

Stability amid change: What our theoretical frameworks accomplish for us

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Opsomming

Ons konseptualisering van linguale verskynsels stel ons in staat om teoretiese-linguale toestande en gebeurtenisse op so 'n manier vas te vang dat dit ons onder-vinding van taal samehangend, betroubaar en verstaanbaar maak. 'n Nuwe para-digma, 'n komplekse sisteemteorie, het pas te voorskyn getree, wat verandering die essensie maak van wat ons waarneem. Alhoewel hierdie aanpak taalver-andering en -ontwikkeling op nuwe maniere beskryf, moet dit nogtans, net soos die paradigmas wat dit voorafgegaan het, vir homself 'n stabiele teoretiese raamwerk konsipieer. In daardie opsig is dit merkwaardig in dieselfde bootjie as die vooraf-gaande paradigmas: die strukturalisme, die generativisme, die kognitiewe lin-guïstiek, en selfs die sosiaal-semiotiese raamwerk wat onderliggend is aan siste-mies-funksionele grammatika, en die van gespreksanalise. Dit is duidelik demon-streerbaar dat elkeen van hierdie paradigmas een of meer konstituente van wat die linguale dimensie van ons ervaring genoem kan word, geïsoleer het, en deur daarop te fokus hulle onderskeie raamwerke van ander paradigmas kon onder-skei. Wat egter 'n komplekse sisteemteorie uitsonderlik maak, is nie slegs dat dit 'n besondere (organiese) siening van taalontwikkeling bied nie, maar ook dat dit 'n meer as gebruikelike aantal konstituerende elemente van die linguale saambondel in wat ongetwyfeld 'n komplekse linguïstiese grondbegrip is. Die teoretiese blindekolle van 'n komplekse sisteembenadering sal ongetwyfeld mettertyd onthul word, en moet derhalwe met dieselfde kritiese ingesteldheid hanteer word as die paradigmas wat dit besig is om uit te rangeer. Ons het tans nog nie 'n komprehen-siewe teoretiese raamwerk vir die linguïstiek nie; spesifiek een wat ons teoretiese visie op linguale verskynsels meer samehangend gaan maak, en dis ook te

betwyfel of ons dit gou gaan kry. Om dit te kan bewerkstellig, sal ons veel meer meta-analitiese diskussie en debat moet voer.

Abstract

The way we conceptualise lingual phenomena enables us to capture theoretically lingual states and events in a way that makes our experience of language coherent, consistent and intelligible. Now a new paradigm, a complex systems approach, has arisen that makes change the essence of what we survey. The approach itself, however, even in characterising language change and development in novel ways, must, like those paradigms that preceded it, seek a stable theoretical framework for itself. In that it is remarkably similar to those paradigms that went before: structuralism, generativism, cognitive linguistics, and even the social semiotic framework underlying systemic functional grammar, and conversation analysis. It can be demonstrated that each of these, and the paradigms they represent, isolated one or more dimensions of what might be called the lingual mode of reality, and in their focus on these distinguished their framework from competing ones. What makes a complex systems approach unique is not that it takes a singular (organic) view of language change, but that it bundles together a more than usual number of such aspects when dealing with truly complex linguistic ideas. It nonetheless will reveal its own theoretical blind spots as time passes, and should be treated with the same critical circumspection as those linguistic paradigms it will soon replace. We do not yet have, and are unlikely to acquire soon, a comprehensive theoretical framework that unites all of linguistics, that makes our theoretical vision of lingual phenomena coherent. To accomplish that, we need much more meta-analytical discussion and debate.

1. Foundational reflection happens mostly at the crossroads

More often than not, practising linguists take the theoretical frameworks they employ for granted. It is only during the transitions between paradigms, and in the ensuing tussle for academic respectability and dominance, that these foundations ever become the topic of serious consideration. Most of the time, there is simply too little reflection within linguistics about its own theoretical bases. In an era where generativism is being challenged from a number of sides, as will be observed below, it is perhaps fair to note, however, that the discussions it initiated and to some extent managed to maintain, were a welcome exception. Chomsky's (1966) specific reference in *Cartesian linguistics* to the conceptual foundations of our discipline is the most obvious example of the earnestness that generativism

engaged with that debate. The thesis of this paper, nonetheless, is that we are now again at a critical interchange in linguistics, and one that presents a fairly rare opportunity to consider issues relating to the foundations of the discipline. These are questions such as

- what is it that enables us to conceptualise lingual phenomena?
- how does it come about that these phenomena are successively conceptualised in different theoretical models?
- what is the nature of the competition among various linguistic paradigms?

Probably the best early diagnostic of what our answers to these kinds of questions will be is to ask another question that underlies all of the above, and, provided that there is enough internal consistency within the paradigm we are employing, will identify our philosophical starting point quite sharply:

- what is it that linguistics actually surveys and investigates (and how adequate are the conventional answers that are so glibly paraded in introductory textbooks)?

After first attending to this last question, the paper then considers, in turn and briefly, the three first questions above. This will provide the theoretical frame of reference that will allow us to attend to and identify the main tenets of an emerging paradigm in both linguistics and applied linguistics: a complex systems approach. Finally, I would like to turn to another implication of deliberately engaging in a foundational analysis of linguistics: that it might show that the discipline, despite various emphases in different dominant paradigms over the years, might be conceived of as one, and not many, fields. In order for such a view to emerge, however, the linguistics community would need much more meta-analysis, and perhaps not wait for paradigm change to present us with such opportunity.

2. What is it that linguistics does?

It can be argued (Weideman, 2009a:64) that what is theoretically surveyed and analysed in linguistics can best be defined not as language, but as a particular facet of reality that for the purposes of this discussion will be designated the “lingual”. The argument is not a new one. Clearly, such definitions of linguistics as

- (1) Linguistics is the study of language (Berry, 1975:1)

or even slightly more sophisticated renderings of the same, as

- (2) Linguistics may be defined as the scientific study of language (Lyons, 1969:1)

can be challenged from a number of viewpoints. Nor, in the more than three decades since definitions (1) and (2) were conceived, have definitions of linguistics progressed much over the years, it seems. In one of the most frequently used introductory textbooks internationally, Fromkin, Rodman and Hyams (2011 (*sic!*)) no definition is attempted before, on p. 315, we are cursorily informed: “The science of linguistics is concerned with these questions.” The phrase “these questions” refers to the claim in the previous sentence that “[m]uch is unknown about the nature of human languages, their grammars and use”. What is more important (p. 2) apparently, is relating language to the brain and the “nervous systems of all animals”, or to “human cognitive abilities” (p. 3).

The main argument against such definitions relates to the many discernibly different disciplines that have an interest in language. So, for example, mathematics has to be concerned with the meaning of algebraic formulae. Those and other sets of symbols constitute the language of mathematics. Acoustic physics, as well as its applications in engineering and architecture, may have a keen interest in the physical properties of human language for the sake of designing, say, a large auditorium or a small hearing aid. Similarly hermeneutics, the science that concerns itself with the interpretation of confessional texts or the language of “ultimates”, must take a keen interest in language, the most widespread symbolic form in which such texts are produced. Or jurisprudence may be interested in interpreting legal texts, and psychology in the therapeutic discourse between patient and psychiatrist. Many different disciplines and fields have a theoretical interest in studying “language”, Wells pointed out more than 40 years ago, remarking that

the phenomena of language can be studied from different points of view. Dozens of sciences can study linguistic phenomena ... from as many points of view - each one putting these phenomena into relation with phenomena of some other sort. What aspect of the phenomena, if any, is left to linguistics as its exclusive property? (Wells, 1966:15)

In the same vein, the arch-structuralist Hjelmslev (1963:5f.) invites us to

attempt to grasp language, not as a conglomerate of non-linguistic (e.g., physical, physiological, psychological, logical, sociological) phenomena, but as a self-sufficient totality, a structure *sui generis*.

Definitions of linguistics therefore have to attempt to define what it is that we abstract from concrete lingual phenomena when we theoretically conceptualise those phenomena. This dimension is the lingual mode of experience, which is not only unique in that it has as its kernel the idea of *expression that is related to the understanding of signs*, but is also connected with all other modes of experience

(Weideman, 2009a:64f.). Linguistics attempts to grasp theoretically lingual phenomena that operate within this mode of experience. This is its “point of view”, its unique conceptual angle.

3. How do we conceptualise lingual phenomena?

If, in comparing and contrasting the lingual mode of experience with the social, economic, historical, psychological, juridical, confessional and a good number of further aspects of experience, we manage to extract it theoretically for closer scrutiny (in the philosophical sense developed by Dooyeweerd (1953), and, more recently, Strauss (2009:14, 53)), there is resistance, a reassertion of the connectedness of the lingual with all of those, so that we are compelled to examine also the modal references within the lingual dimension to all the others. It is these analogical moments, reflections within the lingual of all the other dimensions of experience, that enable us to conceptualise a set of basic, elementary concepts in linguistics. This means that the lingual dimension of experience is never absolute: rather, it is both unique and related to all others.

By way of modal analogy the connection between the lingual dimension and the numerical yields the elementary linguistic concept of *lingual system*, conceptualised as a unity within a multiplicity of lingual rules that regulates lingual facts. The attention that this linguistic concept has received since De Saussure’s (1966) work at the beginning of the 20th century is uncontested. Following hard on the heels of that conceptualisation is yet another elementary linguistic concept, that of lingual sequentiality.

The notion of lingual sequence, defined as the position of a lingual element (say, a morpheme) in relation to another, is perhaps the elementary linguistic concept that is most closely associated with structuralism. The notion of a first, or preceding, and a second, or subsequent lingual element, as in the morphological analysis of root + suffix (e.g. in the formation of the past tense, with the verb *kick* + past tense morpheme *-ed* occurring in a fixed order, and not the other way around), depends conceptually on the assumption lying at the heart of structuralism, that lingual elements stand in relation to others, i.e. they occupy a position in a sequence. As Bloomfield put it, with reference to the *lingual position* occupied by lingual facts in a *continuous succession* of objective lingual facts operating on the factual side of the lingual modality:

Even a short speech is continuous: it consists of an unbroken succession of movements and sound-waves. No matter into how many successive parts we break up our record for purposes of minute study, an even finer analysis is always conceivable. A speech-utterance is what mathematicians call a *continuum*; it can be viewed as consisting of any desired number of successive parts (Bloomfield, 1958:76).

It should be clear that these various concepts of lingual continuity emanate, conceptually, from the relation between the lingual modality and the spatial. They are echoes within the lingual mode of reality of originally spatial concepts such as position, range, succession and continuity. It should also be clear that the sequentiality one is dealing with here is no mere metaphor: it recognises real sequences in factual lingual elements. The past tense morpheme in regular English verbs in fact and indeed occupies subsequent, and not first position.

When one turns to the elementary concept lying at the heart of transformational grammar, where the distinctions are even more abstract, it is perhaps less easy to see that one is not dealing with merely metaphorical concepts. Transformational generative grammar takes structuralism one step further, treating the lingual elements that are sequentially arranged as being subject to (regular) movement. As Gleason (1961:172) remarked in a very early but significant comment on this kind of syntactic analysis:

A transformation is a statement of the structural *relation* of a pair of constructions which treats that relation as though it were a *process*.

The regularity of this lingual movement, effected by the transformational component of a grammar, relates conceptually to the reflection of the kinematic dimension of reality within the lingual modality. Linguistically, we would not have been able to conceptualise the transformation or movement of sequentially arranged lingual units from one position to another without this analogical moment in the structure of the lingual aspect.

In answer to specific questions – How do we conceptualise lingual sequentiality? Or the transformation (movement) of some of those sequences or lingual units from one position to another? How do we make theoretical sense of lingual perception? How do we conceptualise the sociolingual identity (sociosemiotic or pragmatic meaning) of lingual objects? How do we explain the phenomenon of lingual economy? – the answers that we give relate to the links between the lingual and, respectively, the spatial, the kinematic, the sensitive, and the social and the economic modes of reality. All yield elementary linguistic concepts. And each different paradigm, whether it be structuralism, generativism, or cognitivism, systemic functional grammar, or ethnomethodology (cf. Weideman, 2010; 2009a:201-220; 2007), in emphasising one analogical moment in the lingual aspect, derives its intelligibility, its internal coherence and theoretical consistency, from that particular emphasis. The relative stability of such theoretical frameworks that linguists employ makes the lingual phenomena that come into view interpretable. Of course, such narrow emphases have the disadvantage of having to yield eventually to other explanations that generally can explain more

or different lingual phenomena. Their myopic view, therefore, makes them not only intelligible but also conceptually vulnerable.

For the present discussion, and especially since I shall turn below to a consideration of a complex systems approach in linguistics, we should note that we do not find in linguistics only these elementary linguistic concepts. Three sets of lingual phenomena are operative in the lingual mode of experience that relate to truly complex concepts (cf. Greyling, 2010:99). They are the idea of the relation between lingual norm and lingual fact, the idea of the growth, development, maturation and possible loss of language both in the individual and in communities, and the idea of lingual subject (agent) and lingual object (concrete language, which is produced by lingual subjects), as well as the complex relation between lingual subject and object.

4. Another shift in perspective: a complex systems approach

Whereas structuralism and generativism find their starting points in the numerical, spatial and kinematic analogies in the lingual aspect, a complex systems approach finds its key analogy in the reflection of the biotic within the lingual. As I remarked in a recent analysis (Weideman, 2009b) of a complex systems approach, it is clear that it takes its cue from concepts originally related to organic life. For example, quite early on in one of the most important source books setting out the main tenets of a complex systems approach (Larsen-Freeman & Cameron, 2008:x,5), it is noted that complex systems thinking finds its roots in biology. It is not surprising, then, that its key concepts revolve around the adaptability (2008:33) and potential of systems, especially the ability to self-organise (2008:62), and “the organic nature of change” within those systems (2008:1, 17). In the same way, the focus of the new approach on constant, dynamic, ongoing change is one that is related in the first instance not to a physical, but to a biotic understanding of things: “... an organism’s ongoing activity continuously changes its neural states, just as growth changes the physical dimensions of the body”, Larsen-Freeman and Cameron remark (2008:17; cf. too 29, 32, 72 and De Bot 2010). In a complex systems approach, the emphasis is on dynamics, which requires “us to look for change and for processes that lead to change, rather than for static, unchanging entities” (Larsen-Freeman & Cameron, 2008:16; also 26). One must note, however, that the emphasis is not so much on analogical physical concepts, such as dynamic effect or force, as on analogical biotic conceptualisations of phenomena. Phrased differently: the flux that is the focus of the approach interprets it in an organically dynamic way.

At the same time, one of the main advantages of a complex systems approach (Larsen-Freeman & Cameron, 2008; Cameron & Larsen-Freeman, 2007; De Bot,

Lowie & Verspoor, 2007; De Bot, 2010; Kramsch, 2008; Beckner, Blythe, Bybee, Christiansen, Croft, Ellis, Holland, Ke, Larsen-Freeman & Schoenemann, 2009) is that it also manages to take a view of lingual phenomena across a range of elementary linguistic concepts. In exploring this further in this and in the following discussion, I rely in part on prior analyses made in Weideman (2010:97f; cf. too 2009b).

In a complex systems approach, it is accepted that language development, growth and maturation has a social origin and function. In this, one finds a first clear difference between a complex systems and a Chomskyan view of language. As Beckner *et al.* (2009: 2) remark, their views are “radically different from the static system of grammatical principles characteristic of the widely held generativist approach”. A Chomskyan understanding of language remains a rationalist, and moreover a psychological one, whereas a complex systems view sees language changing and adapting to each new use.

When language is viewed as a complex system, it means that there are *multiple* interacting agents (lingual subjects) that *adapt* and *change* their use of language in such a way that it affects how language (as the objective product of that use) then develops and changes in their future interactions (De Bot, 2010). What is more, language use is influenced not only by human *interaction*, and the social processes that are at work when we interact, but also by the cognitive process – and its limitations – through which language is *perceived* by humans. There are multiple factors – physiological, developmental, perceptual, cognitive, social, economic, political – or systems governing them that combine and compete to make language happen. As Beckner *et al.* (2009:16) point out,

... language may change in the tug-of-war of conflicting interests between speakers and listeners: Speakers prefer production economy, which encourages brevity and phonological reduction, whereas listeners want perceptual salience, explicitness, and clarity, which require elaboration.

In this view, the objective patterns and structures of language arise from the experience that lingual subjects have with language (Beckner *et al.*, 2009:2). It is the factual experience with language that allows one, when learning a language, to build up a repertoire or set of resources for future language use; grammar is not genetically pre-defined and inbuilt, as in transformational generative grammar, but “a network built up from the categorized instances of language use” (Beckner *et al.*, 2009:5; cf. too 14).

Evidence for how grammar grows from experience comes from “chunking” phenomena. Not only can and do we learn language by retrieving whole chunks of it from our experience when we need to use them intentionally, but

prefabricated sequences of words also come in handy when linguistically mature subjects interact: such “frequent word combinations become encoded as chunks” (Beckner *et al.*, 2009:6). Of course, the use of such linguistically meaningful chunks does not mean that language is static. Quite the contrary: even adult grammars can and do change with experience. The main point here is that, in a complex systems approach, grammar develops from language use; humans are acutely sensitive to the frequency with which different structures occur in their language environment (Beckner *et al.*, 2009:10).

A good illustration of how language changes through use comes from one of the ways in which the expression of future is handled in English. Since English does not have a future tense, it has to “compensate”, as it were, by finding other means or resources to express future intentions, events, and states. The illustration derives from the examination of some of the corpora of English that we now have, some dating back to Shakespeare. In the 850 000 words of his plays, for example, the expression “be going to” occurs only six times, and has no special function (Beckner *et al.*, 2009:8). In a small corpus of 350 000 words of present day English, however, which is less than half the size of Shakespeare’s, its use has grown to 744 occurrences. From signalling merely “movement”, it now takes care also of future intention, and moreover gets contracted into “(be) gonna”, a highly productive chunk of language. This happens not only in English, but also in other languages: in 10 out of 76 languages investigated in another study, the expression of future had developed from the verb “go”. In others, again like in English, where “will” initially meant “want”, the future derives from a verb initially meaning “want”. Similarly, the Old English verb “cunnan” meant only “to know”. Now we use its descendant, “can” as a highly productive auxiliary, and with a much wider intent and meaning. So even words, and word categories, need not remain static, but are drawn into dynamic adaptation processes when used by lingual subjects.

Contrary to the conventional linguistic view that language “processing is seen primarily as operations on invariant ... representations” (De Bot, 2010), a complex systems approach gives an account of another, underdescribed lingual phenomenon: that a lingual object (representation) such as a word may indeed be an unstable entity. De Bot (2010) refers to several studies that point, for example in the case of language attrition, to lexical knowledge that becomes unstable “in the sense that words that are remembered and used at one point in time seem to be forgotten at other points...”. This echoes Larsen-Freeman and Cameron’s findings on how there are lapses or instabilities in individual learning patterns (2008:143f.). As is often the case when a new paradigm presents itself, we have here new explanations for phenomena that were either ignored before, or not even noticed. New linguistic frameworks enable us to see and explain different lingual phenomena.

It is evident from the above how the complex systems view depends on a simultaneous and integrated understanding of the concepts of lingual multiplicity (numerical analogy), lingual change and dynamism (reference to the physical dimension), lingual adaptability (organic retrocipation), the process of language use (echo of the physical), lingual perception (reference to the sensitive), grammar and grammatical productivity (formative link), and lingual interaction (social anticipation) (cf. Strauss, 2002 for a similar, and detailed discussion). All these contribute to a number of truly complex linguistic ideas, for example those of language experience (building up a normative resource) that influences future factual language use; and of language change, especially its growth and adaptation.

Prime amongst all of these analogies, however, is the biotic. Biotic terminology is prominent wherever one turns: even the relationship between accelerated lexical growth and grammatical development is described in organic concepts, as two subsystems that are connected growers (Larsen-Freeman & Cameron, 2008:149). So, too, we should note, learning a language is seen as language development rather than as acquisition, as a process of dynamic adaptation (Larsen-Freeman & Cameron, 2008:157). Amidst all the lingual change that a complex systems approach surveys and alerts us to, its own theoretical coherence and stability rests in the first instance on the important interpretive key it has found in organic analogies in the lingual dimension of reality.

5. A critical assessment

In viewing language as a complex, open interplay of multiply interacting elements and forces, such as cognition, consciousness, experience, human interaction, society, culture and history, that jointly either amplify or limit the effects of these components, this approach allows us to see all of these as connected (Beckner *et al.*, 2009:18). If everything is connected, an important corollary of this view is then that the perspective is anti-reductionist, and from this derives much of its opposition to the reductionism of modernist approaches to science. Modernist reductionism usually seeks a single modality as the sole or main explanatory principle for all phenomena. In modernist linguistics, as was noted above, the single, absolutised modality, modal relation or entity has varied with each new paradigm: for structuralists, everything depended on lingual position and relation, a clear singling out of the spatial mode. In Chomsky's approach, the human mental faculty became absolute. Throughout its history linguistics has been characterised by such explanatory one-sidedness. It is this that is at least implicitly being opposed by a complex systems analysis of language.

Yet, somehow, despite this intention, a complex systems view also seems to retain the modernist tendency to reduce explanations to a single dimension of reality. Its

organic or biotic understanding of change is the best example of this. It is clear in this regard that a complex systems approach wrestles with the age-old question of how to explain the sometimes remarkable stability of a continuously changing system; to explain, to put it another way, the systematicity or orderliness of a system. It sees the explanation in the analogically biotic notion of adaptability:

If we are seeking an explanation of how 'order' ... comes to be in complex adaptive systems, then we may find it in thinking of a complex system that is flexible enough to maintain its stability through continuous adaptation. (Larsen-Freeman & Cameron, 2008:56; cf. too 36)

To its credit, it should be said that, by taking a transdisciplinary approach, a complex systems view stretches across the boundaries of cognitive psychology and sociolinguistics. It borrows methods and concepts from studies as different from linguistics as those examining finger movements (Larsen-Freeman & Cameron, 2008:208). It reinforces and gives fresh interpretations to, or devises new uses for some of the more conventional current approaches and analytical methodologies such as conversation analysis, discourse studies, ethnographic description (Larsen-Freeman & Cameron, 2008:242), action research (Larsen-Freeman & Cameron, 2008:244), cognitive linguistics (Breckner *et al.*, 2009:15; cf. Langacker, 1987, 1991; Dirven & Verspoor, 1998) and corpus linguistics.

The exponents of a complex systems approach sometimes downplay the natural scientific bases of complexity theory, probably because those kinds of connections have in the past, especially in modernist conceptions of applied linguistics, tended towards technocratic analyses and solutions for language problems, which are currently unfashionable. Be that as it may, because not enough time has elapsed for us to know more certainly how it has influenced linguistic and applied linguistic conceptualisation, we may provisionally observe that a complex systems perspective clearly has links with the natural sciences in at least two senses: its emergentist and biotic starting points, and its reliance on technical modelling of language change and development. As Breckner *et al.* (2009:12) confidently declare, they consider mathematical or computational modelling as a valuable tool in their analyses.

From a philosophical point of view, the main contribution of a complex systems approach lies in its attempt to offer a non-reductionist perspective to language and language learning and teaching (Larsen-Freeman & Cameron, 2008:231, also 16, 40f., 72). In such a perspective the absolutisation of a single dimension is, in principle, avoidable. The critical question that adherents of the new approach would have to answer, however, is whether one might not perhaps call the emergentism, that seems to lie at the heart of its conceptual offering, itself a reduction. Phrased differently: is the strong emphasis on organic analogies, though novel, not itself another (over)simplification of things lingual?

In defence of its anti-reductionist stance, proponents of a complex systems view may point to its attention to other than biotic analogies, that has also been noted above. So for example, its analogical physical conceptualisations of language dynamics, or analogical psychological identification of lingual volition (Larsen-Freeman & Cameron, 2008:157), together with its emphasis on the numerical analogy of a multiplicity of systems, certainly all add additional, non-biotic, dimensions to its perspective. Similarly, in its identification of how the subjective, normative ability or potential that humans have for creating language (Larsen-Freeman & Cameron, 2008:104; 226), which are notions related to the formative analogy within the lingual dimension of our experience, correlates with the factual resources that are at the disposal of language-using agents, it touches on yet another set of analogical linguistic concepts. Indeed, the approach is a genuine attempt at investigating and analysing what in the kind of foundational framework that is being employed here would be categorised as “complex” (in distinction from merely complicated, or elementary) concepts. Complex linguistic concepts are notions that view from a multiplicity of analogical conceptual angles phenomena such as language growth and loss, lingual subject and object, and lingual norm and lingual fact.

The opposition of complexity theory to rationalist conceptions of human lingual ability gives the impression that its focus is more strongly on empirical, factual data of language use (cf. Larsen-Freeman & Cameron, 2008:219, for example), an impression that is enhanced by its meticulous analyses of actual language events, and its reliance on large corpora of data, as well as new interpretations of older research, initially done from the vantage point of previous paradigms.

6. Where does it leave us?

For the moment, a complex systems approach will be enough for many linguists. It is likely to continue to yield sufficiently plausible explanations of phenomena never before given proper theoretical treatment. It is more than likely that it will continue to challenge generativist assumptions of language origin, growth and development. It certainly will on many points provide strikingly alternative answers and positions to the conventional ones, and will ask uncomfortable questions challenging the pet assumptions of many who continue to adhere to, and work in, the previously dominant paradigm. Once more to his credit, Chomsky saw (1972:21) that certain issues in linguistics remain relevant despite the narrowness of our methods of analysis. But his remark that the successful employment of a structuralist approach “should have been coupled with a clear recognition of its essential limitations and ultimate inadequacy, in comparison with the tradition that it temporarily, and quite justifiably, displaced” (1972:21-22)

of course applies equally to transformational grammar. There is no reason why it too, especially in its more imperialistically and ideologically inclined offshoots, should not have included a recognition of its own theoretical limitations. The best current illustration of those limitations is to be found in the several reviews of a complex systems approach referred to in this paper. Of course, a complex systems approach will reveal even more of its own limitations, and certainly more than the few that have already been noted above, as time passes. For me, one unresolved issue is its reception by some of the more aggressively political paradigms one finds today in sociolinguistic circles. The jury is still out on whether it will easily accommodate, or be accommodated by postmodernist linguistics that emphasises political and ideological angles in, for example, the analysis of discourse. It is more likely that such critical approaches will be wary of the natural scientific and technological support bases of a complex systems approach.

This is a familiar and conventional dilemma in linguistics. How many disciplines of linguistics are there? A few decades ago, the major fault line lay between those who practised “theoretical” linguistics – mostly syntactic studies with a strong generativist emphasis on formal lingual elements – and sociolinguistic studies. Both of these separated into a substantial array of subdisciplines and subfields, or analytical methodologies: phonology, morphology, syntax and semantics on the one hand, and, on the other, pragmatics, variation studies and ethnography, systemic functional grammar, text linguistics, and conversation and discourse analysis. As has been shown in an earlier analysis (Weideman, 2009a), there is room for meta-analytical treatment, and for a foundational analysis that allows us to see both sides of the coin. Thus formal (“theoretical”) paradigms have historically emphasised concepts emanating from the kinds of analogies within the lingual aspect that refer to earlier modes, such as the numerical, the spatial, the kinematic, the physical, the organic, the sensitive, the logical, and the formative. Sociolinguistic approaches (taken in the broadest sense of that term) have, for their part, conceptualised linguistic ideas such as lingual communication, lingual economy, lingual ratification, and lingual integrity, that conceptually depend on later modes. As ideas, they depend, respectively, on the social, economic, juridical and ethical reflections within the lingual. But there can be little argument that the latter set of ideas (lingual communication, economy, and so forth) cannot function without constitutive concepts such as lingual system, range, and regularity, to name only a few. If so, the important preliminary conclusion of such an understanding of linguistic concept-formation is that linguistics can potentially be one discipline, united around an analysis of a modally differentiated variety of analogical moments, that refer, within the unique lingual dimension of reality, to all of the other modes with which the lingual inextricably coheres.

The kind of foundational framework that this suggests, however, is far from comprehensive, and still needs some dedicated work. One of its greatest *lacunae*, at present, is its far from complete treatment of exactly those linguistic ideas that a complex systems approach is now beginning to highlight: complex linguistic ideas that deal with the theoretical understanding of lingual norm and fact, lingual subject and object, and the origin, growth, development, maturation and possible loss of language.

It should be noted, however, that it takes great patience and a substantial degree of academic tolerance for linguists to attend to, and even to listen to and to participate in such discussions. The discussion is by its nature philosophical (Weideman, 2009a:226, 227), not linguistic. The main benefit for their participation lies first in the potential avoidance of victimhood, for that is what being obsessed with one paradigm often means. Second, linguists might benefit from the possible communication between paradigms that a foundational discussion opens. I conclude with a remark I made before (Weideman, 2009a:228) about one of the most important functions of the kind of foundational framework described above:

... a systematic, foundational analysis ... sets the stage for communication between schools of thought within disciplines that may be either at cross-purposes or come to the phenomena within their purview from different theoretical, and sometimes ideological, angles. A systematic analysis ... should, if it is to do its job properly, be able to provide a platform for mutuality and appreciation. In short, it should open up rather than stifle communication between various schools of thought.

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