

NEOPLATONIC TIME IN STRATIFICATIONAL GRAMMAR

Toby D. Griffen

Southern Illinois University Edwardsville

Professor Emeritus

Stratificational grammar is a model of linguistic structure. We can visualize the overall concept as a multistory building connected by a complex series of stairways. The arrangement of rooms and hallways on each floor is that stratum's tactic pattern, and the manner in which the stairways lead from various parts of one floor to various parts of another (and all the way up and down) is the grammar's realization pattern. Among the strata, we find at the top the semantic or semiological strata defining relationships of meaning, then the syntactic and morphological (together the grammatical) relationships of order, then the phonological and phonetic relationships of sounds and their feature components at the bottom.

The patterns relating all of the points on and among all of the strata are visualized as lines and nodes. The nodes make use of only three logical primes – AND (conjunction), OR (disjunction) and ORDER (precedence), as shown in Figure 1. In (a), x is realized with y in no particular order (UNORDERED AND); in (b), x is realized with y , such that x precedes y (ORDERED AND); in (c), either x or y is realized, with no preference for one or the other (UNORDERED OR); and in (d), x is realized given condition z (from either that stratum's tactic pattern or from some other stratum), and otherwise y is realized (ORDERED OR). It is important to note that these nodes, although they are often called entities, are not physical entities *per se*, but rather are relationships among relationships.

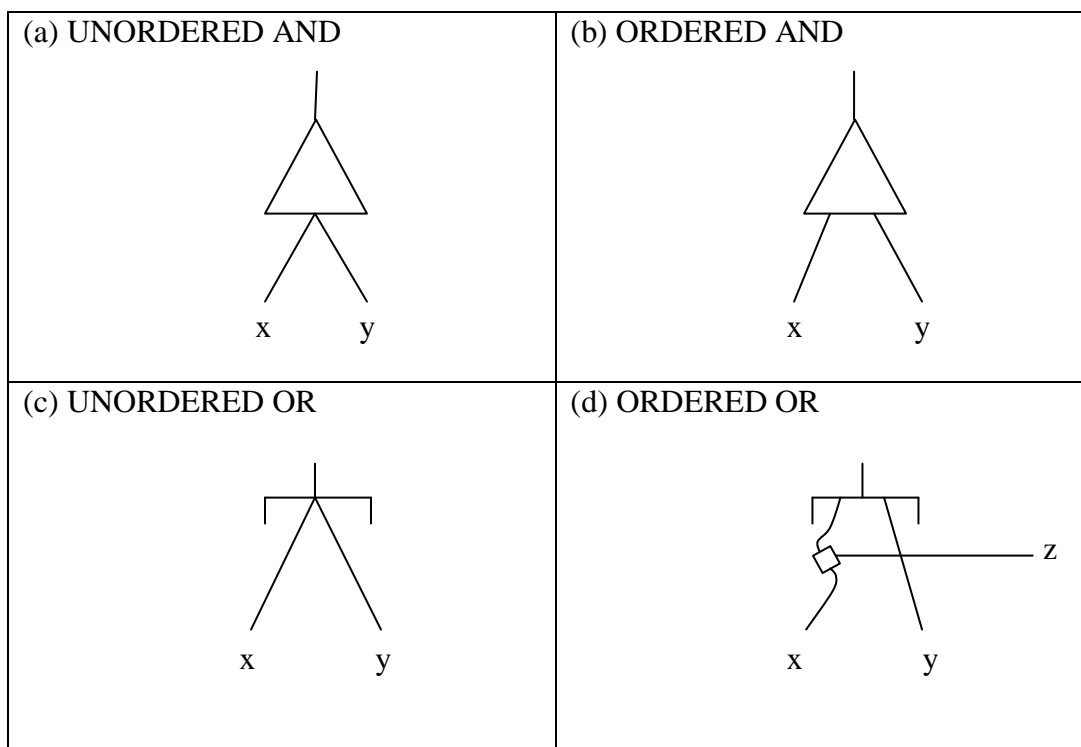


Figure 1: Basic Relationships in Stratificational Grammar

In this network relating stratal patterns with realizational patterns (floors with stairways), the entire structure exists outside of time. It is not the case that x proceeds from the ORDERED AND node in (b) and y proceeds afterwards in time; rather, one could say that the relationship simply abides (to borrow a philosophical term to be revisited later on). Time does not come into play until the stratificational grammar connects with or generates the physical phonetic output – speech in its acoustic and physiological manifestation. As demonstrated below, it is in this connection between the atemporal grammar and temporal speech that the problem lies.

1. Order and Time in Stratificational Grammar

In traditional stratificational grammar (from Lamb 1966, Lockwood 1972), the higher strata are concerned with semantics and semiology, and their relationships

have to be fundamentally unordered. For example, an English proposition may contain an agent and a patient, but their precise order in the ultimate realization of the sentence cannot be specified on a semantic stratum, but must be relegated to lower, morphosyntactic strata. For example, in *John loves Mary*, *John* would be an agent and *Mary* a patient; but such information would not be entered here, for at this point it is only the abstract relationship that is at issue, and many individuals could be substituted in either role.

Since we are dealing with issues of ordering, let us restrict ourselves in this inquiry to the relationship of conjunction – the ORDERED AND and the UNORDERED AND.¹ On these higher strata then, the basic conjunctive order (leaving aside matters of logical precedence) is that of the UNORDERED AND, for the entities (the relationships among relationships) occur on strata higher than those of the syntactic and morphological considerations of the grammar.

It is on the lower strata that sequential order is established through such grammatical relationships as active and passive, statement and question, and so forth. Thus, the active sentence in English will realize the agent-subject before the patient-object, and the passive sentence will realize the patient-subject before the agent-prepositional object (contingent, of course, upon other grammatical considerations). On the morphological and phonological strata, the relationships are even more sequentially bound by order. So on these lower strata, the basic order is that of the ORDERED AND. For example, the agent is realized first in *John loves Mary* and second in *Mary is loved by John*; but other grammatical considerations could change this, as in *It is by John that Mary is loved*. All of these grammatical rules determine the order of the sentence.

Using the relational network's notational devices developed from Lamb 1966, we can represent the ordering relationships of the higher and lower strata as in Figure 2.

¹ Indeed, when it comes to the issue of time, the OR relationship is simply not problematic. A choice, whether ORDERED or UNORDERED, does not involve a sequence.

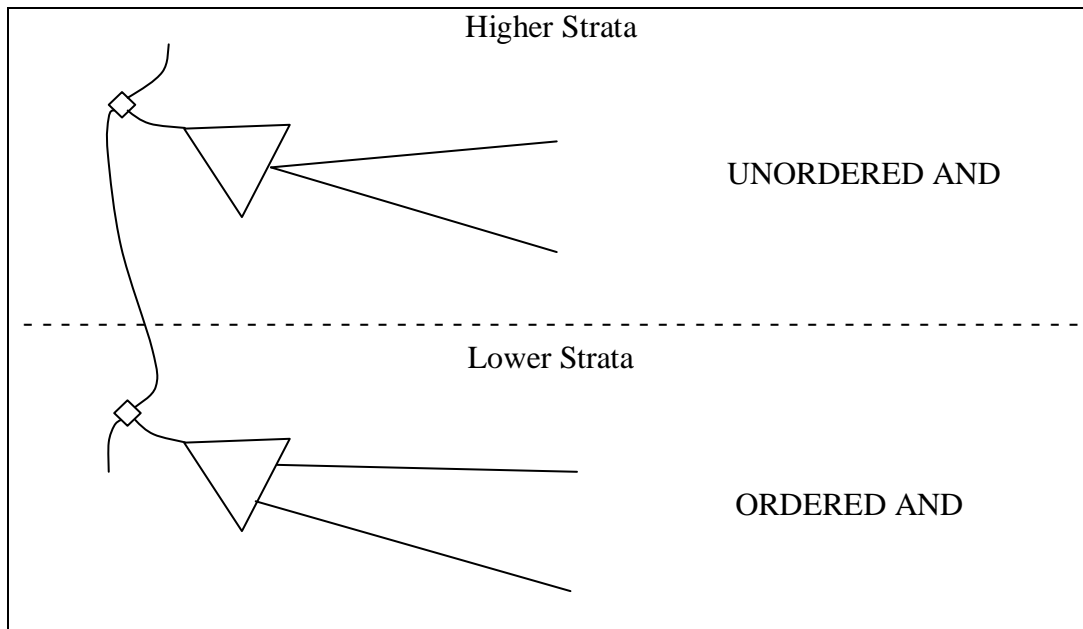


Figure 2: Order between Strata

As noted above, however, the ORDERED AND on the lower strata does not imply continuous time *per se*. Nonetheless, it is a necessary step between the unordered, abstract relationships of the upper strata and the realization of continuous time in the output of the stratificational grammar – the dynamic phonetic speech event.

It is in this dynamic realization that we encounter the major problem: How do we translate the atemporal relationships of the stratificational grammar (albeit in an ordered framework) into the dynamic temporal acoustic signal found in nature?

Early in the development of stratificational grammar, David Lockwood (Ms – a preliminary version of Lockwood 1976) suggested a quasi-step matrix in which features could be realized beyond the traditional boundaries of discrete sequential phonemes. This was applied by Griffen (1975:164) to the analysis of Welsh [m̥helin], the nasal mutation of [pnelin] ‘elbow’ (in the Bangor dialect – Fynes-Clinton 1913) as in Figure 3.

m̥	ŋ	h	e	l	i	n
Nasal		Glide	Vocalic	Lateral	Vocalic	Nasal
Aspirate			Vocalic			
Labial	Apical		Middle		High	Apical
			Front		Front	

Figure 3: Quasi-step Matrix (after Griffen 1975:164)

While the quasi-step matrix may provide valuable insights into what Lockwood called the hypophonemic stratum, we are still dealing with strata. The problem remains: At what point do we connect the realizational lines from a phonological or phonetic stratum that admits of neither motion nor time to these phonetic features that are in continuous motion through time?

At this point, one would be quite correct in objecting that some versions of the model have evolved into a cognitive grammar in which even those relationships on the semantic and morphosyntactic levels are mapped onto neurological operations in the brain, which “must somehow support the hierarchical organization we find in linguistic structure and in the acquisition of linguistic competence” (Lamb 1999:344). As it were, some neurons fire simultaneously and some fire in sequence, and such operations occur dynamically in time. Thus, the problem of translating atemporal relationships into temporal speech would appear to be resolved, as now it is the simpler matter of translating temporal neural firings into temporal speech.

Unfortunately, this does not solve the fundamental problem, for whether neurons fire simultaneously or in sequence is determined by the abstract semantic and morphosyntactic relationships governing them and in effect causing them. The neural cognitive relational grammar simply shifts the problem from the physical dynamic speech event to a physical dynamic neurological event – from the motor cortex, so to speak, to Broca’s and Wernicke’s areas.

So whether we view the situation in terms of the traditional stratificational grammar connected to the speech continuum through some hypophonemic or phonetic stratum or we view it in terms of a mapping of cognitive relationships onto the brain, we still have not determined just how atemporality – indeed, eternity – and temporality connect. For this, we shall have to turn to philosophy.

2. Order and Time in Neoplatonic Philosophy

In the third century CE, Plotinus addressed these issues in a remarkably similar situation in his *Enneads* (see Armstrong 1966-88). His framework for the eternal Being (the Reality, in the philosophical sense, that underlies the world of nature) includes three hypostases. The first hypostasis is *τὸ ἓν* ‘the One’, also known as the Good. It is devoid of attributes and is beyond knowing and beyond thinking. But somehow the superfluity of the One creates the world of Being, or the intelligible world.

The second hypostasis is *ὁ νοῦς* ‘the Nous’ – the Intellect or the Spirit. At this level of the Platonic Forms, there is only nondiscursive thought – not reasoning, but simply knowing (including self-knowledge – Rappe 2000:71-78). That is, in the Intellect, all relationships are fully within Being, such that one cannot be before another. This relates precisely to the situation in the higher strata of the stratificational grammar.

The third hypostasis is *ἡ ψυχή* ‘the Soul’. On this hypostasis, Forms and attributes are joined together to create the Soul and the souls in a framework of discursive reasoning (see Blumenthal 1963 on the relationships of the hypostases); and in discursive reasoning there is by necessity sequential order. This is a step toward time, but it is not time itself, for there could be no such thing in the eternal, atemporal world of Being, in which, according to Plotinus, “... Soul presents one activity after another, and then again another in ordered succession...” (*Ennead III.7.11* – Armstrong 1966-88 3:339-41). As clarified by Remes, “The terminology of ‘before’, ‘after’ and ‘sequence’ is metaphorical; it is used to describe the metaphysical order of priority and posteriority, and hence *not* a production that would happen in temporal sequence” (2008:46).

Thus, as emphasized by Schroeder (1992), while the upper hypostasis may be said to proceed to the lower and the lower hypostasis may be said to return to the upper, there is no progression through time. Thus, the entire network of relationships between the hypostases can be said to abide (see especially Schroeder 1992:28-30).

Here we find a precise rendering of the relationships in the lower strata of stratificational grammar. Indeed, we can revisit Figure 2 and simply change the labels as in Figure 4.

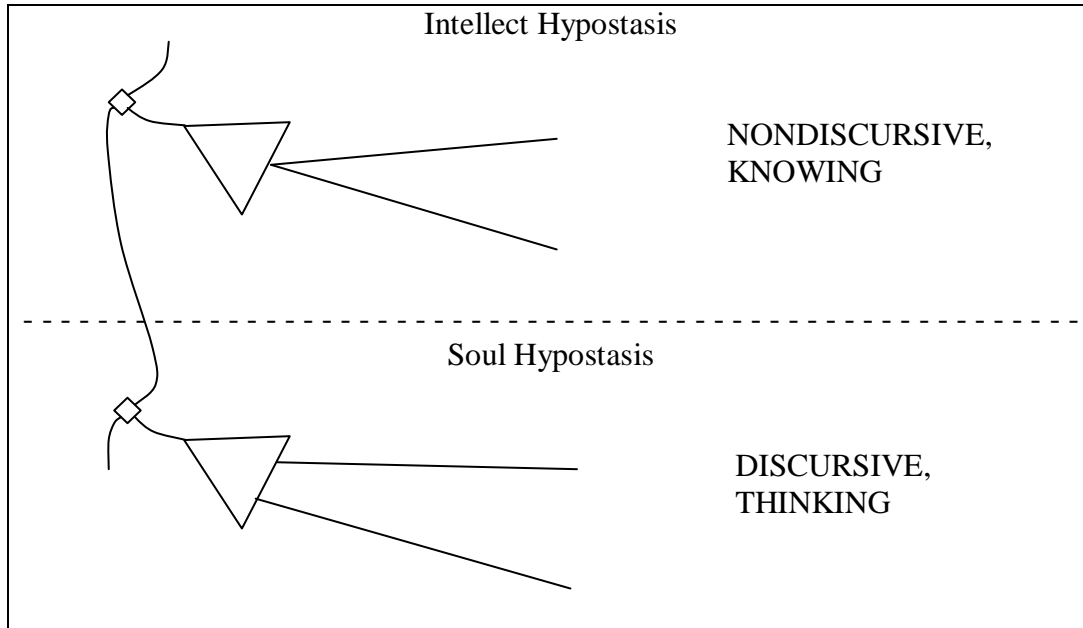


Figure 4: Order between Hypostases

As we might expect at this point, we are faced with a rather familiar problem: How do we translate the relationships of the world of Being into our world – the sensible world, the world of Becoming (compare Remes 2008:59)? In this world, as Heraclitus would be quick to point out, we cannot step into the same river twice, for time is a continuous flow. We should note that the problem in Neoplatonic philosophy is precisely the same as that in stratificational grammar. And since Neoplatonism had been around for seventeen centuries before the inception of stratificational grammar, we may look for insights from the former to help guide us in our approach to the latter.

3. The Quantization of Time

In an examination of time in late antique Neoplatonic thought, Sambursky & Pines (1971) provide a succinct summary of some ideas from the early-sixth-century philosopher Damascius:

... movement in time progresses along a temporal extension consisting of points of Now, which themselves have no extension. Tens of thousands of extensionless Nows will still only add up to an equally extensionless quantity; one must, therefore, suppose that the motion of time progresses by finite steps that happen suddenly, in jumps, as it were, that constitute finite, complete and indivisible units. Each of these jumps, each quantum

of time, in modern parlance, is wholly sudden, simultaneous, and not divisible into smaller parts of time. The flux of time in our world consists of the progress of these intervals, whose size depends on the velocity of the moving body. (Sambursky & Pines 1971:18)

This quantization of time is fully in keeping with modern quantum theory. Of course, from the classical perspective, a contribution from the science of physics to philosophy is hardly an issue, since the former is included within the latter.

When we view time in a Damascian/quantum sense, then the structure of Being no longer has to translate into a continuum of time. Rather, there is a connection between each temporal quantum (or chronon, as some physicists have dubbed it – compare Albanese & Lawi 2004, for example) and the entire world of Being. In such a scenario, the events connected with each quantum of time are subject to the general indeterminacies of quantum relationships, which on the larger scale appear to manifest themselves in our apparently seamless and regular temporal continuum. Indeed, Damascius himself makes “the comparison of the simultaneous extension of primary time to a spatial extension” (Sambursky & Pines 1971:19). (This matter is treated further in the appendix.)

Here, then, is the key to relating the world of Being to the world of Becoming; namely, it connects at each quantum of time. This is also the key to relating the stratificational grammar to the physical event, be it phonetic or neurological. While on a perceptual level, the actual event certainly appears to be a dynamic continuum, if we break it down into its temporal quanta, then neither speech nor neural activity is any different than anything else in the world of Becoming.²

Of course, this solution hardly helps the linguist in representing this relationship, as such a representation would have to reduce the event to quanta with durations of Planck time – 10^{-43} seconds. Nonetheless, we see that the connection can indeed be made, and this assures us that this model of linguistics is at least in this respect a viable instrument for analyzing language, for there is a mechanism by which the grammar theoretically can be connected with speech. In a way, we are placed into the position of the physicist who understands that subatomic particles are subject to quantum mechanics but who feels no less confident in plotting the course of a rocket to the moon by Newtonian principles.

² This in no way obviates the nonsegmental dynamic approach to phonetics and phonology (as in Griffen 1988, 2004, among many). The fact is that coarticulatory effects are by definition simultaneous. Thus, no matter how small one may segment the speech event – even down to the unit of Planck time – there would always be moments in which features indicate coarticulatory constraint, making traditional cross-sectional segmentation both practically and theoretically impossible.

APPENDIX

The Damascian/quantum approach to time and its relationship to stratificational grammar can perhaps best be illustrated through an analogy with a cinematic film. As we watch the film, the frames move by so fast that it appears as though the action on the screen were occurring in a continuum. Even if we know that the event is realized through individual frames, we are still tied to our outlook, because we are limited to a strictly linear view. Thus, we might consider the degree of probability that the situation in a given frame might lead to an anticipated situation in the next frame. This is the state governed by temporality and represents the view available to Neoplatonic Nature or the perceived continuum of the dynamic phonetic speech event.

A Being observing the situation from the other “side” of the metaphorical matter membrane would not be limited to viewing one frame after another, but would view the film atemporally. That is, it would see all frames at once in one of two different ways. On the one hand, it could view all frames together as though on a grand photographic contact sheet. By appealing to such principles as entropy, this Being could readily determine through reason which frame is to occur after another in temporality. To this Being, the frames could be seen as anterior or posterior to one another, but they are all visible at once. This is the view available to the Neoplatonic Soul and is analogous to the lower strata of stratificational grammar.

On the other hand, the Being could view all frames in the same “instant” in the same “space” – as though all were viewed in a single frame. This Being could grasp the entire film at once without the need for reason or for considerations of anteriority *versus* posteriority – it would simply know the film. This is the view afforded to the Neoplatonic Intellect and is analogous to the upper strata of stratificational grammar.

In spite of its crucial role in Damascian/quantum temporality, probability plays no part whatsoever in either atemporal view, for both Beings can see what the “outcome” of any particular frame is. Thus, Einstein’s objection to God’s playing dice with the universe presupposes a God that is bound by temporality. From a Neoplatonic perspective (and of course from a modern quantum perspective as well), it is only Nature that plays dice, loaded though they may be.

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