1. Theoretical Preliminaries

(1)(a) As a means of symbolic interaction, language consists in semantic structures, phonological structures, and symbolic links between them.

(b) Simpler structures are connected by relations of symbolization, composition, and categorization to form structures of greater complexity.

(c) A language is a vast assembly of connected structures, portions of which are activated in the assemblies representing particular expressions.

(d) Inherent in these symbolic assemblies, and forming a continuum, are the structures comprising lexicon, morphology, syntax, and even discourse.

(2)(a) Assemblies are partially organized hierarchically, since connecting two structures results in a higher-level structure with the potential to participate in further connections.

(b) The same elements are often grouped simultaneously in conflicting ways for different purposes. E.g. ((pencil)(s)) vs. ((pen)(cils)); ((a flock) (of geese)) vs. ((a flock of) (geese)).

(c) Time is a basic dimension of semantic structure just as it is for phonological structure.

(d) Sequence of mental access contributes to linguistic meaning and represents the essential conceptual import of various phenomena (e.g. topic and possessive relations).

(e) Static situations are apprehended through conceptual analogs of perceptual scanning (e.g. The roof slopes steeply {upward / downward}; the inherent directionality of scales).

(3)(a) A structure fulfills a certain function (a task to be accomplished). Semantic functions are primary: expressions are used to symbolize meanings (not to make sounds meaningful).

(b) An element’s function can be examined from two perspectives: what it accomplishes intrinsically (e.g. pencil invokes a particular type of object) vs. its role in a larger structure (in this pencil, it contributes to the higher-level task of nominal reference).

(c) Lexicon and grammar effect the implementation of semantic functions. These functions are more fundamental and more consistent than their implementations.

(d) The structures fulfilling a certain function may have nothing else in common (e.g. Merkel, three, a pencil, those on the porch, being so stubborn, that cigarettes cause cancer).

(e) Semantic functions are linguistic units in their own right, included in assemblies as schemas for their implementing structures (which they serve to categorize).

(4)

(a) Alternative Subfunctions

```
         F
       /   \
  F1     F2
  / \    / \  
 a  b  c  a  b  c
```

(b) Component Subfunctions

```
         F
       /   \
  F1     F2
  / \    / \  
 a  b  c  a  b  c
```
(5)(a) Nominals have the intersubjective function of momentarily directing attention to a particular thing, out of all those we are capable of conceiving.
(b) Determiners are grounding elements: they indicate the referent’s epistemic status vis-à-vis the ground (i.e. the speech event, the interlocutors, and what they presumably know).
(c) Semantic functions not only motivate implementing structures but are immanent in them. A functional description is not given in addition to a structural description but inheres in one.
(d) But functions are to some extent independent of particular structures. Besides determiners, grounding is effected periphrastically by possessives (Sam’s friend’s apartment).
(e) In many languages, lexical nouns occur alone in typical nominal roles. They are grounded by being interpreted as definite or indefinite in the discourse context. So in terms of semantic function they qualify as nominals even without a dedicated grounding element.

(6)(a) A function is not always effected by a single element or even made explicit. It is commonplace for structures to assume new functions without any overt marking.
(b) There were four Davids on the soccer team I coached.
(c) the sun, the moon, the president, the pope, the party [in a communist country]
(d) Functional reorganization may just consist in adding another functional layer, but can also result in cross-cutting organizational schemes (e.g. a flock of geese [(2)(b)]).

(7)

(8)(a) Alternative means of fulfilling a given function constitute a system of opposing elements.
(b) Systems vary in degree of integration, based on the number of members, characterization in terms of a limited number of features, and the importance of oppositions.
(c) There is often a core system with a function that is more specific and more basic.
(d) The determiner system serves the function of nominal grounding. Its core is the demonstrative system, with the more specific function of deictic grounding.
(9) (a) Core systems exemplify **baseline** and **elaboration (B/E organization)**, a pervasive feature of linguistic and conceptual structure. Other examples: a prototype in a complex category; a stem and its derived forms; unmarked and marked members of a privative opposition.

(b) A baseline structure has some kind of **priority** vis-à-vis its elaborations, being more fundamental and providing the basis for their emergence.

(c) A baseline is simpler than its elaborations, which require **additional conceptual resources** affording a **wider array of options**. They represent successive **strata**: ((B)E).

(d) B/E organization represents a preferable alternative to positing **zero** elements.

(10)

![Diagram](image)

2. **Relative Quantifiers**

(11) (a) **Relative quantifiers**: *all, most, some, no, every, each, any

(b) Non-occurrence as **clausal predicates**: *Our problems are {all / most / no / every / each}.

(c) Mutually exclusive with **definite grounding**: *those all cats; *our some problems; *the no houses left standing; *the any wine we drank; *this every woman.

(d) The nominal referent is usually **virtual**: *In the room were most cats.

(e) They are characterized in relation to the **maximal extension (ME)** of a type.

(12) (a) When truly maximal and unrestricted (the default), ME is a virtual entity (like **infinity**). It is not limited to any particular time or place, nor to instances that have actually existed.

(b) ME is sometimes interpreted within a limited **scope of conception**, in which case it might be called the **contextually relevant extension (RE)**. This can be actual instead of virtual.

(c) *The cruise ship sank quickly, but {all / most / some} passengers were rescued.

(13) The system of relative quantifiers divides into two basic subsystems.

(a) **Proportional** quantifiers occur with mass nouns, including plurals: *all {milk / cats}, most {milk / cats}, some {milk / cats}, no {milk / cats}, but *all cat, *most cat.

(b) **Representative instance** quantifiers occur with singular count nouns: *every cat, each cat, any cat, but *every {milk / cats}, *each {milk / cats}.
(14) Proportional quantifiers

(a) all  (b) most  (c) some  (d) no

ME

(15)(a) For all, ‘=’ indicates that the profiled mass is equal to ME. They coincide but are functionally distinct: the nominal referent and the basis for its quantification.

(b) Like negation in general, no invokes a virtual entity but specifies that it is actually excluded from reality—a kind of mental cancellation (X). We found no {milk / cats} in the kitchen cancels the conceived event by specifying that the quantity involved is zero.

(c) All and most are most clearly proportional—like filling a container or almost filling it. Some and no are proportional in a more abstract sense: no particular proportion or zero proportion. The container is either empty or has something in it.

(d) The empty/non-empty distinction holds for single objects as well as masses. Some and no can thus occur with singular count nouns: Some stranger fixed our car; No cat can eat that much tuna. Quantity is not an issue with such nouns—the number is always ‘one’.

   (i) Some emphasizes indefiniteness (like an emphatic version of a).

   (ii) No evokes a single instance but cancels it, so the actual quantity is zero.

(16)(a) Representative instance quantifiers occur with singular count nouns even though the property described in the clause applies to all instances of the type. The profiled instance is a virtual one construed as being representative.

(b) These quantifiers incorporate imagined scenarios representing basic ways of accessing a collection of objects so that all of them can be “reached”. These objects are all conceived as corresponding to the profiled instance and are therefore covered by the generalization.

(c) We can access a set of objects by viewing them simultaneously (every), by examining them sequentially (each), or by making a random choice (any).

(d) These are only virtual activities, invoked for apprehending the connection between the profiled instance and those covered by the generalization. Still, they result in subtly different meanings that help explain the uses of the quantifiers.

(17)(a) The air is so clear that you can see {every / each / any} peak in that mountain range.

(b) Take a card—{any / *every / *each} card. [magician performing a card trick]

(c) She questioned {?all the boys / ?every boy / each boy / *any boy} in turn.

(18)(a) Relative “quantifiers” do not really specify quantity, but degree of universality in ME.

(b) All, every, each, and any are universal. No specifies universal exclusion. Most approximates universality. Some is quite vague about quantity (excluding only zero).

(c) Baseline grounding pertains to identification (definite vs. indefinite). Quantifiers belong to an elaborated grounding system based on the broader notion of epistemic status.

(d) They provide an alternate form of epistemic control: generalizations pertaining to an open-ended set of entities (as opposed to specific knowledge about identified referents).

(e) My cat is lazy is definite and quite specific, but applies to only one creature. Most cats are lazy is very widely applicable, even if it leaves some uncertainty in any particular case.
3. Absolute Quantifiers

(19)(a) **Absolute quantifiers**: many, much, (a) few, (a) little, three, several
(b) Occurrence as **clausal predicates**: Our problems are {many / few} / three / ?several.
(c) Co-ocurrence with **definite grounding**: those three cats; our many problems; the few houses left standing; the little wine we drank.
(d) The nominal referent is usually **actual**: In the room were many cats.
(e) They are characterized with respect to a **scale of measurement**.

(20)(a) The core quantifiers are part of a massive system whose members differ in degree of entrenchment and grammaticization. There are productive patterns for forming new ones.
(b) three > twenty-five > two hundred > four hundred seventy-nine
(c) a lot of X > a gallon of X > several tons of X > four hundred seventy-nine bags of X
(d) A lot of (compressed to alotta) is taking over from much and many as a core element.
*We drank {a lot of / ??much} wine. He can eat {a lot of / ?many} bananas.*

(21) Core elements differ in regard to a number of parameters:
(a) The **measurement scale** can either be quantized, with discrete values, or continuous.
(b) The **measured mass** can either be plural or continuous.
(c) The **point of reference** can be the scale’s origin (o) or a norm (n).
(d) The **scalar assessment** (direction of mental scanning) can be positive or negative.

(22)

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<thead>
<tr>
<th>Measurement scale</th>
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<tr>
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<table>
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<th>Scalar assessment</th>
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<td>norm</td>
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<tr>
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<tr>
<td>few, little</td>
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(23)

<table>
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<th>(b) several</th>
<th>(c) many</th>
<th>(d) much</th>
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<td>(f) little</td>
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</tbody>
</table>
(24) Few and little are generally considered negative because they occur with negative polarity items, like unstressed any and give a damn.
(a) He really does not have any friends. [*He really has any friends.]
(b) I don’t really give a damn about politics. [*I really give a damn about politics.]
(c) Few students have any interest in / give a damn about politics.
(d) Little interest in the topic was shown by any students.

(25) Other absolute quantifiers, including a few and a little, are non-negative:
(a) Few guests consumed any wine.
(b) Little wine was consumed by any guests.
(c) *A few guests consumed any wine.
(d) *A little wine was consumed by any guests.
(e) {Many / A lot of} guests drank (*any) wine.
(f) {Much / A lot of} wine was consumed by {the / *any} guests.

(26)(a) Any conception of ordering or directionality consists in sequenced processing activity at some level of organization (often below the threshold of awareness).
(b) A measurement scale arises through the summation of a series of comparisons, each registering a value larger than the preceding one. Though below the level of conscious awareness, this scanning from value to value gives the scale an inherent directionality.
(c) The directionality inherent in the scale itself has to be distinguished from the directionality of a scalar assessment—how we access the scale to specify a quantity.
(d) Usually this assessment consists in scanning that conforms to the scale’s inherent directionality. Few and little are negative in the sense that the assessment reverses it.
(e) A few and a little invoke the quantity specified by few and little but reconstrue it in positive terms, as departing from the origin. This is done by a, related to its count-noun use of indicating one instance of a type—a single positive step along the counting scale.

(27)

(a) Paradigmatic view
(b) Systemic view
(c) Paradigmatic view
(d) Systemic view
4. Quantification and Grounding

(28)(a) Our problems are {many / few / three}.
(b) those three cats; our many problems; the few houses left standing; the little wine we drank
(c) three cats; many problems; few children; little success
(d) {those / Ø} three cats; {the / Ø} many problems; {his / Ø} few children
(e) Indefinite articles: a cat; {sm / Ø} cats; {sm / Ø} water

(29) Arguments against positing a zero grounding element:
(a) Zero elements are theoretically suspect and ought to be avoided.
(b) A nominal can be grounded, in the sense of indicating the referent’s epistemic status, even without a separate grounding element (semantic function vs. structural implementation).
(i) When it refers to ME as an undifferentiated whole, a mass noun qualifies as a nominal by virtue of having unique reference: She hates cats; Wine is good for you.
(ii) When non-unique, the referent of a bare mass noun can be delimited and identified by the content of the clause it appears in: There were cats in the kitchen.
(c) Unlike the putative Ø article, sm does not occur with absolute quantifiers: *sm three cats; *sm many problems; *sm few children.
(d) The fact that sm is mutually exclusive with absolute quantifiers suggests that they, like sm, should be considered grounding elements.

(30)(a) Our problems are several. *Our money is {much / little}.
(b) *the few houses; *the little wine; *our little gasoline
(c) A: How many apples did he eat?   B: He ate {three / *the green ones}.
(d) A: Which apples did he eat?   B: He ate {*three / the green ones}.
(e) those three women standing at the bar    those four women sitting at the table
(f) A: See those women?   B: Which ones?
   (i) A: The ones {standing at the bar / sitting at the table}.
   (ii) A: *The {three / four}.

(31)(a) Relative and absolute quantifiers share the following properties: (i) quantifying masses; (ii) usually being initial in a nominal; (iii) being able to stand alone as full nominals; and (iv) appearing in the construction indicating a contextually relevant extension (RE).
(b) most cats, no elephant, every woman, seven potatoes, many nations, little trouble
(c) Some were broken.    Each is worth seeing.    I bought five.    Many complained.
(d) {all / most / none / each / any / two / several / many / few} of those teachers

(32) Especially with RE, the two kinds of quantifiers are often quite comparable in their import:
(a) It was a fairly easy exam. {Most / Many} students passed.
(b) It was an easy exam, but {some / several} students failed.
(c) It was a very hard exam. {Hardly any / Very few} students passed. Almost none.

(33) Like demonstratives, which are baseline grounding elements, numbers occur with classifiers in languages which have them. E.g. in Mandarin:
zhè-tiáo  shéngzi ‘this rope’    liǎng-tiáo  shéngzi ‘two ropes’
this–CLSF rope                two–CLSF rope
(34)(a) Relative and absolute quantifiers represent alternate quantifying strategies.

(b) Relative quantifiers are grounding elements: universality in ME represents a kind of epistemic status and a means of epistemic control.

(c) Like other adjectives, absolute quantifiers specify a scalar property, but are atypical because the property is quite extrinsic and not very useful for identification.

(d) Like relative quantifiers, they afford epistemic control in the form of generalizations, but since they do not specify universality the generalizations are weaker.

(e) Thus absolute quantifiers function as either grounding elements (when initial) or as adjectival noun modifiers. They are non-typical in either capacity.

(35)

(a) most (REL/GR)  (b) many (ABS/ADJ)  (c) many (ABS/GR)

(36)

NON-UNIQUE REFERENCE

GROUNDING

the

three women

GROUNDED STRUCTURE

ABS QNT

three

women

(37)(a) Grounding concerns the referent’s epistemic status, which for nominals is primarily a matter of identification. Quantification represents an alternate kind of grounding based not on identification (the baseline) but on the broader function of epistemic control.

(b) While relative quantifiers serve this function intrinsically, absolute quantifiers do so by default in the absence of a dedicated grounding element.

(c) When it stands alone as a nominal, an expression like three women undergoes a functional reorganization: the basic functions of a nominal—GROUNDING, GROUNDED STRUCTURE, NON-UNIQUE REFERENCE—are assigned to the overt structures it comprises.

(d) The expression is thus assimilated to the pattern of nominals like most women, where the initial quantifier is an indefinite grounding element (which profiles a schematic thing).
5. Quantifier Constructions

(39)(a) The generalizations achieved with relative quantifiers often pertain to a **contextually relevant extension** (RE), rather than the maximal extension (ME).

(b) The limited scope of interpretation may be evident just from the discourse context:
   
   (i) *It was really a hard exam. {All / Most / Some} students failed.*
   
   (ii) *When they extinguished the library fire, {no / every} book suffered water damage.*

(c) *all of the books, most of her children, some of them, none of those dogs, every one of the candidates, each (one) of us, any (one) of those elephants*

(d) Construction specifying RE: \[
\left[ \text{QNT} \right]_{\text{NML,H}} + \left[ \text{of} + \text{DEF NML}_{\text{PP}} \right]_{\text{NML}}
\]

(e) NML(H): *all, most, some, none (no+one), *no, every one, *every, each (one), any (one)*

(f) *many of the students, little of her wealth, (a) few of my friends, two of the benches*

(40)(a) *Of profiles a relationship that is intrinsic or natural (as opposed to extrinsic or accidental).*

(b) *the students {of / with} that teacher the color of her hair vs. the gray in her hair*

(c) **Part-whole:** *the tip of my finger; the seat of this chair; the center of Germany*

(d) **Identity:** *the state of California; the month of April; a row of trees; an act of treason*
(41) GROUP: a {flock / herd / set / collection / host} of X
(a flock of geese)
(b) CONFIGURATION: a {bunch / pile / stack / heap / pool} of X
[a bunch of grapes]
(c) CONTAINER: a {can / barrel / bag / cup / box / keg} of X
[several cans of soup]
(d) MEASUREMENT UNIT: a {pint / gallon / pound / ton / foot / yard} of X
[two pints of milk]
(44)

A flock of geese was flying overhead, shaped like a V.

(b) *A flock of geese were flying overhead, flapping their wings in unison.

(c) *Three bags of fertilizer were sitting in the shed.

(d) *Three bags of fertilizer was spread around the garden.

(e) *That pile of logs is blocking the road.

(f) *One by one the pile of logs were sawed into boards.

(46)(i)  

(ii) *

(47)(a) **A: How many geese did you see? ** \textbf{B:} A whole flock (*of).

(b) **A: How much fertilizer did you use? ** \textbf{B:} Three bags (*of).

(c) She has a whole flock. Of geese, that is.

(d) *She has a whole flock of. Geese, that is.

(e) She has a herd (300 to be precise) of cattle.

(f) *She has a herd of (300 to be precise) cattle.

(48)(i)  

(ii) *

(49)(a) The imposition of alternate profiles on the same conceptual content is a primary form of **metonymy**—alternate ways of **accessing** the content for different purposes.

(b) In (43), the metonymic alternation is facilitated by the two nouns being **co-extensive**.

(c) The metonymic shift is also facilitated by the second noun being the one of greater practical interest—its referent is what we **actually use**, most typically.

(d) *I spread the three bags of fertilizer that were sitting in the shed.

(e) We ate the cans of soup that were stacked in the pantry.
(50) (a) GROUP (b) CONFIGURATION (c) CONTAINER (d) MEASURE UNIT

(51) (a) The analyses in (48) are not just competing alternatives (where one or the other has to be chosen) but can co-exist as interpretations of the same structure in a single expression.
(b) In (49)(d)-(e) the same nominal has two interpretations reflecting its functions in the matrix and relative clauses. Each imposes its own construal on the nominal content.
(c) This is unproblematic in symbolic assemblies, where the same element can participate in multiple structures reflecting different dimensions of organization.
(d) As a kind of functional reorganization, expressions like a flock of geese are augmented by superimposing a layer of semantic functions which cross-cut the basic constituency.
(e) The initial sequence is construed semantically as an absolute quantifier, and also—in accordance with (38)(c)—as a grounding element; geese is the grounded structure.
(f) Thus either the flock or the geese can be profiled as the nominal referent, depending on which organizational scheme is accessed for a given purpose.

(52)

(53) (a) The construction in (43) allows an open-ended set of quantifying expressions.
(b) These conventionalize and grammaticize to varying degrees, providing a diachronic source for new absolute quantifiers, notably a lot of.
(c) The end result will be a monomorphemic quantifier, alotta, organized in accordance with the functional overlay in (52).
(54) NON-UNIQUE REFERENCE

GR / ABS QNT

MASS / GRD STR

alotta wine

alotta

wine

(55) SCHEMATIC

<table>
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<tr>
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</tr>
<tr>
<td>a few</td>
<td>above norm</td>
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<tr>
<td>a little</td>
<td>below norm</td>
</tr>
<tr>
<td>abov norm</td>
<td>normative scanning from origin</td>
</tr>
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</table>

(56) (a) alotta above norm

above norm pl

many

above norm cont

much

(b) NORMATIVE SCANNING FROM ORIGIN

above norm

alotta

below norm

below norm pl

a few

below norm cont

a little
6. Conclusion

(57) Main theoretical points:
(a) Grammar exists for the implementation of semantic functions, which are more consistent and more fundamental than any particular grammatical structures.
(b) Grammar takes the form of symbolic assemblies, where elements participate in cross-cutting functional groupings, which are essential to their characterization.
(c) One aspect of assemblies is the organization of elements into systems comprising alternative ways of fulfilling a given function.
(d) Semantic functions are an inherent aspect of language structure—assembly elements in their own right, independent of any particular symbolic implementation.
(e) Only selected facets of functional organization can be directly symbolized, and overtly manifested elements are subject to implicit functional reorganization.

References