coverage for a wider range of data with fewer exceptions. It is even remarkable that TG analyses seem to validate and replicate a set of Chomskyan conclusions that were not based on linguistic intent.

Many syntactic phenomena can be analyzed either as alternative related structures introduced into an utterance as a formational process, or as a basic pre-compiled lexical structure which is optionally transformed to an alternate form by a transformational rule. We do not in the present work undertake a comparison of this difference between lexical and derivational patterning,, that is between alternative constructions and options in the dynamic process of construction. For this reason we refer to the constructions involved in such alternations using the non-committal term ‘(trans)formation’.

5 Illustrating Linguistic Action: Passive is Not Active

In this section we do not analyze passive structures in detail but only demonstrate that the passive construction involves a pragmatactic action and is not simply a mechanical or configurational manipulation. We call a structural linguistic action (or a combined set of linguistic actions) an ‘***actioneme’*** and symbolize its transcription using a dollar sign (‘$’). An actioneme is analogous to but different from the ‘sememe’ of traditional linguistics.It is understood as a basic psychological component of linguistic structural intent.

Actionemes are introduced as pseudocode (see below) in the spirit of computer system design where it is useful to summarize actions as part of the preliminary process of examining system architecture and coding strategies prior to later formalization in machine executable form. We discuss this aspect of actioneme representation below. The actionemes presented are useful to facilitate discussion for a system eventually to be formalized in executable computer language, but they are also primarily useful for analysis of linguistic theory.

The actioneme is a basic recording of what users are doing, the originating linguistic action, when a linguistic element or structure is selected, but it does not include any full semantic specification of utterance meaning.. The term *actioneme* is introduced to signal an emphasis on what forms are used to do, while larger traditional questions of what they mean are not directly engaged. Semantics generally involves discovering what a speaker is saying. In pragmatactics the focus is on what the speaker is doing in structuring an utterance. It is the difference between the content of a message and the strategies used to present the content. What is said, versus what is done, and how.[5]

The sememe is an element of meaning while an actioneme is an element of pragmatactics, or structural linguistic action. We take the meaning of an utterance to be the thoughts which the speaker undertakes to represent, while the pragmatactics are the set of decision actions the speaker takes in formulating how the meaning should be represented in external form. An actioneme is not an element of meaning in a normal broad sense. In the way that it can be considered semantic, it is reduced in a very restricted sense, oriented to linguistic action that results in particulars of sentence formation as a result of linguistic decisions for particular intent.[6] Since actionemes involve structural decisions, it might be asked why they should ever be characterized as 'semantic'. The answer is that linguistic structural actions originate in the speaker's thought processes, which is the domain of semantics as we intend it.

We propose that every linguistic (trans)formation[7] has pragmatactic content and introduce one example here to illustrate.[8] The passive form of a sentence is not pragmatically equivalent to the

[5] We differentiate our 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 pragmatactic decisions that determines aspects of how structures will be built. Tool grammar involves this indirection and in any case does not address the historical arguments for or against generative semantics.

[6] Traditional linguists might object to the introduction of a new linguistic term since 'sememe' is available to refer to any basic unit of meaning formation, but we prefer to introduce a new term here to signal the contention that if fieldwork centers on eliciting the intended action of sentences, and linguistic theory incorporates intention in a theory of tools, that a new understanding of linguistic processes will result.

[7] Or construction as the reader prefers. Throughout this paper transformations may be cast as alternate constructions depending on considerations which we do not presently take up.

[8] 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.

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 indicates that an actioneme is operative in the passive example: $bringPatientIntoAgencyEventFocus. The active form can be explained as an unremarkable default or, possibly, since one can posit two possible functional intentions, as reflecting $exhibitExplicitEventAgency. When a phrase highlighting special characteristics of the agent (such as "What was surprising about" or "Of all the foolish acts given her allergies") is added, the 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 pragmatactic conflict[9] between tools in opposition, trying in a single sentence, at cross purposes, to both add and take away special attention to the agent. We discuss a Cross Purpose Constraint further below.

As actionemes are proposed as operative in syntactic processing they should not be viewed as unredeemable subjective intuitions without rigorous scientific basis or theoretical foundation. We maintain that actionemes can be regularized and codified in ongoing investigations, and their validity as data can be established and replicated in a scientific process. Actioneme elements can be validated by properly interviewing linguistic consultants, by social science research practices, and by psycholinguistic experimentation. A properly motivated set of actionemes would have status beyond initial intuitions as formally validated linguistic constructs.

TG suggests possible explanations for the many dimensions of variability of structured expressions. A grammar might be understood as a repertoire of mental tools used in building actions based on conceptualizations rather than a fixed mechanistic generative competence. What are sentences built with? We propose TG or sentence action grammar as a pragmatic construction and delivery system; it makes use of linguistic structural action semantics defined in a broad but intuitive sense: What is the speaker doing with the utterance?

We aim to demonstrate the explanatory value of transcribing evident features, such, for example, as "assert completed" where such an action is manifestly present in the use of perfective structures. We call these features, when transcribed and presented *actionemes*. We envisage constraints on tools for the realization of linguistic actions, implemented in downstream syntactic

[9] A pragmatactic 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 insertion in the same 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.

processes, and call the holistic system *pragmatax*. Sentence action meaning, unlike the predicate calculus of truth functional meaning, is viewed as procedural knowledge, i.e. methods for accomplishing things, rather than declarative knowledge, the static summarization of dynamic possibilities.

6 Actionemes as Pseudo-Code

Actionemes are clusters of properties that represent linguistic action intent. We present hypotheses about linguistic actions using dollar sign actioneme symbols such as '$insertReflexive'. Actioneme symbols (represented with '$' symbols) represent preliminary hypotheses aiming toward a standard vocabulary of linguistic action intents. They are utilized as a form of pseudo-code for methodological convenience with an understanding that the process of formalizing TG should call eventually for a range of mathematically explicit, more rigorous elements and forms. The purpose of pseudo-code is to engage higher level questions of structure, process and organization without falling into detailed questions at a lower level of generalization. Actionemes are shorthand in discursive presentations for a feature and function formalism which is under design for a machine implementation as a generative system. Pseudo-code is useful in computer architecture for preliminary analysis of procedural processes and is useful for discussions on alternative approaches before formalization into machine executable form. The current work primarily considers issues of theoretical linguistics but can also be part of a design process for a computerized system that aims to properly formalize TG theory as an operational generative system subject to regression testing against a database of sentence forms. Actionemes often require phrases and reflect an internal complexity. This suggests the possibility either of a form of feature representation (e.g. $inquireJudgment [+inquire, +judgment]) or of embeddable function representation. (e.g. inquire(judgment())), and might possible involve mixed representations. The use of embedded functions implies a tree representation, begging the question, which we leave open, whether representation of action intentions fits naturally into the merged tree structures that result from lexical selection and assembly into increasingly larger units. Whatever the form of improved theoretical statements our hypothesis is that constraints on cognitive compatibility among linguistic tools can be formulated as patterns of actioneme feature or function complexes, and that, furthermore these can be integrated into the larger matrix of a linguistic theory. The general thesis is that linguistic tool intents are involved in a restrictive cognitive pragmatics, which can explain many linguistic phenomena, and is compatible with a variety of linguistic theories. Our current purpose is to advocate for the general approach so issues of formalization are not here addressed.

7 Motivation for a New Orientation

[NB: This section is under revision in the extended document.]

8 Evidence from Meta Reference

John Ross in one of his squibs raises a point of direct interest to the hypothesis that pragmatax tools underlie human language use. (Ross J. , 50 Years of Linguistics at MIT, 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 regarding which of conjoined terms to order leftmost first. This evidently reflects a tool $specifyConjunctOrder, and it would seem 'that' must refer to this ordering, i.e. to the pragmatax actioneme. This shows linguistic structure is self-aware and can refer to itself at the level of actionemes. The referent of 'that' is direct evidence that actionemes exist per the decision to place one item before another.

The example suggests that syntactic structures are connected to a process of construction which is improvisational and on occasion even self-conscious and self-referential. It is evidently prima facia evidence that syntax offers tools in a manipulation matrix, such as perhaps a whiteboard pointer in computational representations, rather than a contained generative automaton.

We take Ross's questions as primary direct evidence for the existence of pragmatax tools and their usage in sentence formation.

9 Some Historical Antecedents to Pragmatax

[NB: This section is under revision in the extended document.]

10 Basic Constraints on Focus Constructions

Cleft and Pseudo-Cleft constructions are documented in many treatments of English syntax, illustrated, for example, by (McCawley, 1998) p. 66.

(7) I gave a watch to my brother.
(8) *It was a watch to my brother that I gave.
(9) *What I gave was a watch to my brother.

These contrast with acceptable clefting (our examples):

(10) It was a watch I gave to my brother.
(11) It was to my brother I gave a watch.
(12) What I gave to my brother was a watch.
(13) To whom I gave a watch was my brother.

It is evident that these (trans)formations exist to move material to a fronted focus position, but rules of syntax have not included a dimension to capture their functional purpose. We posit an actioneme for constructions such as these: $giveFocusToSalientElement. If such an actioneme is associated with the syntactic (trans)formations the unacceptable sentences above would seem to be ruled out by a common sense constraint.

Single Focus Constraint

Given that the purpose of a focus construction is to bring an element to the fore, it is counterproductive to focus transform more than one element since focus on two elements is contradictory and detracts from the purpose. The focusing of two elements interferes with the proper focusing of either.

The focus item 'only' provides independent support for a variant of this constraint as illustrated by data from (McCawley, 1998) p 68. Contrastive stress is indicated by underlining.

(14) John only put flowers <u>in the vase</u>.
(15) *John put only flowers <u>in the vase</u>.

Here we see both 'only' ($assertNoOther) and contrastive stress ($assertThisOverThat) insinuating focus in the same sentence. When 'only' adds focus to the entire verb phrase, it can co-occur with contrastive stress on the locative phrase. But when 'only' focuses the direct object and contrastive stress focuses the locative phrase, they are not compatible. In this case we see that a corollary of the Single Focus Constraint operates within the verb phrase.

Overlapping Exclusion Constraint

Don't use multiple focus devices that exclude possibilities when one exclusion is inclusive of a narrower one.

This example serves to illustrate the simplicity, directness, and empirical basis of pragmatactic analysis, for which evidence can be marshalled in a wide range of syntactic environments.

11 Tools versus Rules

A tool is not equivalent to a rule. It encompasses more and serves a different purpose. A rule is a productive regularity observed by a linguist. It can be a generalization or a requirement or a tendency but it cannot in our view purposefully be used by a speaker to build a communication structure. A rule is for the theorist describing an observable pattern, a tool is for someone with an intention trying to accomplish something. A linguistic tool is useful in building a communication structure, which is an assembly of intentions represented by their particular forms. A set of sentences can be described statically or be abstractly generated by rules, but these auto-generated sentences do not serve a utilitarian purpose. Tools, in contrast, can be wielded to specific effect. As the product of tools, sentences are inherently useful, whereas a purposeless generation of a syntactic structure is not.

We posit two fundamental types of linguistic tools: lexical and (trans)formational.[10] A user constructing a sentence amalgamates a complex of intentions by selecting and assembling lexical items. Lexical items are merged into integrated structures according to constraints of phrase structure and phrase merging. As lexical items become merged they form configurations which become eligible for (trans)formation. Transformations are linguistic tools that reflect the

[10] An alternative view of grammar would create the respective constructions independently without the intervention of transformation mechanisms. We do not consider this possibility here.

intention to configure or modify the communication in a particular manner for particular effect. They take syntactic structures in configurational syntactic complexes as input and generate modified configurational syntactic complexes as output, but always with some stylistic or other informational intent.

Formally, a rule can be characterized as a well-known schema with two basic parts: structural requirements and structural effects

RULE

Structural input requirements
Structural output effects including optional introduction of new material
(Extraneous parameters)

The structural requirements specify under what conditions of structure the rule is applicable. The structural effects specify the effects on the input structure when the rule applies. A third part records extraneous parameters of applicability as required by a particular theory. A rule may thus be characterized as 'optional', or can be selected as 'active' in a collection of universally available rules which may or may not be activated in a particular language. Any number of ancillary parameters can be considered.

A tool, in contrast, can be specified with these same parts, but including, crucially, an additional part to specify utilitarian intent.

TOOL

Utilitarian intent
Structural input requirements
Structural output effects including optional introduction of new material
(Extraneous parameters)

To illustrate the difference, consider the case of adding a lexical item and effecting a (trans)formation. A user chooses to insert a perfective morpheme to communicate that an event is completed. There is an input requirement that there be an event of continuance instantiated in a verb. New material is specified. The effect of the tool is to merge the new material, the perfective marker, into the input structure.

Perfective Tool:[11]

Intent: $assertCompleted
Input requirement: verb of continuance: "He eats"
New material: 'have + en'
Output effect: merge perfective marker: "He has eaten"

Now, consider the operation of a classic stylistic (trans)formation.

[11] Operations are not formalized where we intend only to illustrate high level concepts.

Passive Tool:

Intent: $ bringPatientIntoAgencyEventFocusFrontToSalientPosition
Input requirement: verb plus object: “He eats the cake”
New material: ‘be + en’ (‘by_’)
Output effect: The cake is eaten by him.
Move object to front, subject to by-phrase, Merge passive marker: “The cake is eaten by him” Note: This structure might alternatively be analyzed as a lexical choice involving no transformational restructuring.

A main difference from standard generative grammar is that TG would search for naturalistic utilitarian solutions as part of the human endowment for problem solving with tools. The linguistic mind is projected as not so abstractly foreign to the conscious utilitarian human mind. All grammatical devices have been invented by humans. Rationales for tools may be recognizable and understandable as intuitive inventions. Every linguistic rule may have been some inventor’s novel idea at some point prior to adoption by a community, and should be understandable with regard to motivation and intended effect. Empirical investigation will determine whether we risk a disservice to the tradition of a human linguistic lineage if we assume all intricate language capacity results only from a simplified setting of parameters. (Chomsky, The minimalist program, 1995) A language may alternatively be understood as an inventory of tools, selected from a universally limited and exensible set, together with a selection of parameters to determine how tools are individually configured and interact with one another. The possibility for innovation and invention beyond n-ary parameter choices can be advantageous in case it is found that the variety of language constructions cannot be insightfully understood as a simple setting of parameters..

The crucial analytical difference between a rule and a tool is that the latter specifies intent using vocabulary of linguistic action descriptors. We expect these can be conventionalized over time from linguistic fieldwork to become a putative universal set even while the structures realized from them can be differentiated and diverse. Our hypothesis is that the listing of intents in a sentence involves an operational characterization of meaning which will be more useful in the development of linguistics as a science than those deriving from formal logic, which are less tractable and more removed from the psychological mechanics of speaking. For present purposes, meaning is circumscribed as a series of functional and intentional steps taken to enact a plan for desired effects which are to be observed and captured by the field linguist undertaking the analysis of language.

12 Distinguishing Grammar from Meaning

[NB: This section is under revision in the extended document.]

13 Linguistic Fieldwork and Actioneme Transcription

TG views meaning as being projected by action, so the corresponding approach to data collection may be quite different from the direct asking of what forms mean. For pragmatax what one does with a sentence and its parts is more useful for development of a tractable linguistic theory than questions such as what a sentence or other item might imply or "mean" in a truth functional setting. The operative question is what the user seeks to achieve by using a form. We advocate that elicitation frames generally take the form: What is the speaker doing with a word, morpheme, phrase sentence, etc.? This includes minimal contrasts against expressions lacking the form in question. For those doing anthropological or other field work it is daunting to specify all the implications of a meaning of a linguistic element. The TG view of meaning is operational. An element may conceal a readily accessible meaning in any declarative sense but have operational effect to be understood by contrasting examples with and without the form in question. What for example is the declarative meaning of 'even'. There may be no answer prior to asking what speakers are observed to be doing when using this item in specific circumstances. Even as lay speakers, we are aware of a plethora of linguistic acts at all levels of structure, and are able to express and refer to these routinely with a general or dedicated native vocabulary. A single sentence or any of its units may, and characteristically does, involve a multiplicity of actions and we are not at a loss for vocabulary to describe them.

We recommend elicitation techniques such as the following, which are well-known to field linguists in any case:

1) What was the speaker doing when s/he used that element?
2) Why is that element there?
3) What's missing if you take that element out?
4) Can you say something to show me how you would use that element in a different context?
5) If you took that element out what could you put in there that would do about the same thing? What are the differences?

To introduce the general idea of transcribing linguistic acts, it is instructive to look, first informally, at everyday words that describe the kinds of actions speakers have in mind even independent of any theoretical linguistic interest. In English, the vocabulary describing language actions is very large. We can not yet pursue a fixed conventionalized list of descriptors in this paper but it is useful to explore the domain by means of a sparse sampling of illustrative examples.

Some are common and general:

Speak, Talk, Verbalize, Say, (promise, swear)

Many describe the structure of argumentation:

Argue, Contend, Deny, Refute, Contradict, Prove/Disprove, Counter, Give a reason, Reason, Imply, Presuppose, (Dis)Claim, Associate, Deduce, Generalize, Correct, Reinforce, Assert, Hypothesize, Support, Evade, Suggest, Ignore

Some are essentially social beyond the basic interpersonal component inherent in other examples:

Deliberate, Discuss, Consult, Set expectations, Confer

Others have to do with rhetoric:

Introduce, Expand on, Summarize, Emphasize, Hedge, Indicate, Highlight, Insist, Gloss over, Be ironic

A good many are judgmental

Flatter, Insult, Denigrate, Praise, Bemoan, tattle, blab, babble

Many pertain to specific contexts:

Joke, Sermonize, Read, Lecture, Pray, Preach, Rhyme, Wax poetic, Sing, Order (at retail)

They can be idiomatic:

spill the beans, let the cat out of the bag,

Some terms describe language use but do not reflect a speaker intent:

Be boring, Make no sense, Is confusing, stumble over words, be unclear

Of particular note, some such terms are of such general linguistic utility that they might be segregated out for the frequency of their utility. Is this the source of some part of grammar?

Negate, Question, Declare, Declare Unknown, Command, Indicate, Express doubt, Express certainty, Leave unspecified, Emphasize, Downplay, Focus on.

Others are so basic and general that they can be inferred from and associated with nothing more than what has been held to be a purely grammatical construction.

Quantify ('the dogs'), Locate (locative case), Attribute (bike's color), Modify ('run quickly')

This is but a small sampling of what is a large inventory of such terms. It would be a major, albeit necessary, undertaking to map out and analyze the full descriptive taxonomy. While some terms can be used to describe non-linguistic acts, they all have major or central uses where they do reflect language behavior. Many terms have such a dual role. As natural language terms they often overlap and cross-classify one another. Just as the phoneme is an abstraction[12] often composed of multiple parts (/p/ bilabial, voiceless, /au/ [a] [w]) so these can be thought of as popular emic elements, which we refer to as linguistic 'actionemes' made up of analytical distinctive features that can combine in a variety of ways.

In popular lay usage these natural language terms have the benefit of reflecting the interpretation of actual participants. While they can be used profitably in transcription of linguistic passages, scientific refinement and regularization can provide a formal, principled, canonical set over time. While much work is required to fully inventory, categorize, interpret and codify such expressions, it is possible to begin semantic transcription in an informal and exploratory way with little more than the popular terminology as we do in this paper. Even with some informality, such transcriptions are empirically verifiable. Since they are in popular usage inquiry and experiments can determine when and whether particular transcriptions have been

[12] The term 'abstraction' here is used in a non-technical sense when referring to phonemes, etc. in this paper without wanting to raise questions of exact theoretical or psychological status.

accurately imposed on data.

There has been a recent focus on field methods for semantic and pragmatic research and regular coverage in conferences, including Semantics of Under-Represented Languages in the Americas (SULA). (Matthewson, 2004) (Gibson, 2010) (Sprouse, 2012) These areas of methodological interest are important for recording linguistic actions in syntactic and general studies as well.

Speakers are typically doing many things at once when they utter a sentence, and it is valuable for the linguist explicitly to record individual actions implicit in the use of each sentence. There would be two primary questions to investigate in field explorations:

> Generalizations: Generally, what is the speaker doing when s/he uses a particular form or structure X?
>
> Scenarios: Given an element X, what would typically be going on when a speaker uses X and what would a speaker be doing by the use of X in that context.

Directing field work toward the discussion of scenarios and situations, as advocated, in recent studies, enables more specific descriptions of what is being done with each tool. This is an important dimension beyond the bare judgments of acceptability and the glossed translations that have historically been the focus of syntactic studies. For TG the most important records should be oriented to the actions in a sentence without involving a full exploration of inferences, truth conditions and so forth, which speak more to theories of anticipation, interpretation, inference, and so forth. We see linguistic action and intention explicitly mentioned when speakers talk about language. This provides an important empirical basis for linguistic theory.

14 Labrador Inuttut Inverted Number Marking

There is a fascinating and superficially perplexing patterning in the Labrador Dialect of Inuktitiut wherein the quite regular markers of singular and plural in verbal inflectional markers are inverted in second person forms. This linguistic problem cannot be solved without incorporating representations of linguistic intent. Here are examples drawn from an expanded discussion in (Smith, 1979)

	1st P. Subj.	2nd P. Subj.	3rd P. Subj.
Sing. Subj.[13]	vunga + Φ	vuti + t	vuk + Φ
Dual Subj.	vugu + k	vuti + k	vuu + k
Plur. Subj.	vugu + t	vusi + Φ	vu + t

The singular and plural markers are switched in the second person. [14] This patterning is pervasive

[13] Number is not marked as a separate element for 1st and 3rd person in this analysis, but the distinct forms 'vunga' and 'vuk' show the cross classification which is not uncommon in paradigmatic systems. It remains that there is no isolable marking of number in these forms.

[14] Note the '+' markers are added as a visual aid rather than for a formal morphological analysis, which requires

through many paradigms. It is possible to view such an alternation as paradigmatic, without grammatical analysis, or view it as lexically frozen from some inaccessible process in the past, but the questions how it could be this way and how this could have come about are left begging. In [Smith 1979] evidence from multiple languages is provided to support a hypothesis that plural is unmarked relative to singular, in the Jakobsonian sense, for the second person. Without repeating here the varied evidence for this, it is evoked by pointing to familiar cases in languages such as French where the plural form 'vous' encroaches on the semantic territory of the singular. The markedness approach enables an abstract analysis where /t/ is held to be not a marker of plural but a marker of markedness, which is analyzed as plural for first and third persons but singular for the second person. This solution is theoretically interesting but only partially satisfying given the observations. It remains to ask why the markedness pattern would itself be such, and why second person marking has its particular irregular characteristics in a wide variety of languages.[15]

Our current aim is to consider the possibility that the rigid separation of linguistic action features from linguistic syntactic configuration effectively prevented an explanatory solution in the earlier analysis. A more comprehensive generative solution is possible if we posit that LI inverted number marks pragmatic actionemes. $assertPlurality and $assertSingularity can be viewed as separate from but involved in grammatical plural assignments. We propose that singular and plural are used normally in first and third persons, but inverted in second person for a pragmatactic reason, i.e. to assert plurality when speaking to one and assert singularity when speaking to many. We observe that a speaker can diffuse uncomfortable focus when speaking to a single individual by addressing a plural diverse audience as an artifice. Similarly, when speaking to a plural audience the speaker may want to avoid the presupposition of dissension and disagreement by artificial formal address as if to a single person.

The Inuttut speaker acts out of social sensitivity not wanting to make the listener uncomfortable by identifying members of a group in any uniform or stereotypical way, and similarly, but inversely, avoiding characterizations or assumptions about a single individual. The use of the otherwise grammatical singular when addressing more than one listener can be construed as a device for social cohesion whereby differences among individuals are tactfully overlooked or subordinated by formal reference in the singular. A speaker might not want to reference differences among listeners even if s/he knew they existed.

We therefore propose an actioneme $promoteGroupCohesion to represent the intention neither of isolating an individual from group membership nor dividing a group by assuming internal diversity perspective. In the context of this intention, $assertPlurality is used when addressing an individual and $assertSingularity is used when speaking to a group.

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treatment of all the evident alterations.

[15]No proper synchronic analysis of usage by Inuktitut speakers has been undertaken to corroborate any particular synchronic analysis. A conservative analysis, assuming that the inflectional endings are frozen without any necessary reference to internal meanings, could best correspond to the conscious awareness of modern day speakers. Yet the historical question how such a system could develop looms significant and the remarkable evident special status of the second person as the very social context of utterance needs to be included in grammatical analysis to condition various grammatical phenomena.

Any particular analysis must always await replication and confirmation from other sources but this particular behavior of second person elements in Labrador Inuttut argues strongly that grammatical systems can have reference to linguistic actions. The natural spotlight shone on the listener by second person contexts might well naturally cause some corresponding grammatical morphemes to glow with particularities.

A traditional criticism of the linguistic action approach might be that it mixes pragmatic and grammatical systems of competence. Yet we see from Labrador Inuttut inverted number marking that allowing action features in grammatical derivations can allow a competence/performance distinction to be maintained in a way that envisages the migration of performance features by an individual into the competence systems of larger groups in processes of historical change. Making such features available in grammatical derivations allows the systematic generation of patterns which would otherwise be impossible, thereby obviating gaps in the potential for grammatical explanation and enabling psychologically plausible mechanisms for diachronic change. It seems unacceptable for any theory of grammatical competence to allow any phenomenon of strong grammatical patterning to remain unaccounted for.[16]

15 Inverse Number Marking Phenomena Elsewhere

[NB: This section is under revision in the extended document.]

16 A Tool Grammar Treatment of English Reflexives

A solution is proposed in this section for the acceptability patterns and effects for reflexive anaphors, as a competitive alternative to a purely configurational syntactic approach. By associating a specification of linguistic action intent with each formational process, which distinguishes the Tool Grammar approach, a simple, functionally motivated analysis is achieved which probes beyond the undergirding configurational elements of C-Command control and the Extended Projection Principle. The alternative TG approach here opens a window and poses questions and alternatives for the architecture of competence.

We present a TG analysis of reflexive, holding, simply, that for each rule or element of structure in a sentence there must be specified, an element of linguistic structural intent, and that the intents of tools are relevant and determinative with regard to where they may be applied, thereby explaining patterns of acceptability/unacceptability. This approach does not reject the general thesis of a configurational explanation for reflexive patternings, but only presents the feasibility of a narrowed analysis, controlled in the domain of structural intent,

[16]The argument of this section illustrates how a marker of markedness can have a pragmatax explanation. In an independent analysis not explored here we analyze how Inuttut ergative may function similarly as a marker of markedness amidst pragmatax undercurrents.

which is prima facie quite natural to a functional generative process. Arguing prior to full formalization, we address the fundamental issue of the controlling factors for the occurrence of reflexive anaphors. The TG regularities conditioned by linguistic action intent, and thereby having characteristics different from purely syntactical rules, are reflective of the *pragmatactic* view of language. By the association of purpose and intent with linguistic structural processes., we orient our analysis of reflexive structures around the practicalities of its usefulness in an endeavor to capture the essence from the perspective of utilitarian competence of language.

Background Data, Configurational Approaches, Overview

In the Minimalist Approach reflexives historically depend on the concept C-Command, which is the configurational relation wherein the co-referential item must be the sister or be within the sister of the referee. Here is representative motivating data:**Invalid source specified.** 118-20

(16) I shaved myself.
(17) *Myself shaved me.
(18) *The man I saw shaved myself.
(19) *My mother hated myself.

In expanded treatments, three factors are useful in configurational treatments of the reflexive. They are as follows: (Haegeman, 1994) p.207 ff.

- CM Clause-Mate: Reflexive is conditioned by co-reference inside the minimal clause.
- CC C-Command: Reflexive is conditioned by a co-referent in a C-command position
- SA Subject Argument: Reflexive is conditioned by the nature of the abstract local subject argument

Our treatment will diverge from this strictly configurational analysis but dovetails well with these previous generative analyses. In particular we find evidence that C-Command arises in generalizations for an underlying functional reason Further we argue that orientation to subject in syntax, associated with the probing insights of the Extended Projection Principle, affirming that sentences must have a subject, derives its explanatory capacity from the philosophical view that sentences are representations necessarily implying that there would of necessity be subject matter. These principles of generative grammar coalesce with concepts of purpose and intent as the functioning of linguistic constructs as tools is considered.

Below we present an array of standard data and effects associated with discussions of the reflexive in English, adapted from (Haegeman, 1994), Adger (Adger, 2002), (Carnie, Syntax A Generative Introduction, 2007), and others. This data illustrates three contextual controlling factors: a locality clause-mate constraint (CM), a hierarchical C-command constraint (CC), and a subject argument constraint (SA). The presentation is intended for those already familiar with the generative treatments of reflexive phenomena, which are well-rehearsed in the literature.

Following is the data set of acceptable and unacceptable sentence types which are the empirical basis of analysis. We recite relevant observations for each example:

(20) I shaved myself. Al invited himself.

(21) *Myself shaved me. *Himself invited Al (He himself left. *Himself he left.)

a. Order or structure is relevant

b. No anaphor in subject position

c. Not c-commanded by referent so precedence not necessary in configurational treatment

(22) *Al invited herself.

a. Co-reference required with feature agreement.

(23) *The man I saw shaved myself.

a. Coreference is lateral or down in embedding, not up..

(24) *My mother hated myself.

a. Embedded modifiers of heads are out of co-reference scope.

(25) Al believes Sue to like herself.

a. Reflexive occurs when co-referents associated inside same simple clause.

(26) *Al believes Sue to like himself.

a. Higher subject co-reference is blocked across object control

b. Reflexive doesn't occur when co-referent in higher clause across object control.

(27) Al's mother invited herself.

a. Reflexive can refer to larger subject NP

b. Covered by CC

(28) *Al's mother invited himself.

a. Not just CM but CC required since reflexive can't refer to np inside subject np

(29) *Al said that himself left.

a. Shows CC not sufficient, need CM too

(30) Al said that he left.

a. Shows CC not sufficient, need CM too

(31) Al thinks that Sue hurt herself.

a. CC insufficient

b. Need locality constraint CM

(32) *Al thinks that Sue hurt himself

a. CC insufficient

b. Need locality constraint CM

(33) *I expect himself to invite Al.

a. Locality (e.g. CM) insufficient

b. CC required but phrase structure tree is debatable

(34) I expect Al to invite himself.

a. Locality (e.g. CM) insufficient.

(35) Al believes himself to be the best.

a. CC but not CM, so predicts ill-formed wrongly, but depends on phrase structure analysis

(36) *Al believes that himself is the best.

a. CC but not CM so predicts ill-formed correctly

b. Also presents hypothesis that tensed S is controlling

(37) * Al believes Sue's description of himself.

a. CC but CM so predicts well-formed wrongly, showing the need for an additional constraint.

(38) Al believes any description of himself.

a. CC CM predict this but shows can't just limit previous case inside NP

(39) Sue believes Al's description of himself.
   a. Shows potential role of the logical subject.

(40) The picture of himself upset Al.
   a. Reflexive in matrix subject position shows special nature of picture/description constructions.
   b. Shows potential 3rd factor, role of logical subject

(41) *Al believes that Sue's description of himself is wrong.
   a. Correct prediction CC but not CM

(42) Al believes that any description of himself is wrong.
   a. Wrong prediction since CC but not CM

(43) (Sue believes that) Al's description of himself is wrong.
   a. Correct prediction: CC and CM.

(44) Al believes that a picture of himself will be on show.
   a. Shows that neither a tensed clause constraint nor a noun phrase constraint will suffice.
   b. It's possible to call on an abstract concept of subject dependent on case marking features being present..

(45) Al expected Tom to invite himself. Tom was expected by Al to invite himself.
   a. Object control is a trigger

(46) Ed allowed himself to invite Al. Ed allowed Al to invite himself.
   a. Co-reference to and from the higher object

(47) Al believed Ed to have hurt himself. Al believed himself to have hurt Ed.
   a. Co-reference to and from the higher object
   b. Object control triggers lower reflexive.

(48) Al has to want to try to begin to save himself
   a. Subject control triggers reflexive through multiple embeddings.

The configurational approach extends to three structural factors to account for reflexive phenomena. C-command and Clause-mate restrictions account for the majority patterns but *picture/description* constructions as in (37)(38)(39)(40)(41)(42)(43)(44) require the invocation of an abstract subject concept, which is indirectly motivated under a number of contingent assumptions.

Configurational analyses present specific hypotheses that stimulate further and deeper examinations. They are highly effective for uncovering and probing syntactic and other effects. They reflect directly on questions of which linguistic structures and processes are compatible with human linguistic capacity, but do not, however, explore or posit reasons why any particular linguistic structure may exist or how it functions in a utilitarian context. Configurational generative analyses do not seek the founding purpose behind the reflexive construction. In our analysis we juxtapose against this a pragmatactic approach using functional explanations of intent which depends on principles of cognitive strategy rather than hypotheses about specialized architectural configurations.

The General Case

In TG we propose actioneme hypotheses to specify the function, purpose, and user intent underlying constructions such as the reflexive.

The generalization we arrive at for the above data is that there is a default, baseline (overridable) assumption, for purposes of likelihood and practicality, that the nominals within a single clause will not in most cases co-refer, and are prone to cause more ambiguity confusion when they do. In other words, although they occur as contrastive indicators, reflexive co-occurrences are not the unmarked syntactic norm. In this context it becomes functionally useful to mark them overtly. Simple predications do not normally involve some attribute in a relation to itself. When a nominal does in fact co-refer, against the more general expectation, it appears as a reflexive form to show that the default unmarked expectation has been over-ridden as a measure to preclude ambiguity in a particular clause. There is for the most part no such co-reference expectation across clause boundaries. Reflexives do not generally occur outside simplex clausal environments, because, when more than one clause is introduced, and there is more than one predication, the possibilities of co-reference exceed the lower likelihood associated with a a reflexive relation of single predication. In this way, reflexives are seen to have a purpose reflecting user intent. Their function is to reduce ambiguity by adding lexical material in a context where the differentiation is most useful

It is the specification of an intent for each form of construction or (trans)formation that distinguishes pragmatactic tool grammar from other generative systems. We refer to an element introduced into a linguistic structure for some reason of user intent as an 'actioneme', symbolized by a string with an initial dollar sign '$'..

As a first approximation (to be refined) we can account for the occurrence and nonoccurrence of '-self forms in most of the above data in a direct way by specifying just the basic behavior associated with the introduction of the –self lexemes. We note that the simplest and broadest generalization from the data is that –self co-refers with clause-mate preceding NPs. This accounts for most of the data leaving narrow special cases to consider. As a first rough approximation, we might propose the following actioneme intent for introduction of *–self* anaphoric forms:

Reflexive Behavior

Insert a reflexive –self form for an NP under the following conditions:
There is a valid referee, co-referring NP in the same clause.
The referee precedes the NP

Note that a precedence relation appears prima facie to be required since co-reference is one directional.

(49) *Himself invited Al

Reflexives referring outside the local clause into a separate tensed clause are ruled out because reflexives are restricted to clause mates in the local clause.

(50) *Al thinks that Sue hurt himself
(51) *Al believes that himself is the best.

We propose a pragmatactic procedure to filter the unwanted sentences and allow the good ones.

Pragmatactic Filtering Procedure

1. Register specified domains for which co-reference is less expected and more prone to ambiguity.
2. Register cases where NP co-reference occurs in these domains against this expectation.
3. Replace a co-referring NP in these domains with an agreeing reflexive –self form where it follows its referee

As noted above, for purposes of higher level analysis we summarize the general structure of linguistic structure actions using a form of notation we call an actioneme. In this case, to express the state of affairs for reflexives, we propose for step one above an automatic default, unmarked actioneme within each simplex clause predication:
$ registerCorefAmbiguityRiskForClauseDomain. This is a cybernetic default as discussed above reflecting the most likely and frequently expected situation. It captures a background condition that for simple clauses it is deemed less likely that nominals will be co-referential.

We posit a second actioneme for step 2 $registerCoRefOverride activated when a nominal co-refers inside a clause against the expectation of step 1, i.e. $registerCorefAmbiguityRiskForClauseDomain. Finally $insertReflexive , corresponding to step 3., inserts a reflexive –self form agreeing with the context.. It indicates some NP that co-refers with some other preceding NP in its domain of expectation that is not in a separately embedded sentence.

These actionemes represent structural intentions which comprise a part of linguistic competence.

The variety of surface forms is covered as illustrated in various examples:

(52) I showed Ann herself
(53) *I showed herself Ann
(54) The book was given by Ed to himself.
(55) The book was given to Ed by himself

It is interesting to inquire why such processes might be formed. Beyond simple clauses, when an embedded clauses is present, there arises not only an additional predication, but invariably as a result, the possibility of one or more additional nominal elements. In particular the embedded clause must admit at least of its own subject. This proliferation of nominal candidates increases the likelihood that elements may co-refer. In fact we posit that the global possibility of nominals, particularly animate ones, beyond those involved in the main simplex predication is fundamental in controlling the occurrence of the reflexive form.

Special Cases

Case 1
The simple actionemes posited above do not yet account for cases where reflexive bridges simple clause boundaries. Consider the cases of subject control for “EQUI” subject verbs.

(56) Al attempted to work the radio
(57) Al tried turning the radio on.
(58) Al painted the wall suspended from a rope.

To handle subject control and condition cases such as these we propose an actioneme $registerSameSubject that declares identity between the higher and embedded subjects.

Similarly, we posit $registerSubjectSameAsObject for object control verbs:

(59) Sue asked him to enroll himself/*herself. Subject to object control
(60) Al believes Sue to like herself/*himself

To account for these cases we propose that as an automatic consequence of actionemes asserting same subject or object for control verbs, that the domain of unexpected co-reference is automatically extended to include the higher NP. We capture this as the actioneme: $expandCorefUnexpectedDomainToControllingNP

This expansion can be recursive. When there is a chain of EQUI subject control the reflexive domain expands accordingly.

(61) Al has to want to try to begin to save himself

Significantly also, in this example, *himself* can occur before any of the verbs.

(62) Al (himself) has to (himself) want to (himself) try to (himself) begin to (himself) save himself

Note the following particular case showing that the functional role (subject, object) of NPs is operative rather than merely NP presence, and also that the expansion of the domain does not include intervening material:

(63) Sue promised Al to promote herself/*himself a note. (Equi subject to subject control)

The following shows that the reflexive processes depend on a general notion of precede, rather than specific immediate precedence.

(64) Al showed Sue (himself/herself) in the mirror

Case 2

The unified actioneme approach outlined generally accounts for the data but further analysis is required for exceptional cases involving representation lexemes. Consider following examples repeated from above:

(65) Al believes any description of himself.
(66) Sue believes Al's description of himself.
(67) The picture of himself upset Al.

Note that these exceptional cases all involve a set of similar lexical items: *picture, description, account, photo, likeness, depiction, reflection, book*, and so forth. It is the class of nouns denoting representations. These are anomalous cases in the TG approach, and are also equally exceptional for configurational C-Command and clause mate explanations where they motivate special configurational apparatus. They bring out important questions and illustrate insights in the generative treatments that led to an explanation

using a structurally articulated concept of an abstract subject (Chomsky). If such a form of abstract subject is articulated, it can explain these reflexives that otherwise appear not to be C-commanded by the referee as per the configurational solution. Both in accord and in contrast, where previous accounts posit an abstract structural subject, in the following we follow the intuition further to ask in what that special subject relationship consists.

In pragmatax, sentences are representations, and representations are of necessity about something. [17] For pragmatax the conceptual matter that a sentence representation is about is a structural primitive and definitional (recapitulating the Extended Projection Principle (Chomsky)). It characterizes the idea of 'subject' in grammatical descriptions. We posit that each sentence is a representational action about something, involving a linguistic action declaring what the subject of representation is. Each sentence therefore involves the linguistic action:

$assertSubjectOfRepresentation, or more briefly, $chooseSubject

Similarly, each sentence representation projects a characterization of the subject.

$assertPredicateCharacterizationofSubject, or $choosePredicate

It follows from this that a representation that has as its subject itself a representation would be a uniquely special case. The embedded representation must have a subject, and for picture/description examples it is clear that some subject object is being pictured/described. We conclude from this that the subject of 'picture of himself' is the thing being pictured, or in the case above (65) it is 'Al'. Under this analysis the above examples are neither exceptional nor require reliance on a configurational concept such as C-Command since the reflexive simply co-refers to the subject of the predication (representation). Nor is there a problem where the reflexive occurs in a subject clause preceding the overt occurrence of Al since 'himself' co-refers locally with the subject within the local clause rather than as it superficially might appear with the object position at a distance.

In the following example, on the other hand, 'himself' cannot co-refer to the subject of the description, since, while the description is about Al, the phrase 'Sue's description, at a superordinate level, has Sue as the grammatical subject displacing the logical default subject, Al, which otherwise would emerge as a trigger for reflexivization. The higher predication is that Sue is responsible for a description, and it is the description by Sue that is about Al. Since Sue appears in the vacuum created by the need for a subject, Al is suppressed as a subject of description

(68) * Al believes Sue's description of himself.

While this analysis differs from configurational analyses, it can also be seen as building on them and penetrating further in a constructive direction. Chomskyan analyses find great utility in the Extended Projection Principle, which asserts that sentences must have subjects. Our analysis here depends on such a principle and seeks to probe further by asking why sentences necessarily have subjects: in TG it follows from the understanding that sentences are representations. Furthermore it appears sentences can have only one subject, since, when a grammatical subject appears as in the previous case it displaces the logical representation subject for purposes of reflexivization.

Other examples involving reflexives that appear to precede their referee can be analyzed similarly using these notions of recessive representation subjects for the picture/description

[17] Thanks are due to John Hewson for private correspondence emphasizing the need for this perspective.

lexical class.

(69) Which book about himself did Anson write?
(70) Which book about herself did Jenny say that Anson had written.
(71) The picture of himself upset ed.
(72) ?I gave some pictures of himself to bill

The pragmatactic rules as presented work for a variety of different verbs and structures

(73) I gave Ed some pictures of himself
(74) Destruction by the city of itself
(75) Destruction of the city by itself
(76) Destruction of itself by the city

Case 3

It should be noted that where numerous more complex examples can be constructed based on (trans)formations such as passive, dative inversion, or question formation, a variety of unacceptable sentences can be explained as the misapplication of incompatible tools. This topic is beyond the scope of the discussion of the organic reflexive process and is discussed elsewhere. Here are some examples:

(77) *To whom did you recommend himself.
(78) ??Destruction by itself of the city
(79) ?*The book was given to himself by Al
(80) ?*The book was given by himself to Al
(81) *I recommended himself to Al.

Case 4

A further special case arises in (Adger, 2002) regarding a situation in which a gladiator is being awarded his own life:

(82) The consul's gift of the gladiator to himself.
(83) *The consul's gift of himself to the gladiator.

(84) The consul's gift to the gladiator of himself.
(85) The consul's gift to himself of the gladiator.

In these cases the recipient and patient are the same. It is a kind of a metaphor, being given one's self, since one cannot literally be given one's self. For a gladiator to receive himself is literally a convoluted thought. One cannot give the recipient to the recipient. The expectation is that the patient and recipient are different.

This reveals an analogical parallel to the less probable identity of reference in simple clauses where NPs are expected not to co-refer. Here it is the patient and recipient related in animpossibility, obviating the risk of ambiguity. This observation indicates that these cases can be subsumed under a single analysis. The actioneme analysis proposed earlier for clause domains can be used here by generalizing it as a function. Where we previously had a simple

declaration, $registerCorefAmbiguityRiskForClauseDomain, we can now revise this as an actioneme function: $assertCorefUnexpectedForDomain(DomainSpecification). Now the domain specification can be either "NPsInClause" or for a verb such as gift "PatientAndRecipient". In this way a single process can account for both cases.

Case 5

Also interesting is the case of comparatives in which –self forms can co-refer outside the local clause with some considerable degree of acceptability to some speakers:

(86) Al knew Sue was taller than himself.
(87) Sue said to Al Ed was taller than herself.
(88) Sue heard from Al Tom said to Bob Ed was taller than herself.

These are particularly interesting because of the impossibility a thing exceeding itself:

(89) *Sue is taller than herself.

Since a thing cannot exceed itself the risk of ambiguity in the local use of a pronoun is reduced, making the –self form without function. In these cases we see the scope of co-reference may be expanded to where the functional purpose of the reflexive becomes useful. We capture these circumstances by positing that the scope widening actioneme $assertCorefUnexpectedForDomain can be applied to include the containing clause, e.g. $ assertCorefUnexpectedForDomain(ContainingClause). To the extent that the corresponding examples such as above are acceptable, this actioneme may even be applied repeatedly, while also decrementing the felicity of the result as the longer distance potential for co-reference increases. It is beyond the scope of the present work to propose specific technical mechanisms to account for varying degrees of unacceptability, but this case is suggestive of various interesting possibilities to be considered.

Higher Level Constraints

Based on the foregoing, if we ask in general why the various ill-formed sentences discussed above are unacceptable in view of our imaginative ability to construct them, the answer comes down to the misapplication of tools. When a tool is applied where it is not called for, or when incompatible tools are used in an utterance, the result is an improper structure. These consequences can be made more explicit by reference to common sense constraints such as the following:

Required Purpose Constraint:

> Do not override an expectation where there is none, or, in general, do not utilize a tool where it's purpose will not be fulfilled

Vacuous Action Constraints[18]

[18]This might conceivably be collapsed with the Required Purpose Constraint, but our view is that many hundreds of analyses must be undertaken before the universal generality of actionemes might be well motivated.

Do not undertake a targeted action when there is no target to act on.

Such constraints vanish behind common sense insofar as natural language exists for a set of purposes and disregards for those purposes would naturally lead to dysfunctional generations.

Conclusions

In summary a concise simplified pragmatax solution handles the data involving four aspects of descriptive patterning: precedence, clause mate locality, C-command, and abstract subject relationship.

While our approach has been specifically to avoid the abstractness of a purely configurational approach where a preferred alternative actioneme tool analysis is attractive and well supported, we do not see the configurational approach to be wrong or misguided so much as an invaluable step in the progress of understanding. We inquire why C-Command should have the explanatory power that has been attributed to it and conclude that a true generalization has been indirectly represented, since the sisterhood referred to in C-Command is, a from another perspective, a relation to a clause predication, that is a saying of something about something. The configurational branching reflects the application of predicative tools. We propose that C-Command holds to the extent it does because it corresponds to discrete acts of clause predication.

While there is this overlay and congruence, we maintain the actioneme approach is attractive, because it explains why C-Command should hold, namely, that there are tools, such as reflexive constructions, that are constrained to act principally in direct predications. We posit that reflexives outwardly/explicitly revise a probability expectation of difference of reference. The scope of that expectation is within a clause predication. As such, we believe pragmatax provides an explanation why the C-Command configuration, fencing off the next higher predicate as it does, should be relevant. In this way TG can be viewed as a marginally more ambitious generalization to cover the data.

Furthermore, we believe the particular cases of picture/description reflexivization illustrate how the Extended Projection Principle points to a profound generalization over diverse phenomena in many languages. This being true, the extra measure of positing an actual process to choose the subject of each sentence would seem to advert quite directly to a linguistic reality.

Even the special exceptional cases of comparative and donor-recipient identity reflect back to lend support for the pragmatactic analysis.

To the extent that our arguments are successful in establishing the need for pragmatactic processes, TG illuminates questions about the architecture of competence. Whereas generative studies have traditionally separated syntax from motivational cognitive inputs, TG would delineate a severely restricted controlled vocabulary of linguistic intents and presents these as interconnected with a set of syntactic processes. The empirical basis of actionemes support the hypothesis that there is an additional component in the architecture of linguistic competence which is the source of certain of the structures that have traditionally been the subject matter of syntax.

17 Poetics as an Argument for Psychological Reality

Consider Blake's poem "Tyger" which John Ross (Ross J. R., 2000) has examined carefully for poetic structure. A hallmark of the work is the discovery of what Ross calls the 'corridor', a sort of 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. We observe the column of alliterations in the poem per Ross's insightful and deeply considered work, but also stacked actionemes, as illustrated below. The actioneme effectors are reflected on the

surface only as wh-words but the cold configurations of labeled hierarchies cannot do major duty to bring out the structure 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 surface structural analysis unconnected to a core meaning whose emotional potential stands as an essence of the poem. By circumventing what the poet seeks to do to the reader, one misses a core linguistic element. If language is hypothesized to involve a set of active tools, it is a good test of the proposal to see if it can partially explain the manner or enablement of art. We think a poem cannot easily be made just from phonology and configurational syntax. A poem is typically a series of impactful actions.

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

The Tyger

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 underlying the insertion of the wh words which corresponds to the action of asserting that something is unknown. The $declareUnknown (alias $positVariableToResolve) actioneme represents a Rossian corridor that most exactly overlays the wh word syntactic column. It's perhaps anathema to think of a poem as constructed by a process devoid of artistic meaning intent. The repetition of the action of affirming the presence of the unknown is near the heart of this poetic creation.

There is a resonant rhetorical effect here from the presence of repeated questions around an integrated theme. $accumulateRelatedQuestions is a second order self-referential actioneme which builds the literary tension. Note that Blake's use of wh-words reflects exactly such a column/corridor, and that the syntactic pattern interplays with the phonological. To attribute the poem's power only to the colder insertion of wh items, however, is to abstract it in a way that for poetry lacks the essential emotional dimension.

For present purposes there is an overarching point to be made, as subtle as it is potentially powerful, namely, that there is an experience in reading the poem, verifiable simply by surveying good readers of poetry, that not only is not reflected but cannot be reflected by syntactic wh insertion or by any theory of syntax that lacks something like the actioneme. Is there evidence for the reality of this $declareUnknown (alias $positVariableToResolve) actioneme? Certainly, the answer is yes because any sentient able reader of the poem must recognize that the essence of the artistic experience is the repetitive and accumulative pounding of the mysterious unknowns. If we are sensitive 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 evidence for a syntactic approach but, still, 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 pragmatic cognitive instruments.

To summarize, as a provocation to emphasize the nature of the material we are dealing with, our analysis holds that the actioneme $declareUnknown (alias $positVariableToResolve) can be observed at work in some circumstances completely apart from everyday utilitarian syntactic considerations. It is evident in art. Once the linguistic action dimension is recognized in linguistics, its power, to the extent it is real, should become pervasively evident. To deny it would be as to tell a viewer using a new high 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. Certainty
Verb Subcategorization

We consider another case of complement subcategorization for verbs. We illustrate that both verbs and complements can activate their own possible actions and these must be compatible if the selected tools are to be used in tandem.

Verbs are subcategorized for propositions, exclamatives and questions, but licensing a complement versus noun phrase is separate. (Johnson, 2004)

(90) a. John asked me what the time is/the time (Question)
(91) b. I'll assume that he's intelligent/his intelligence (Proposition)
(92) c. Bill couldn't believe how hot it is/the heat (Question)
(93)
(94) a. John wondered what the time was/*the time (Question)
(95) b. I'll pretend that he's intelligent/*his intelligence (Proposition)
(96) c. Bill complained how hot it was/*the heat (Exclamative)

Thus it might be supposed that categorial selection could not be derived in a straightforward manner from semantic selection classes.

In our framework verbs are tools designed for purposes, so it is elemental that they could be for asking, asserting, doubting, questioning, exclaiming and so forth. These classes follow from the basic data of observation. A benefit of our approach is that the licensing of simple noun phrases falls out from the action analysis. While 'ask', 'assume', and 'believe' involve elements with certainty assumed to be resolved, 'wonder', 'pretend', and 'complain' report inherent continued uncertainty. We propose that where the latter set is used a linguistic actioneme $certaintyNotResolved is observed. We similarly observe the opposite actioneme $certaintyResolved for the nominals: "the time", "his intelligence", and "the heat". It is perhaps not surprising that there would be a tendency to allow situations of resolvable certainty to be packaged and summarily presented in nominal form, while uncertainty benefits from the increased flexibility of the fuller descriptions in a clause. We posit the pragmatax actions: $implyResolvedCertainty for the nominals and $leaveCertaintyUnresolved for the clauses, and propose that these condition the constructions under consideration.

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

(97) Mary promised me that she would sing.
(98) Mary promised me the ring
(99) Jerry told me that he can't stand Mary's singing.
(100) Jerry told me the story.
(101) Sheila showed me that she cares.
(102) Sheila showed me her concern.

Contrast those with the following verb of unresolved certainty:

(103) a. Mary persuaded Bill that he should go.
(104) b. * Mary persuaded Bill the fact

The proposed patterning is that a tool of unresolved certainty (verb) does not pair naturally with a tool of resolved certainty (nominal): operational classes are not co-selected when they work in opposite directions, as in this case where a certainty conflict constraint is observed. We observe that any attempt to account for such data by means only of syntactic configuration must necessarily bury and hide transparent intentional processes

18 Placement Alternations

The phrase “at noon” seems often to follow the verb object. (data from (Johnson, 2004) p. 46)

(105) a. Jill ate it at noon.
(106) b. * Jill ate at noon it.
(107) a. Jill ate spätzle at noon.
(108) b. * Jill ate at noon spätzle.

But there are multiple conditions affecting acceptability that need to be considered:

(109) a. Jill ate the rotting kumquats.
(110) b. Jill ate at noon the rotting kumquats.
(111) Jill ate the rotting kumquats at noon

(112) *Jill ate at noon the soup.
(113) Jill ate at noon a bowl of rancid wonton soup

These illustrate well known heavy NP structures whereby “at noon” can be located closer to the verb in the aftermath of the creation of a heavy object, i.e. one that we might characterize as $describeUnusualObjectWithLongDescription. Once this pragmatic action is selected, with its sizeable resource allocation and implied processing, it could be considered a natural consequence that sentence planning might trigger a compensatory (trans)formation tool in a strategy to keep the attributes of the verbal modification unit contiguous and easily associable. We might refer to this as $reassociateVerbalModifier, a (trans)formation which moves the verbal modifier back close to the verb where it is most easily associated. 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.

In summary, we posit here the movement of the time phrase to allow easier association with the verb. These cases are analyzed in a way not significantly different in mechanics from the traditional rule of syntax-configurational Heavy NP Shift, with the difference that we see it as a tool to extricate a complex characterization away from the verb so that the association between the time phrase and the verb is not weakened, obfuscated or rendered ambiguous.

Note the similarity of this process to the alternations of dative shift:

(114) She gave the book to the man.
(115) She gave the man the book.
(116) ?She gave to the man the book.
(117) ?She gave the old-fashioned book I brought back from France that didn't have the pages cut to the man.
(118) 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 mailed.

(119) *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 mailed to the man.
(120) 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 mailed.

Dative shift is similar 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 seems to be evidence that the $reassociateVerbalModifier family of similar operations can serve multiple functions. In the case of dative shift the trigger can be not only a reorganization to avoid a difficult to interpret dispersal of verbal information, but, alternatively, to implement a possible re-ranking of affiliations of direct and indirect objects with the verb. In this case the hypothesis is that the speaker action is $createPrimaryAssociation that effectively bonds or blocks bonding of constituents as a measure for speaker intent.

Note also a similar phenomenon cited by (McCawley, 1998) p. 66 as a "constraint against subordinate clauses in the middle of a surface constituent"

(121) Bill told that lie to Alice
(122) *Bill told that Fred had quit school to Alice.
(123) Bill told Alice that Fred had quit school.

The actioneme approach would seem to resolve difficulties with this and other analyses.
Here is the section from (Johnson, 2004) p. 83 that summarizes the theoretical importance of the data: "the conditions governing these preferences come from something other than syntax proper.[1] "

Obligatory Heavy NP Shift: finite CPs:

(124) *Max [said that pigs fly] yesterday.
(125) Max said yesterday that pigs fly.

Optional Heavy NP Shift: "full" NPs:

(126) Max visited the students yesterday.
(127) ? Max visited yesterday the students.

PPs:

(128) Max talked to the students yesterday.
(129) Max talked yesterday to the students

Blocked Heavy NP Shift:

Pronouns:
(130) Max visited him yesterday.
(131) * Max visited yesterday him.

“Short” NPs:

(132) Max visited children yesterday.
(133) ?*Max visited yesterday children.

We quote Johnson on the value of a solution: “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. “

The answer we provide is that (trans)formations are tools that exist to implement specific effects and various tools are not functionally compatible with other tools. Our approach has been to loosen the syntactic formalism as a necessary step in tightening the constraints on universal grammar and providing an alternative pragmatactic approach.

19 Complement versus Adjunct in Noun Phrases

Now we look at the contrast between complements vs. adjuncts as presented in (Carnie, Syntax: A generative introduction, 2007).

Consider what makes a thing a book. It has to have something like potential reading material on pages; this is essential. Yet there are many variants of books whose differences don't involve the essentials.

(134) The book of poems with a red cover
(135) *The book with a red cover of poems.[19]

The complement 'of poems' modifies an essential part of the definition, i.e. a book contains reading/viewing material by definition.

(136) It's the same book with a different color cover.
(137) *It's the same book by a different author with different content on a different subject.

A book contains reading/viewing material such as poems as an essential but color is not so involved.

The actioneme $instantiateAnEssential (‘of X’) can only be applied to an essential or its part, not an expanded derivative such as “book with a red cover”. A book can still be a book without a (red) cover. So if we attempt to instantiate or elaborate a definition on a decorated base that no longer has just definitional material ($addDescriptionBeyondEssential) the result is artificial. The constraint is:

Constraint on Elaboration Beyond Essential

[19] 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.

Do not to apply a tool elaborating a definition after the definition has been elaborated with non-definitional material.

The practical nature of the constraint is perhaps evoked in a crude metaphor: one might not apply a primer coat after the application of a finish coat of house paint. This illustrates how direct solutions via pragmatactics can become available where difficulties about in a framework with centralized configurational syntax.

20 Auxiliary Movement and WH in Questions

[NB: This section is under revision in the extended document.]

21 Islands and Embedded Wh Constructions

[NB: This section is under revision in the extended document.]

22 More on Island Constraints

[NB: This section is under revision in the extended document.]

23 Stevens Poetry

[NB: This section is under revision in the extended document.]

24 Postal Puzzles

Paul Postal has remarked on the following profoundly puzzling data on his web page. (Postal, 2014) We break the example sentences out by actioneme to seek a solution. We propose two types of 'reach' predicate, $assessAgentActionSuccessOnPatient and $assessProcessGoalSuccess:

(138) The director never reached Adam.
$ assessAgentActionSuccessOnPatient
$reportOnAgentActionTowardGoalSuccess

(139) That book never reached Adam.

$assessProcessGoalSuccess
$reportOnPatientProcessTowardGoalSuccess
(Lacks agency)

(140) Adam was never reached by the director.
Passive=$promoteAgencyParticipantToFocus
(141) *Adam was never reached by that book.
No agent complement, i.e. patient in a process without agency.

There is a challenge to explain why the last example is not acceptable. The sentences have been annotated with actionemes including the passive (trans)formation tool. Passive is a tool to promote a participant in an agency action to the fronted focus position. ($bringPatientIntoAgencyEventFocus)

If a structure does not involve causal agency the passive tool cannot apply. If this is not present as in the last example, there is no role for the application of the (trans)formation.

Agent Front Focus Tool (Passive) ($bringPatientIntoAgencyEventFocus)

Promote the agency participant to front focus. As a mechanism to allow focus on the various participants in a causal agentive event, this tool cannot operate without causal agency.

The data set below allows for a similar explanation. The examples have been annotated with indications how agency and the Agent Participant Raising (trans)formation tool can be used to account for the alternations. Here we observe that goal raising cannot apply if there is no agency.

(142) Adam was difficult for the director to reach.
AgentParticipantRaising requires agent
(director reached Adam: an agent)
(143) *Adam was difficult for that book to reach.
No AgentParticipantRaising operation if no agent
(book reached Adam: no agent)
(144) Texas was difficult for him to reach
Goal raises if there is an agent.
(he reached Texas:an agent)
(145) *Texas was difficult for the book to reach.
Goal cannot raise without agency.
(book reached Texas)

Similarly, the ‘reaching of.x.by y’ and ‘unreachable by’ constructs require an agency participant.

(146) the reaching of Adam by the director
(147) *the reaching of Adam by that book

(148) Adam was unreachable by the director.

(149) *Adam was unreachable by that book.[20]

We can again account for the data by positing that 'reach x by' requires an agency participant.

It is useful to ask why in each of the foregoing cases we observe constructions requiring agency. For all the constructions considered a non-agent element is presented in a focus position while the agent itself retires to a less prominent position. The verb 'reach' carries an implied notion of possible success for the result the agent seeks to achieve. These facts suggest that the tools presenting a non-agent in relative focus likely exist as a means to communicate a central role for the non-agent element in the agent's pursuit of an intention. Under this interpretation, it is plausible to assume there exists a class of tools (constructs and (trans)formations) underlying these examples which puts into focus a non-agent element seen as important to the agentive action: $focusElementImportantToAgentiveIntent. In this way pragmatactic analysis can open new avenues of analysis and understanding.

25 Negative Polarity Items

It is a challenge syntactically to exclude the positive form for negative polarity items.[21] (Carnie, Syntax: A generative introduction, 2007) (p 133)

(150) I didn't have a red cent.
(151) I hadn't seen her in a blue moon.

We must explain the unacceptable:

(152) *I had a red cent.
(153) * I. didn't have 5 red cents
(154) * I had seen her in a blue moon.
(155) * I hadn't seen her in 2 blue moons.

Consider the actionemes. 'red cent' reflects a tool that utilizes a rhetorical symbol for an amount rather than inserting an actual monetary amount.: $addHyperbolicRhetoricalSymbolForVerySmallestAmount.

The article 'a' instantiates $assertSingleItem. Combining these we get salient focus on there being only one, the minimal amount. These combine with $denyHaving ('not have') to yield the

[20] This related data is unclear so is not considered.

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

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

[21] Note 'even' can be added. Note also: *I didn't have 5 red cents.

derived tool $denyEvenMinimumViaSymbolForVerySmallestAmount. $denyHaving makes use of the rhetorical device. This is a plausible account of the acceptable negative polarity sentences above. But what about the ill formed ones?

Why would one use $ addHyperbolicRhetoricalSymbolForVerySmallestAmount and $assertSingleItem without further purpose such as negating it rhetorically? If one wanted to assert the holding of a small amount its value could be used, or e.g. 'almost nothing', but here there is not an amount but only a symbol for a radically small amount. An amount could not even be implied because there is no such value attached to what is rather only a rhetorical device. There is evidence here for a constraint on actionemes: "Don't add rhetorical elements and then not use them".

To elaborate in more detail, 'a red cent' is rhetorically useful as a worthless mythical absolute minimal symbolic denomination/ For stylistic effect, some tools together implement a useful construct. There is no role for $ addHyperbolicRhetoricalSymbolForVerySmallestAmount ('red cent') if it is not put to some use.

Here is similar construction illustrating the same relationships:

(156) He doesn't have a penny to his name
(157) * He has a penny to his name

This analysis suggests that negative polarity is not a phenomenon of configurational syntax but one of sentence construction actions. A similar analysis applies to 'blue moon'.

Lawler offers a collected overview of negative polarity with key examples which we consider below. (Lawler)

(158) He didn't ever see it.
(159) * He ever saw it.

Also 'ever the fool' means without end, over endless time

'ever' = $assertOverTimeEndNotReached
Negation is present $assertNotSee

For stylistic effect, these tools together implement $assertNotSeeOver-TimeEndNotReached. There is no role for $ assertOverTimeEndNotReached ('ever) if it is not put to some use since the same circumstance is effected by use of $assertNotSee in its bare form. This is an example of the

Superfluous/Null Construct Constraint

Do not introduce an actioneme if the result would be the same as if it were not introduced.

Now consider:

(160) He hasn't called in weeks/hours/days/years/eons.
(161) *He called in weeks.

"in weeks" = $assertUnexpectedlyLongTime
Negation is present in $assertNotCall

For stylistic effect, these tools together implement $assertDidntCallOverLongTime. There is no role for $assertUnexpectedlyLongTime ('in weeks) if it is not put to some use. Without negation the actions sum to an effect whereby the event happened at any point during a time longer than would be expected, which leaves open the possibility that it happened within the expected time frame. This also is ruled out by the Superfluous/Null Construct Constraint.

Consider also that positive polarity items are unacceptable when negated:

(162) I would rather have pie.
(163) * I wouldn't rather have pie. (Except as echo.)

'rather' = $assertPreferredAlternative

This actioneme is incompatible with a negative insofar as it convoluted to propose an alternative in order not to use it, i.e. it avoids wasted effort to set up a circular disuse of an alternative.

(164) I sorta like cake.
(165) * I don't sorta like cake.

'sorta' = $assertIndefinitePartialDegree

This is ruled out because one must avoid building extra detailed structure for a partial degree of predication, when the predication is vacated by negation. This illustrates a constraint to rule out building gratuitous structure for no purpose. When structure is created it must be utilized.

These positive and negative polarity phenomena indicate a need for a constraint on the combination of actionemes in building sentences:

Wasteful Structure Constraint

> Don't build complex actioneme structures then not use them, or contradict them, or circumvent them.

In reality the operative factor in polarity patterning is not negation, as the name negative polarity suggests, but useless elaboration. Negation rather is a valid form of use.

Now consider examples from (Giannakidou), used to argue that some current explanations of negative polarity, i.e. downward entailment and nonveridical conditioning, don't explain the full

range of data.

Analysis of logical implication in polarity constructs has led to a hypothesis that negative polarity items are sanctioned by downward entailment, but Giannakidou cites counter examples lacking negation that are not downward entailing: (Giannakidou)

(166) He doesn't have any sense.
(167) * He has any sense

'any' = $anticipateAtLeastSomething
Negation is present in $assertNotHave

For stylistic effect, these tools together implement $assertDoesntHaveAbsoluteMinimum. There is no role for $anticipateAtLeastSomething ('any) if it is not put to some use since without negation it asserts vacuously that what might occur in bland circumstances is what is expected. This amounts to insinuating an attitude into the situation that has no purpose since circumstances are such that it doesn't apply.

Consider also:

(168) Most children with any sense steal candy.
(169) Children with any sense steal candy.

Here we have a similar situation, susceptible to the foregoing actioneme analysis, except that negation is not overt but implied by the partitive formation which countenances children of different types. A varied collection can involve individuals of varying degrees sub-selected by having or not having the anticipated sense so there is a useful role for the actionemes.

Now consider an idiom showing actioneme structure similar to 'any' above.

(170) He wouldn't lift a finger.
(171) * He would lift a finger.

'lift a finger' = $positSymbolOfNegligibleEffort
Negation is present in $assertNot

For stylistic effect, these tools together implement $assertNotMakeNegligibleEffort. There is no role for $positSymbolOfNegligibleEffort ('lift a finger) if it is not put to some use.

These constructs are in the family of actionemes used for disparagement, referred to as 'minimizers'. Note that there exist also disparagement contexts that do not involve explicit negation, but do so implicitly by dividing groups of people into classes with and without the property, thereby introducing the implied negation:

(172) Most people who would lift a finger have their own reasons.
(173) People who would lift a finger have their own reasons.

Also from Giannakidou, consider that polarity items can be licensed in interrogative and conditional environments.

(174) Ruth didn't lift a finger to help.
(175) *Ruth lifted a finger to help.

Anticlimax: This is ruled out as an unused minimizer for dramatic effect.

(176) Ruth doesn't give a damn what I think.
(177) *Ruth gives a damn what I think.

Anticlimax: This is ruled out as a superfluous, unused minimizer introduced for dramatic effect.

These negative polarity items are sanctioned in questions and conditionals:

(178) Did Ruth lift a finger to help?

In the question, 'lift a finger' arises in the context of interrogative possibility that a dramatic minimizer could be appropriate.

(179) If you give a damn, you'll listen.

Here too the possibility is raised by the question that dramatic minimization could be appropriate since every question raises the possibility of a positive and a negative.

Giannakidou cites data that are a problem for both the nonveridical and descending entailment conditioning of polarity items. Consider 'only' and emotive factive verbal contexts:

(180) I am glad he said a word!
(181) 'I'm glad we got any tickets.
(182) Mary regrets that she lifted a finger.
(183) Only Mary {gives a damn/said anything}

Both 'glad' and 'regret' are $assertPossibilityofAlternative so the dramatizing minimizer is licensed by implication of the negative possibility. Similarly, 'only' asserts the possibility of others with different properties so can contrastively utilize the dramatizing minimizer.[22]

In summary, we have observed that cases of negative and positive polarity can be understood by means of analysis of the linguistic actions involved in utterances, and that a configurational syntax account, which has been uncertain and problematic, is challenged by the empirical potential of the pragmatactic perspective.

26 Syntax Emerging from Action Semantics: Lexical Selections & Categorizations

[NB: This section is under revision in the extended document.]

[22] We do not consider scalarity, which Giannakakos rejects

27 The Ambition and Limitation of Pragmatax Constraints to Displace Mechanisms of Syntax

[NB: This section is under revision in the extended document.]

28 Even/Only Phenomena

[NB: This section is under revision in the extended document.]

29 Covert Modification in Floated Quantifiers: Iteration and Totality

[NB: This section is under revision in the extended document.]

30 Testability, Verifiability, Formalism

[NB: This section is under revision in the extended document.]

31 Theoretical Status, Universals and the Architecture of Competence in the Chomskyan Framework

[NB: This section is under revision in the extended document.]

32 Toward a TG Generative Framework

[NB: This section is under revision in the extended document.]

33 Extending the Minimalist Rule Framework for Pragmatax TG

[NB: This section is under revision in the extended document.]

34 Relationship of TG to Syntax, Semantics and Pragmatics

[NB: This section is under revision in the extended document.]

35 Relationship to Speech Act Research

[NB: This section is under revision in the extended document.]

36 Dynamic Semantics and Discourse Representation Theory

[NB: This section is under revision in the extended document.]

37 Donkey Pronouns, Cognitive Pragmatics, and Discourse Representation Theory

[NB: This section is under revision in the extended document.]

38 TG and Information Structure

[NB: This section is under revision in the extended document.]

39 Wh-islands in degree questions

[NB: This section is under revision in the extended document.]

40 Rhetorical Structure Theory[23]

[NB: This section is under revision in the extended document.]

41 Stronger Constraints on Modeling the Faculty of Language[24]

Analysis of particular linguistic problems in the TG framework yields a set of putative constraints on linguistic structure formation. We have proposed a preliminary set of constraints at the level of cognitive intentional formation:[25]

[23]Computational approaches generally do not aim so directly toward formulations of psychological theories for the faculties of language. We limit ourselves by not covering other approaches connected with machine computation, such as computational semantics, computational pragmatics, bidirectional optimality theory, spoken dialog systems, and Bayesian methods in general.

[24]Computational approaches generally do not aim so directly toward formulations of psychological theories for the faculties of language. We limit ourselves by not covering other approaches connected with machine computation, such as computational semantics, computational pragmatics, bidirectional optimality theory, spoken dialog systems, and Bayesian methods in general.

[25] Some of these constraints are discussed only in the expanded version of this paper.

- Single Focus Constraint
- Overlapping Exclusion Constraint
- Cross Purpose Constraint
- Required Purpose Constraint
- Vacuous Action Constraint
- Constraint on Elaboration Beyond Essential
- Unknown Specification Constraint
- Unknown Interrogation Constraint
- Likelihood Uncertainty Constraint
- Subordinate Focus Constraint
- Conjunction Constraint on Unknowns in Assertions
- Superfluous/Null Construct Constraint
- Wasteful Structure Constraint
- Specific Expectation Constraint
- Incompatible Estimation Constraint
- Advanced Notice Quantification Constraint
- Imaginary Construct Sequence Constraint
- Imaginary Construct Differentiation Constraint
- Concept Negation Closure Constraint
- Conflicted Determinacy Constraint
- Vacuous Judgment Constraint in Non-negatable Circumstances
- Compatible Modification Constraint
- Conflicted Determinacy Constraint

These constraints remain individually to be validated in further studies over time but even in their first proposals they accumulate to attest to a reality in the faculty of language that underlies rapidly learned creative language use. They clearly overlap in ways that suggest that some of them may eventually be combined to produce a smaller more general set. These constraints combine to impose more concentrated and stronger limitations on the notion of possible human language than those resulting from the analysis of syntax-centric configurational rules without incorporating factors of linguistic action and intent. It is evident from considering the constraints presented that many of them may be conflatable in a strictly formal analysis to a single meta constraint:

> Linguistic Intention Umbrella Constraint
>
> In selecting an element for construction of a sentence to represent meaning do not make a choice which conflicts in intent with another element chosen for this sentence.

This general conclusion places the present work distinctly within the Chomskyan paradigm, even if it proposes a subparadigmatic shift in perspective, because stronger constraints on the characterization of the human faculty of language contribute to an understanding of infinite linguistic creativity from finite resources and how it is that children learn language so quickly

when the data experience to them is so limited.

42 Summary and the Architecture of Competence

See the Abstract in Section 1 for a high level summary.

[NB: This section is under revision in the extended document.]

43 Shortcomings and Future Work

[NB: This section is under revision in the extended document.]

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