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The Perfect Wave: A Cognitive Approach to the Greek Verbal System

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Abstract: The challenge of reconciling a verbal form's variety of senses on the one hand and its conceptual coherence on the other is solved, not by positing a highly abstract, semantically invariant core from which each use is derived, nor by simply constructing taxonomies of contextually conditioned senses with "exceptions." Rather a form's senses can be arranged diachronically along cross-linguistically consistent and cognitively motivated paths of change from which it becomes apparent that each sense has a direct conceptual relation only to adjacent senses on the path of change. These senses are synchronically organized in terms of prototypicality and fall along a semantic-pragmatic continuum according to conventionalization. Furthermore, senses previously thought of as "exceptional" are also conceptually related, but only indirectly via their common relationship to the overarching path of change. (Article)

Keywords: Koine Greek**,** verbal system, cognitive linguistics, perfect tense-form, semantics, pragmatics, grammaticalization.

1. *Introduction*

The past several decades have witnessed a marked rise of interest in the Ancient (and particularly Koine) Greek verbal system, especially the relationship between tense and aspect, and has produced many substantial monographs and multi-author dialogues.[1] Of the various verbal forms, the perfect (which we

1. E.g. McKay, *New Syntax*; Porter, *Verbal Aspect*; Fanning, *Verbal*

will refer to as *léluka*[2]) has received considerable attention in the past several decades.[3] This renewed excitement has stimulated a large body of research and valuable insights into the complexity of the Koine Greek verbal system. However, entrenched positions have also developed, calling for fresh perspective. We propose that a cognitive linguistic approach offers the very sort of perspective needed to move forward.

We will begin this analysis by describing what seems to be the fundamental problem posed by *léluka* and how the model we employ hopes to address it (section 2). Next, our model, which has its roots in cognitive linguistics (semantic maps) and grammaticalization theory (paths), will be presented (section 3). We will then present the results of our empirical study, in which all the occurrences of *léluka* in the New Testament have been analyzed (section 4). Based in these findings, we will offer an explanation of the semantic potential of *léluka* in terms of a dynamic qualitative-quantitative map, or wave, which will then be corroborated by diachronic and comparative evidence (section 5). We will then compare this model with other approaches to *léluka*, showing in particular how our proposal hopes to advance

Aspect; Porter and Carson, eds., *Biblical Greek Language*, 18–83; Olsen, "Semantic and Pragmatic Model"; Evans, *Greek Pentateuch*; Decker, *Temporal Deixis*; Campbell, *Basics of Verbal Aspect*; Campbell, *Indicative Mood*; Campbell, *Non-Indicative Verbs*; Baugh, "Greek Tense Form Choice"; Mathewson, *Verbal Aspect*; Runge, ed., *Discourse Studies*, 139–224; and Tresham, "Aspect in Paul's Epistle."

2. We use the designation *léluka* for the Greek perfect form in order to avoid possible baggage that may come from referring to it with a particular temporal or aspectual value. This also allows us to describe it in terms of semantic potential rather than a semantically invariant core.

3. E.g. McKay, "Greek Non-Literary Papyri"; McKay, "New Testament Greek"; Drinka, "Periphrastic Perfects and Passives"; Gerö and Stechow, "Tense in Time"; Haug, "Kinesis/Energeia-Test"; Haug, "Resultatives to Anteriors"; Ruijgh, "Griekse Perfectum"; Orriens, "Past in the Present"; Campbell, "Breaking Perfect Rules"; Campbell, "Greek Perfect"; Bentein, "Periphrastic Perfect"; Porter, *Linguistic Analysis*, 195–218; Porter, "Perfect isn't Perfect"; Fanning, "Ancient Greek Perfect"; Runge, "Markedness and Grounding"; Runge, "Reconsidering the Semantics"; and Crellin, "The Greek Perfect Active System."

the debate surrounding the Koine Greek verbal system (section 6). Lastly, we will summarize the main advantages of this model, point out possible limitations, and propose future lines of research that can further enhance the model (section 7).[4] While all sections work together to offer a comprehensive presentation of this approach, each section is also written so as to be somewhat self-contained. Although this has resulted in some repetition of key ideas, we hope that this will only serve to highlight the main components of this approach and aid readers who may be familiar with certain aspects of the content (e.g. the linguistic concepts) but not others (e.g. how it works out in the Koine Greek verbal system) in being able to work through the content more selectively.

2. *The Perfect Problem*

Here we focus on two seemingly conflicting goals that appear to characterize the study of *léluka* and contribute to the lack of consensus on the form's meaning. That is the tension between (1) recognizing the form's semantic diversity and (2) seeking to discern the form's conceptually coherent meaning based on a

4. It should also be noted that our article only deals with the indicative active type of the *léluka* gram. The basic reason for this is that active indicative post-resultative grams (such as *léluka*) develop differently than their middle-passive and modal counterparts. Specifically, the middle-passive variant favours de-transitive senses which are typical of resultative proper but which are regularly lost in perfects that arise from such de-transitive constructions. This distinction is also evident from the fact that the active and middle-passive *léluka* types are of a distinct age, the former being an older, Proto-Indo-European construction and the latter a posterior Greek innovation. Modal types (such the subjunctive or optative) also tend to acquire senses that are different from those that are accessible on the path typical of the indicative post-resultative grams. In other words, the most consistent path has been established for original indicative resultatives and their grammaticalization in active contexts, while values offered by middle-passive and modal equivalents of such indicative constructions necessitate the use of different paths (e.g. genuine modal paths or modal contamination paths). Thus, it should be noted that this model applies to all forms, but different forms may require analyses with different grammaticalization paths in mind.

rigorous linguistic model. This will set the stage for our proposal that gradual, cognitively motivated language change requires us to regard the form's meaning, not as a highly abstract and semantically invariant sense, nor as an ad hoc taxonomy of senses with arbitrary exceptions, but as a dynamic semantic potential with more or less prototypical meanings that develop in motivated ways along a cross-linguistically consistent path of change.

Different categorizations have been suggested for grouping the various approaches to the Greek verbal system.[5] However, the variety of approaches may be grouped together according to which of the two goals mentioned above is most emphasized. The crux of this tension has often been characterized as the distinction between a form's semantics and pragmatics. Some approaches claim that *léluka* has a diverse semantic potential, but struggle to offer a satisfyingly coherent account of their relationship to each other and how they came to be communicated by a single form. Others claim that it has a single, semantically invariant meaning present in every use, giving it a coherent core meaning, and that any variation in meaning is contextually derived from the same semantic core by pragmatic implicatures.[6] Yet, this approach has often led to what many find to be a forced exegesis of passages where the putative invariant meaning does not seem to fit. As one author has recently summarized the basic disagreement, "The postulation of semantic invariance vs. polyvalence of the grammatical sign appears to underlie a good part of the divergence among modern

5. For surveys of the various approaches to the Koine Greek verbal system, we refer the reader to the treatments in Porter, *Verbal Aspect*; Fanning, *Verbal Aspect*; Decker, *Temporal Deixis*. Also see Campbell's, *Indicative Mood*, 161–211, for a discussion of various approaches to the perfect tense-form. For a more introductory level survey, see Campbell, *Basics of Verbal Aspect* and Naselli, "Brief Introduction to Verbal Aspect." For a recent overview of the approaches to *léluka* in particular, see Porter, *Linguistic Analysis*, 195–218.

6. E.g. Porter, "In Defence of Verbal Aspect," 256; Porter, *Verbal Aspect*, 256; Mathewson, *Verbal Aspect*, 11, 26–27; and Campbell, *Non-Indicative Verbs*, 22–24.

theories of language structure."[7] This tension has been such a central thread that, as Campbell has noted, "Within recent discussion, the distinction between semantics and pragmatics has been at the forefront of the debate."[8]

Beginning with the first of these issues, it has long been maintained that *léluka* in Koine Greek had a variety of senses, ranging from, for example, a present sense (the so-called perfect with present force) to a perfective past sense (the so-called aoristic perfect), with several in between (e.g. the present perfect sense of a past action with ongoing effects).[9] This variety of senses is especially evidenced by diachronic study and the observation that *léluka* developed into a (semi-)narrative form which eventually began to compete with the aorist.[10] In other words, it appears that the form had several potential senses as a

7. Marmorstein, "Verbal Syntax and Textual Structure," 64.

8. Campbell, *Indicative Mood*, 25.

9. Recognition of genuine polysemy tends to characterize more traditional approaches building on the work of earlier scholars, most notably Curtius*, Bildung der Tempora*; Curtius, *Greek Verb;* and those following him, Wackernagel, *Lectures on Syntax*; Wackernagel, *Sprachliche Untersuchungen zu Homer*; Wackernagel, *Studien zum Griechischen Perfektum*; Chantraine, *Grammaire Homerique*; and Chantraine, *Histoire du Parfait Grec.* For a list of studies which appeared as a result of Curtius's work, see Fanning, *Verbal Aspect*, 12–15. In the field of New Testament Greek, early and contemporary works affirming the diverse semantic potential of verbal forms, and *léluka* in particular, include Burton, *Syntax of the Moods*; Blass, *Grammar of New Testament Greek*; Robertson, *Grammar of the Greek New Testament*; BDF; Fanning, *Verbal Aspect*; Wallace, *Greek Grammar*; and Baugh "Greek Tense Form Choice." On the comparability between 19th- and early 20th-century philological research and more conservative contemporary approaches, see Fanning, *Verbal Aspect*, 12–29, and Tresham, "Aspect and *Aktionsart*." Cf. Porter, "Defence of Verbal Aspect," 36–37.

10. Curtius's (*Greek Verb*, 354–55, 375–76) treatment of the perfect presented it as a tense derived from adding reduplication to the present stem, which developed into the perfect and later into the "preterite" (i.e. simple past); a process he characterized as proceeding by degrees over time. Curtius (*Greek Verb*, 355) strongly affirms this analysis, stating "[t]he numerous perfects with the force of a present, and the creation of a preterite from the perfect stem in the different branches of our stock give the clearest proofs of this." Cf. Wackernagel, *Lectures on Syntax*, 219; and Chantraine, *Grammaire Homerique*, 420. For more on this, see section 5.3 below.

result of its historical evolution in which it shifted semantically and acquired new senses. Interestingly, even those who emphasize the form's coherence of meaning (even to the point of posing synchronic semantic invariance) recognize this semantic shift, but do not account for it in their synchronic analyses.[11] However, it is hard to see how this diversity of senses can be explained. In fact, more traditional analyses of *léluka* have often been content with simply listing the purported senses and possible contexts in which they may appear. This has left many unsatisfied with this type of approach which struggles to explain this semantic diversity with a satisfyingly coherent account.[12]

In response to this seeming lack of coherence in traditional approaches, several notable scholars have sought to solve the problem by adopting a radical distinction between semantics and pragmatics, or what a form "means" in all contexts (i.e. the semantically invariant core present in all uses) versus what a form "does" in different contexts (i.e. pragmatic uses). That is, a form's semantics is said to be the invariant core common to every instance (non-cancelable meaning). Pragmatics is said to be any other sense, which arises through the interaction of the abstract semantic core and the various contexts in which it appears (cancelable meaning).[13] Thus, absolute semantic

11. E.g. McKay, *New Syntax,* 50; McKay, "Use of the Greek Perfect"; Porter, *Idioms*, 40; Porter, *Verbal Aspect*, 273; Campbell, *Indicative Mood*, 24 n. 73.

12. The main critiques of Fanning (a representative of this more traditional approach which affirms genuine polysemy) are his lack of theoretical foundation and appeal to "exceptions" for seemingly anomalous uses, especially the present sense of οἶδα. E.g. Carson, "Porter/Fanning Debate"; Silva, "Response to Fanning and Porter"; Campbell, *Basics of Verbal Aspect*, 30; Campbell, "Breaking Perfect Rules," 145–46; Porter, *Linguistic Analysis*, 199, 201; Porter, *Verbal Aspect*, 253.

13. While there are significant differences in their conclusions, this shared commitment to an impermeable semantic-pragmatic divide is characteristic of Porter (e.g. Porter, "In Defence of Verbal Aspect," 43–44 n. 1; Porter, *Linguistic Analysis*, 207–208; Porter, "Prominence," 58–59; and Porter, *Verbal Aspect*, 260–270) and those following his approach (e.g. Decker, *Temporal Deixis*; Foley, *Biblical Translation*; and Mathewson, *Verbal Aspect*), as well as Campbell, *Indicative Mood*.

coherence between every use (in the form of an invariant semantic core) is put forth as the standard of an adequate description of a form's meaning.[14] Various putatively invariant semantic cores have been proposed along these lines.[15] However, many New Testament scholars find these proposals far too abstract to be very meaningful, question whether semantic invariance is actually characteristic of language, and have challenged whether these supposedly invariant semantic cores can actually be applied to every usage without resulting in forced exegesis.[16]

Rather than witnessing much movement toward synthesis, the competing desires to uphold a verbal form's semantic diversity,

14. From this perspective, Campbell (*Indicative Mood,* 162) views the variety of ways the perfect is used to be problematic for the traditional view that seeks, more or less, to accommodate them within its "semantics." In a later work, Campbell ("Breaking Perfect Rules," 140 and 140 n. 4) says this has led to a near consensus that "the older understanding is full of problematic complexities" and that "[t]he traditional description requires a great deal of flexibility in order to account for perfect usage." In fact, Carson ("Porter/ Fanning Debate," 25) explicitly critiques Fanning for not demonstrating "a greater grasp of the fundamental distinction between semantics and pragmatics."

15. For example, Porter views the perfect as completely aspectual with no reference to absolute time, encoding a stative aspect, which presents a condition or state of affairs (Porter, *Verbal Aspect,* 91; cf. Porter, *Idioms*, 39–42). In Porter's view, the perfect also has a spatial value of proximity and a discourse value of frontground prominence (Porter, "In Defence of Verbal Aspect," 35; cf. Porter, *Linguistic Analysis*, 204–209). Olsen ("Semantic and Pragmatic Model," 232) argues that the traditional analysis of the perfect as presenting a past situation with present relevance should be attributed to "perfective aspect and present time, respectively." Yet another proposal of semantic invariance is Campbell, who building on the works of Trevor Evans (*Greek Pentateuch*) and Sánchez Ruipérez (*Verbo Griego Antiguo*), uniquely argues that the perfect encodes imperfect aspect with a spatial value of heightened proximity. See Campbell, *Basics of Verbal Aspect*, 110; Campbell, "Breaking Perfect Rules"; and Campbell, *Indicative Mood.*

16. E.g. Silva, "Response to Fanning and Porter," 79; Barnard, "Prominence Indicator"; Runge, "Contrastive Substitution"; Runge, "Markedness and Grounding"; Baugh, "Greek Tense Form Choice," 4 n. 14; and Tresham, "Review of Basics." From a general linguistic perspective, see Bybee, *Language, Usage and Cognition*, 186.

on the one hand, or somehow reduce its meaning to a coherent but highly abstract invariant sense, on the other hand, have become increasingly entrenched. It is our contention in this study that an application of cross-linguistically pervasive and cognitively motivated paths of language change can preserve the strengths of each of these two basic approaches and at the same time avoid their attendant limitations. As noted by Bentein, "adopting such a cross-linguistic perspective may shed new light on questions which have concerned classical philologists since Wackernagel and Chantraine, and beyond."[17] Thus, rather than representing a decisive break from earlier scholarship, the present study seeks to build on previous efforts by incorporating the insights from a typologically informed model of grammaticalization. In our view, the model we employ delivers the conceptual coherence sought by scholars such as Porter and Campbell, but also shows that a linguistically realistic conceptual coherence is actually consistent with the more traditional recognition of a polysemous semantic potential advocated by scholars like Fanning and Wallace.

By understanding *léluka* according to consistent cross-linguistic observations, the seemingly diverse functions of the form at any given time in its history need not be seen as problematic, but part of a dynamic, yet relatively predictable, path of language change. Crucially, this diachronic path provides significant insight into synchronic meaning. On this model, at any point in a form's life, it will have a range of semantic potentials that co-exist simultaneously along the path of change, with part of that semantic potential being most prototypical at a given time. Furthermore, the co-existing meaning extensions of a form do not all arise directly from a core meaning. On the contrary, pragmatic meaning extensions become increasingly semanticized and give rise to further meaning extensions, and so on, all of which may exist simultaneously. Therefore, at any given period, a form will not have a semantically invariant core. Rather, the formation of polysemous networks of more and less

17. Bentein ("Periphrastic Perfect," 176) applies such a perspective to periphrastic perfect construction in the 8th–4th century BC.

related senses is exactly what we would expect. From this polysemous semantic potential, the diachronic path of the Greek verbal system is seen in each synchronic slice, which has within it waning elements of its past and the developing elements of its future. As will be discussed below, this can be visualized as the peak of a wave moving along on a predictable path. Thus, this model has the advantage of accounting for *léluka* as a form with a diachronically dynamic evolution, while at the same time upholding its synchronic conceptual coherence in tandem with its diverse semantic potential.[18] Additionally, because of its cross-linguistic and cognitively oriented foundation, this model is hypothesized to be productive for the entire Koine Greek verbal system (or any verbal system for that matter). Furthermore, the *léluka* form is a particularly suitable place to begin applying and demonstrating this model because such forms develop along the most consistent cross-linguistically attested path of change. This means that, while *léluka* in many ways represents perhaps the most disputed form in current debate, in many ways it is also the easiest to explain from this perspective.

3. *Navigating the Waves of Verbal Semantics: A Cognitive Linguistic Approach*

Before presenting our analysis of *léluka*, we will first familiarize the reader with the theoretical framework underlying our research. In particular, we will explain the concept of grammaticalization-based semantic maps—an approach to meaning commonly used in cognitive linguistics—its implications and relations to the question of pragmatic-semantic contrast and semantic invariance, as well as the nuances of the resultative

18. As Janda ("Cognitive Linguistics," 137) points out, "[t]he radial category provides powerful explanations for all kinds of linguistic relationships involving polysemy, for it allows the linguist to explore both the variety and the coherence of related items, rather than attending exclusively to either the variety by making atomistic lists, or to the coherence by assigning abstract features that fail to capture the variety. The linguist can see both the trees and the forest, since even the messiest array of related items can usually be viewed as a unified (though internally complex) category."

path, a grammaticalization cline that underlies the map which we will use to describe *léluka*.

3.1 *Cognitive Mapping*

Following cognitive linguistics, we will understand the meaning of a verbal gram[19] as a coherent bi-dimensional map of senses (referred to as a wave), organized horizontally along an axis traced by a grammaticalization path (which conceptually and historically relates the various senses a gram can express) and vertically along the prototypicality axis (which relates these senses with their frequency—one of the measures of prototypicality). We will now explain this definition, formulated in highly theoretical jargon, in a more detailed manner.

The construction of the model begins with collecting all possible senses a gram can convey. A sense is a piece of information, which a grammatical construction expresses in a concrete place in the text. Of course, this "measurement" is not ideal, especially in extinct languages with no native speakers who could inform us of the sense found in a given place. Therefore, our approach is as follows. First, the semantic value must be inferred from the contextual factors that accompany or embed the gram (adjacent lexemes, role in the clause, adjacent clauses and sentences, text type, etc.). These contextual elements aid readers in properly interpreting the verbal concept an author intended to communicate. Second, the senses can only be classified by using pre-established semantic domains. The selection of the domains we will employ (their number and type) is meant to reflect the best ratio of granularity and economy. In cognitive and grammaticalization studies, in order to be recognized as distinct, a sense or domain should meet at least one of the following conditions: it exists cross-linguistically as a grammaticalized form or it enables one to estimate a precise

19. The term gram refers to any type of a grammatical item, be it an analytical, iconic, semantically transparent, non-stabilized and peripheral syntactic periphrasis or a synthetic, semantically non-transparent, fully grammaticalized and systemically central form, including a morpheme. Cf. Dahl, "The Tense and Aspect Systems," 7.

difference between two forms that offer a highly similar—but non-identical—meaning. Another reason that justifies the use of certain semantic domains is their persistence in typological studies or in studies specific to the language under investigation.

If one adopts an intermediate granularity approach, polysemy or diversity of senses becomes a norm in natural language, meaning that any form regularly exhibits several, more or less similar, senses. Cognitive linguistics convincingly argues that a polysemous set, which encapsulates the semantic potential of a gram, is always coherent. Polysemy is not a collection of random values, but a coherent set, in which all the senses of a form are connected to its conceptual prototype or the central value, either directly through meaning extension (discussed below) or else through one or more intervening meaning extensions which may all exist synchronically. This observation, known as the relatedness principle, is one of the tenets of modern cognitive semantics.[20]

This coherence is granted by the fact that all the senses have arisen historically due to common human cognitive mechanisms during the grammatical evolution of a form. Accordingly, the link unifying the components of a polysemous set is both conceptual (as the senses are connected by metaphorical, metonymical, abductive, or image-schema extensions) and diachronic (as innovative senses are successively extended from conventional ones). [21]

Since the polysemous networks have both a conceptual and historical dimension, linguists commonly use grammaticalization paths to propose an internal cohesion of polysemies.

20. Cf. Lakoff, *Women, Fire and Dangerous Things*, 12–13; Heine et al., *Grammaticalization*, 224–25; Gibbs, *Poetics of Mind*, 157; Taylor, *Cognitive Grammar*, 98; Janssen, "Monosemy vs. Polysemy," 96; Tuggy, "The Nawatl Verb Kīsa," 323–24, 348–50; Cruse, *Meaning in Language*, 108–10; Evans and Green, *Cognitive Linguistics,* 36, 169, 331, 352; Lewandowska-Tomaszczyk, "Polysemy Prototypes and Radical Categories," 140, 147–48; Bybee, *Language, Usage and Cognition*, 183, 186–87.

21. Heine et al., *Grammaticalization*, 224–25; Taylor, *Cognitive Grammar*, 138–39; Tuggy, "The Nawatl verb Kīsa," 323–34, 348–50; Evans and Green, *Cognitive Linguistics*, 332–52.

Grammaticalization paths are empirically deduced models that specify how grams of a certain type evolve cross-linguistically from an original input construction to a highly advanced grammatical form by a chain of intermediate steps, again motivated by human cognitive mechanisms. That is, paths specify the order in which senses are incorporated into a gram's semantic potential by establishing the directional cline of the development of a given polysemous set, i.e. from the original value to the final one.[22]

Given that universal grammaticalization paths are regarded as one of the most plausible templates for sequencing polysemous sets, they have been employed even in cases where the map visualizing the connections of a polysemous set can only be posited from synchrony.[23] However paths are also realistic, since a given mapping that is built on a grammaticalization template is expected to reflect the actual grammaticalization process of the form in question. Accordingly, a map can, and in fact should, be corroborated by diachronic or comparative facts, which would additionally confirm the mapping based on a synchronic array of senses and a typological evolutionary template. This corroboration may involve the analysis of the history of the form from its birth to the period in question and its development in subsequent periods, the study of structural properties of the gram, as well as comparison with cognate formations in related languages.[24]

Usually, grammaticalization-based maps are qualitative—they portray the synchronic semantic variation of a form as a network

22. Bybee et al., *Evolution of Grammar,* 104–5*;* Newmeyer, *Language Form and Language Function*, 275; Traugott, "Legitimate Counterexamples to Unidirectionality," 1–5; Dahl, "The Tense and Aspect Systems," 11–12.

23. Haspelmath, "Geometry of Grammatical Meaning."

24. Heine et al., *Grammaticalization*, 221–22, 225–28, 260–61; Bybee et al., *Evolution of Grammar*, 15–19; Heine, *Cognitive Foundations of Grammar*, 10; Haspelmath, "Geometry of Grammatical Meaning"; Dahl, *Tense and Aspect*; Bybee, *Language, Usage and Cognition*, 798–99; De Haan, "Building a Semantic Map"; Narrog and van der Auwera, "Grammaticalization and Semantic Maps"; van der Auwera and Gast, "Categories and Prototypes," 186–88.

of senses related by a grammaticalization template in which each sense corresponds to a historical stage where this value has been acquired.[25] To render such maps more accurate and prevent inadvertently portraying each semantic potential as equally conventionalized, maps can be enriched by quantitative data relating senses (now viewed as stages of a path) to their degree of prototypicality. In corpus studies of extinct languages, prototypicality is usually inferred from frequency. More frequent senses are viewed as more prototypical (they may be hypothesized as corresponding to the users' representation of the meaning of this gram without the process of inference which characterizes pragmatic implicature), while less frequent senses are interpreted as non-prototypical (they do not enter, or do so only marginally, in the representation of the gram, as with pragmatic implicature).[26] If frequency information is introduced to the map, it is schematically represented by means of a vertical axis *y* that matches each stage of the horizontal axis *x* (organized along a given grammaticalization path) with its precise statistical value. In this manner, the meaning is modeled as a bi-dimensional, directional wave with the more-prototypical (frequent) senses forming the peak(s).[27]

25. Compare maps developed by van der Auwera and Plungian, "Modality's Semantic Map," 98–100; Haspelmath, "Coordinating Constructions: An Overview," 21; De Haan, "Building a Semantic Map"; and Narrog and van der Auwera, "Grammaticalization and Semantic Maps," 322. If statistical information is provided in diachronically oriented maps, it is not included in the map itself but presented separately (cf. Andrason and van der Merwe, "Semantic Potential of Verbal Conjugations," 215–17). Of course, statistically plotted maps, which do not have a diachronic dimension but are oriented synchronically, regularly include information concerning the frequency into the representation (cf. Narrog and van der Auwera, "Grammaticalization and Semantic Maps," 320–22). However, "the compatibility of the representation of a diachronic dimension with statistical maps" has not been explored so far (Narrog and van der Auwera, "Grammaticalization and Semantic Maps," 327).

26. Gries and Stefanowitsch, *Corpora in Cognitive Linguistics*; Gries, "Corpus-Based Methods"; and Gilquin, "Prototypicality in Corpus Linguistics."

27. Andrason, "Complexity Verbal Semantics"; Andrason and Visser,

These two features (i.e. the inherent polysemy of a form and its prototypicality arrangement) signify that most (if not all) grammatical constructions—be it lexical forms or grammatical entities—have fuzzy boundaries between their polysemous senses and in relation to other grams.[28] To be exact, instead of perfectly matching a given prototypical class (e.g. a perfective past, a present tense, a present perfect), grams approximate an ideal prototype (i.e. theoretically ideal as it operates within a model) to a certain extent. In natural language, cases of absolute taxonomical uniformity are exceptional. What does constitute a rule are intermediate cases, where properties typical of the class *a* are accompanied by traits exemplary of another class *b* or other classes *c*, *d*, and so on. Therefore, the relation of belonging to a given taxonomical type is understood as approaching the prototype, rather than being identical to it. The poles of prototypicality are certainly important for establishing a cline on which intermediate stages can be located, but it is these intermediate cases between the two poles that are regular, not the poles themselves. Given this gradient character of realistic grams, any black-and-white distinction that would claim to determine the moment when an individual starts belonging to a class *a* is inevitably arbitrary.[29] The implications of this are

"Affordances Perspective and Grammaticalization."

28. To our knowledge, the idea of double-source fuzziness of a gram is new. It derives from the fuzzy nature of both the *x*-axis (as senses transmute gradually into each other) and the *y*-axis (as the measure of prototypicality ranges from 0% to 100%). For a more detailed discussion, see Andrason, "Complex System of Complex Predicate." However, this idea resonates with the view of language as a fuzzy system and/or the understanding of meaning as inherently fuzzy (Munné, "Fuzzy Complexity," 178–82, 186–88, 194–95).

29. On the concept of prototype, prototypicality and family resemblance, which all underlie our view, see Wittgenstein, *Philosophical Investigations*; Rosch and Mervis, "Family Resemblance"; Labov, "Boundaries of Words"; Jackendoff, *Semantics and Cognition*; Lakoff, *Women, Fire and Dangerous Things*; Taylor, *Linguistic Categorization*; Heine et al., *Grammaticalization*, 227; Langacker, *Cognitive Grammar*, 8; Langacker, *Concept, Image and Symbol*, 266; Langacker, *Foundations of Cognitive Grammar*; Cruse, *Meaning in Language*, 130–32. Regarding the idea of fuzziness of language and its components, see Munné, "Fuzzy Complexity," 181. For a discussion of the

discussed with specific reference to the resultative path and visualized in figure 4 in section 3.2 below.

Our model is also based on the fact, commonly recognized in linguistic typology, cognitive linguistics, and grammaticalization studies, that semantics and pragmatics form a continuum. That is, semantics reflects a high-degree of grammaticalization (a type of automatization by frequency and entrenchment) of initially pragmatic meanings. Grammaticalization operates through, and is recognizable by, the increase of frequency—the more frequent and automatized a given meaning pattern is, the more salient and proximate it is for the speakers and the more semantic it becomes. The mechanisms that drive grammaticalization are subjectivization, metonymic and metaphorical extensions, as well as context induced reinterpretation and the conventionalization of implicature (which are particularly relevant for the current study), which strongly depend on increase of frequency.[30]

concept of an attractor in linguistics, see Mufwene, "Emergence of Complexity"; Massip-Bonet, "Complex Adaptive Systems." Concerning the fuzziness of nature and its relevance for all aspects of realistic systems, see Zadeh, "Analysis of Complex Systems"; Dimitrov, "Introduction to Fuzziology," 10–12, 15, 18–19; Dimitrov and Hodge, "Challenge of Social Complexity," 37.

30. For an overview of these mechanisms, see Evans and Green, *Cognitive Linguistics*, esp. chs. 10 and 21, and Riemer, *Introducing Semantics*, esp. ch. 11. For a discussion of these mechanisms from the perspective of grammaticalization, see Hopper and Traugott, *Grammaticalization*, 39–98. For a detailed treatment of the semantics-pragmatics interface, see Ariel, *Pragmatics and Grammar*. For some proposals on the precise nature of the cognitive motivation for the cross-linguistically consistent change of resultatives, see Detges ("Time and Truth"), who suggests a rhetorical function that facilitates grammaticalization along the path. Also see the numerous references given in section 3.2 below. However, also see Haug ("Resultatives to Anteriors"), who argues that it is paradigmatic pressure rather than syntagmatic relations and pragmatic extensions that are most responsible for the evolution of the Ancient Greek perfect. Bentein ("Periphrastic Perfect") suggests a Mental Space explanation of the grammaticalization of perfect periphrastic constructions whereby a single construction in certain contexts is ambiguous between multiple Mental Space configurations, which facilitated reanalysis and thus contributed to grammaticalization along the path. We will return to this question as it relates to the Greek verbal system at several places in the paper.

When a gram is first used in a new context, it corresponds to a pragmatic extension. However, due to the increase in frequency of this use, the value gradually becomes incorporated into the semantic potential of the form—the more frequent it is, the more associated with the form it is, thus passing from pragmatics to semantics. This, again, implies and stems from the fact that a form does not (and cannot) have a semantically invariant core that is impermeable to the pressures of semantic change.[31]

These insights lead us to view semantics and pragmatics, not as radically divided and perfectly black and white categories, but as two poles of a gradient analogous to figure 1 below, with the darker end representing more entrenched semantic meanings and the lighter end representing more innovative pragmatic meanings.[32] Because a certain sense conveyed by a form is semanticized to the degree that it is conventionalized, there is no exact boundary between semantics and pragmatics. One can venture at dividing the continuum into two at some more or less arbitrary point (indicated by the dashed line). However, it makes little sense to insist that either side of this arbitrary division is homogenously semantic or pragmatic and realistically reflects actual language use. Indeed, there are highly conventionalized and extremely innovative senses that can be identified with the semantic and pragmatic poles, respectively. However, this does not undermine the fact that these two ends of the spectrum form a fine gradient at their interface.[33]

31. Bybee et al., *Evolution of Grammar*, 8, 20; Traugott and Dasher, *Regularity in Semantic Change*, 34–40; Evans and Green, *Cognitive Linguistics*, 113–4, 118–20, 124–5; Ariel, *Pragmatics and Grammar*, 114–5, 142, 148; Bybee, *Language, Usage and Cognition*, 53–56, 181–91, 214–5.

32. The idea that semantics and pragmatics do not form a dichotomy is not new and may be found in Gibbs, *Poetics of Mind*. Regarding the gradualness of semantics and pragmatics and their mutual relation, see also Riemer, *Introducing Semantics*, 22, 89, 129–130; Geeraerts, *Theories of Lexical Semantics*, 182, 222; Ariel, *Pragmatics and Grammar*, 201–2; and Börjesson, *Semantics-Pragmatics Controversy*.

33. Compare Riemer, *Introducing Semantics*, 129–30.

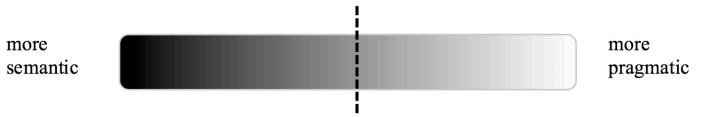

Figure 1: Semantic-pragmatic continuum

Given the discussion above, qualitative-quantitative maps are models of meaning that are arguably compatible with any degree of fuzziness and taxonomical irregularity. They account for any qualitative structure of the semantic potential and any quantitative distribution related to the frequency of its senses. In this manner, they are able to account for all the empirical data concerning a form's semantic potential. In addition, they develop concise definitions that are both explanatory and predictive. That is, the related senses are determined as a holistic metastable phenomenon, a wave topologically distinct from other waves traced by other grams of the same or other classes. This definition gives insight not only into the synchrony of the form, but also into its diachrony, allowing for multiple predictions concerning its origins and posterior development. In contrast to traditional approaches, this holistic definition is achieved without resorting to risky oversimplifications, in particular, to seeking a semantically invariant core (so-called common denominator, encompassing all the uses of a form) and relegating other senses to contextual or pragmatic deviations and irregular cases or to grouping different senses into broader categories so that they would fit the proposed classification in terms of this general invariant value.[34] Due to the natural polysemy and fuzziness of grams, in most cases, semantic invariance is an unrealistic postulate incompatible with usage-based theory and grammaticalization.[35] Having described the polysemous nature of grams and the relationship between potential senses within a

34. For a more comprehensive explanation of the wave approach and a detailed discussion of its advantages and limitations, see Andrason, "Complex Systems of Complex Predicates."

35. Dahl, "The Tense and Aspect Systems," 17–18; Bybee, *Language, Usage and Cognition*, 183–87.

polysemous network, we will now discuss the resultative path that organizes senses, typical of resultatives, perfects, perfectives, past tenses and statives, along a cognitively motivated, and therefore cross-linguistically consistent, path of semantic extension and grammaticalization.

3.2 *Resultative Path*

Given that our paper is dedicated to a gram that has traditionally been referred to as a perfect, resultative or stative, the so-called resultative path—a cline which, on the one hand, contains stages associated with the senses of a perfect, resultative and stative, and which, on the other hand, has commonly been employed to map grams labeled as perfects, resultatives and statives in other languages—will be explained in detail.

In general terms, the resultative path provides a model of the grammatical life of originally resultative proper grams, determining the order in which new values are incorporated into their semantic potential. This path is composed of two sub-clines: the anterior path and the simultaneous path.

The anterior path establishes that, when employed in a present time frame, resultative proper[36] inputs develop into present perfects,[37] later into perfective pasts and, finally, acquire non-perfective values, and are thus used as general past tenses. During the development into a present perfect, which is a conglomerate of various (sometimes quite distinct) senses,[38]

36. Resultative proper grams contain a complex structure built of two equally relevant components: one indicates the currently attested state and the other makes reference to a prior accomplished action from which this state has resulted. Resultative proper formations are usually intransitive, thus exerting a de-transitive influence on transitive verbs. An English example of a resultative proper gram is a construction *it is written* or *he is gone*.

37. In comparison with resultative proper grams (or senses), present perfects emphasize the dynamic event or activity, while the relevance of the component related to the resulting state contributes less to the meaning. Additionally, they can be transitive, in contrast to resultative proper grams that are typically intransitive and de-transitive (on further characteristics of perfects, see below in this section).

38. Comrie, *Aspect*, 52–54; De Haan, "Typology of Tense," 456–58; Dahl, *Tense and Aspect Systems*, 133; Bybee et al., *Evolution of Grammar*, 61–

resultative proper grams first incorporate the senses of a present perfect inclusive[39] and present perfect resultative[40] and later the values of a present perfect experiential[41] and indefinite.[42] Afterwards, grams that travel along the anterior cline become admissible in definite past contexts and are employed as past tenses. In the usage as a definite past, they expand their remoteness from being acceptable in non-distant past events (immediate, hodiernal, hesternal and recent) to denoting more distant actions and activities (general and remote). Moreover, as

63.

39. The present perfect inclusive indicates that an action or state holds without interruption from a determined point in the past to the present moment: *I have known Max since 1960* (Jónsson, "Perfects of Icelandic," 129–45), and *Bill has lived in Timbuktu for ten years* (Comrie, *Aspect*, 52–54, 60; Bybee et al., *Evolution of Grammar*, 62; De Haan, "Typology of Tense," 456).

40. The present perfect resultative introduces dynamic events portraying them as highly relevant for the present state of affairs—from a given anterior action it is possible to infer certain properties of the present situation: *I have lost my keys* (i.e. I still don't have them); see McCawley, *Tense and Time Reference*; Bybee et al., *Evolution of Grammar,* 61–62.

41. The present perfect experiential indicates that the subject has an experience of having performed (or not) a given action. This means that the activity is portrayed as an experience, which occurred at least once, and which might have been repeated, e.g. *Have you ever been to London?* (Bybee et al., *Evolution of Grammar*, 62) or *I have read 'Principia Mathematica' five times* (Jónsson, "Perfects of Icelandic," 129–45; Comrie, *Aspect*, 52–54; De Haan, "Typology of Tense," 457).

42. The present perfect indefinite is a linking stage between the exemplary sense of a present perfect and a subsequent evolutionary phase, a definite past. Accordingly, it combines certain properties of present perfects and past tenses (Lindstedt, "Perfect," 369, 379; Kiparsky, "Event Structure," 1). In this function "the situation referred to stops before the moment of speaking" which means that the event expressed by the gram occurred in the past (Depraetere and Reed, "Present Perfect Progressive," 97). However, although the main emphasis is placed on the past action, minimalizing its current relevance, the past time frame cannot be specified overtly. This function is typically associated with the so-called 'journalistic perfect of hot news': *Rock Musician Frank Zappa has died. A family spokesman reported that the entertainer passed away at his home Saturday after a long bout with colon cancer* (Schwenter, "Anterior in Present," 1003; cf. Detges, "How Cognitive," 222–24).

a definite past tense, such evolving post-resultative constructions may develop an explicit aspectual value and be used with a perfective[43] past function. Subsequently, the perfective past grams become also compatible in non-perfective contexts, evolving into broad or simple pasts.[44] Typically, the progression of resultative grams along the anterior cline is faster in spoken than written communication. Within written communication, the progression of a gram is gradually slower in discourse, embedded narrative, and narrative, respectively (cf. Figure 2, below).[45] The anterior cline also accommodates performative and gnomic uses. The performative stage has been posited between the resultative proper and perfect resultative phases, close to the present perfect inclusive phase. The gnomic sense constitutes a common extension of various perfectal stages of the cline (in particular, of a resultative proper, present perfect inclusive and present perfect experiential):[46]

43. The perfective aspect represents a situation as complete (not necessarily completed) or as bounded. In its prototypical usage, it refers to a single, discrete or punctual event and is restricted to the past time frame, e.g. *He killed the man yesterday*. Of course, the perfective aspect may also be used with a future reference, as for instance in Polish *Napiszę list* 'I will write the letter', where a perfective future form *napiszę* is used. The perfective action has no internal structure (Dahl, *Tense and Aspect Systems*, 78; Bybee et al., *Evolution of Grammar*, 54, 287; De Haan, "Typology of Tense," 451).

44. This non-perfective value can be indicated overtly by constructions that accompany the verb and that express extensive duration, repetition or habituality, as exemplified by the *Pretérito Indefinido* in Spanish, a successor of the Latin Perfectum: *Vivió allí muchos años* 'He lived there for many years', and *Jugué con mi hermano todos los días* 'I played with my brother every day'. The combination of a perfective past and non-perfective past value in a single gram delivers the category of a simple past (e.g. the Preterite) in Swedish, which can be used with both a perfective and imperfective (including habitual and progressive force).

45. For a detailed discussion of the anterior cline, see Bybee et al., *Evolution of Grammar*, 501–05; Lindstedt, "Perfect," 365–66, 369–79; Squartini and Bertinetto, "Simple and Compound Past," 406–22; Mitkovska and Bužarovska, "Use of the *Habere*-Perfect," 136; and Andrason, "Biblical Hebrew Wayyiqtol," 10–13. Cf. Harris, "Recent Perfect."

46. For a detailed argument regarding the inclusion of performative and gnomic senses in the anterior cline see Andrason, "Performative Qatal"; and

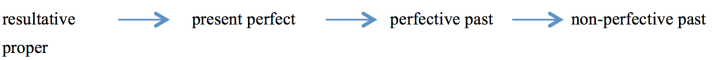

Figure 2: Anterior cline[47]

The simultaneous cline is the other sub-development within the resultative path (see Figure 3). While the anterior cline shows the way in which resultative proper grams develop into past tenses, acquiring senses that gradually distance it from the present cognitive sphere, the simultaneous cline is an evolutionary scenario whereby resultative proper constructions transmute into present tenses. This trajectory postulates that at the beginning, resultative proper grams can acquire a sense of a resultative stative present,[48] next the value of a stative present[49] and finally of a non-stative present tense.[50]

Andrason, "The Gnomic Qatal."

47. The horizontal arrows in this figure symbolize the conceptual and diachronic progression of resultative inputs. Each stage corresponds to a new sense (or a group of senses, e.g. present perfect).

48. The resultative stative present value emphasizes a resulting static condition, simultaneous with the main reference time, in this case, the present, and puts less stress on the prior and causing action from which this state has emerged, for instance *Nie mam sił. Jestem zmęczony* 'I have no strength. I am tired', or *Mam (nadal) zdrętwiałą nogę* 'I (still) have a stiffened leg [i.e. my leg is still stiff)]' in Polish (Andrason, "Resultatives to Present," 20–21).

49. With the stative present, any connection between the achieved state and the activity from which it has emerged is abandoned. The formation denotes the idea of a non-dynamic condition with no traces of a resultative nuance. The stative sense conveys a static, usually permanent, adjectival-like quality or condition of the subject of the verb (*is white, is good*). Stative present expressions interact with a dynamic "normal" present leading to an aspectual contrast between the two constructions, e.g. between a state and an activity, for instance *N konkota* 'I am hungry' in Mandinka or *Ndilambile* 'I am hungry' in Xhosa (Andrason, "Resultatives to Present," 26–27).

50. With a non-stative present sense, a gram is used with non-static predicates and with a sense that does not express a quality, but rather a value that corresponds to more dynamic activities and even processes. The most exemplary case of a resultative construction which has evolved to the peak stage of the simultaneous path is provided by Germanic preterite-present verbs: *ég kan* 'I know how to', or *ég veit* 'I know' in Icelandic (Bybee et al., *Evolution of Grammar*, 77–78; for a detailed discussion and further examples, see

Figure 3: Simultaneous cline[51]

The simultaneous cline typically affects resultative grams formed with static roots (adjectival roots, perception and cognition verbs) or verbs that favor static inferences. It is important to note that both clines can operate simultaneously in a single language, either for different or the same verbs.[52]

The relation between the anterior and simultaneous paths to their conceptual and diachronic origin is evident: while the former gradually gives more relevance to the semantic component of a prior cause found in the bi-dimensional meaning of resultative proper inputs, thus driving the form towards the past time frame, the latter emphasizes the posterior state, simultaneous to the main reference time, which in most cases is present, leading to the generalization of the gram as a present tense. In other words, resultative proper formations progressively destabilize their equal bi-dimensional semantic structure, simplifying it to one dimension.[53] This can be thought of as the color green with its "bi-dimensional" composition from blue and yellow. A resultative proper gram is like green, containing the elements of blue and yellow. Progress down the simultaneous cline, along which the prior causal event loses focus and gives way to the posterior state (i.e. present), is like green gradually losing its yellow element, resulting in blue. Conversely, progress down the anterior cline, along which the posterior state loses focus and gives way to the prior causal event (i.e. past), is like

Andrason, "Resultatives to Present," see also section 5.3 below).

51. Note that the cross-linguistic support for the clines posited by Bybee, Perkins, and Pagluica (*Evolution of Grammar*, 302–15) is based on a study involving 76 languages from all the major linguistic phyla of the world.

52. Cf. Maslov, "Resultative Perfect and Aspect," 70–71; Bybee et al., *Evolution of Grammar,* 74–78; Drinka, "Evolution," 120; Andrason, "Resultatives to Present."

53. For details see Maslov, "Resultative Perfect Aspect"; Andrason, "Resultatives to Present."

green gradually losing its blue element, resulting in yellow. This analogy also illustrates the seemingly counterintuitive fact that a single resultative proper form regularly develops opposite senses.

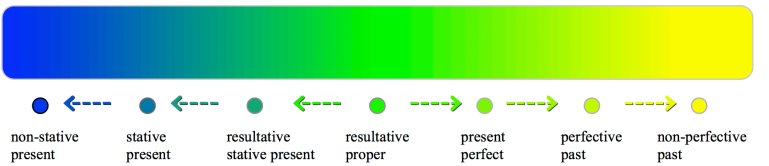

Figure 4: "Decomposition" of the RP bi-dimensional structure

It is crucial to note at this point that the extension from one sense to another is only cognitively motivated, and therefore possible, for adjacent senses. It is impossible that a gram could acquire a sense by "jumping over" senses placed between them on the path, because the semantic coherence that relates senses decreases in proportion to the "cognitive distance" that separates them on the path. Adjacent senses on the cline are semantically and cognitively proximate so that speakers can even relate them psychologically (e.g. the four sub-senses of a present perfect). Alternatively, distant senses on the path may be semantically and cognitively unrelated, even leading to their perception as forming two different categories (e.g. non-stative present and perfective past; compare the relation between preterite [e.g. *ran*] and preterite-present verbs [e.g. *can*] in Germanic languages discussed in section 5.2). In other words, while each sense within the meaning potential of a particular gram may share a common diachronic origin, the individual senses are synchronic extensions of distinct values.

Therefore, like the semantic-pragmatic continuum discussed above in section 3.1, the conceptual relationship between the various senses on a grammaticalization path can also be compared to a color spectrum, beginning with red (resultative proper) and progressing along the simultaneous cline to purple (resultative stative present), dark blue (stative present) and black (non-stative present), and along the anterior cline to orange (present perfect), yellow (perfective past) and white (non-

perfective past), with fine-grained transitions between each value, as in figure 5 below.[54]

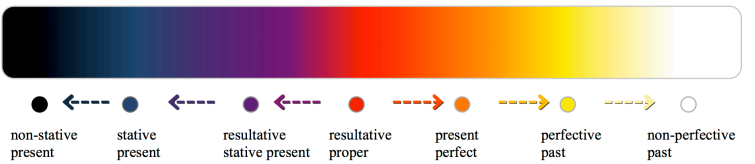

Figure 5: Conceptual spectrum of senses[55]

The trajectory of a particular gram can be compared to slow, gradual movement along this gradient, with the sequence of senses reflecting a more coarse-grained representation of the conceptual spectrum. The crucial point here is that in order to travel from the "reddish" resultative proper sense toward the "whitish" non-perfective past sense, the gram must first go through the "orangish-to-yellowish" spectrum of the present perfect and perfective past senses. This is only possible because of the conceptual similarity of adjacent senses, here represented as color similarity. The same can be said for the path from the "reddish" resultative proper to the "blackish" non-stative present. That is, the diverse senses of a gram traveling on this path do not develop from a single core semantic meaning, but only from adjacent senses that have already been added to a form's semantic potential.

An important implication of this, which will be crucial in our critique of what we call "semantic invariance approaches" in section 6 below, is that we cannot expect all so-called "contextual" or pragmatic uses of a form to be derived from a single, invariant semantic core. Thus, again considering figure 5 above, while we intuitively recognize the close relationship between orange (present perfect) and red (resultative proper), it

54. For a color version, visit BAGL.org.

55. Note that the use of the color spectrum from darker to lighter with black and white at the poles is not necessarily meant to represent semantic bleaching or similar concepts, but simply represents the conceptual similarity of adjacent senses and the increasing conceptual disparity between more distant senses.

is hard to imagine how we would find a meaningful invariant value shared by black (non-stative present) and white (non-perfective past). The conceptual relationship between a non-stative present and a non-perfective past at either end of the resultative path has been lost. They simply cannot be explained by positing a shared, invariant semantic core that has been modulated in context to produce a so-called "pragmatic" use of either non-stative present or non-perfective past. This is because, as evident from crosslinguistic data and mechanisms of semantic extension, the non-stative present and non-perfective past senses are directly and synchronically derived from their adjacent senses, and only indirectly connected to the same diachronic origin. The conceptual coherence of forms that travel along such a path is only found in the path itself, seen both in its diachronic history and synchronic polysemy.[56]

3.3 *The Perfect—Semantic Domains, Grammatical Prototypes, and Realistic Grams*

Having laid out the above concepts, it is important at this point to clearly draw a distinction, only implicit thus far, between semantic domains (i.e. a group of related senses), the perfect as a grammatical prototype associated with a particular semantic domain (e.g. the present perfect with its four sub-senses), and actual perfect grams in natural language (e.g. *léluka*) whose semantic potential contains senses which are more or less prototypically associated with the form and therefore more or less approximate an idealized grammatical prototype.

The senses distinguished on the resultative path (with its two sub-clines) do not represent discrete evolutionary jumps and discrete grammatical categories, but the values (semantic domains) that can consecutively be incorporated into the semantic potential of historically resultative proper

56. See section 5.2 below for further discussion and an illustration of this point from "can" and "ran" which share the same verbal form, but developed along the simultaneous and anterior clines, respectively, and therefore clearly have no shared invariant semantic meaning that is simply modulated in context to produce a present or past meaning.

constructions. This means that a realistic gram can express several senses at any given synchronic stage. In extreme cases, the semantic potential can span the entire length of the path (i.e. both the anterior and simultaneous clines). The grammatical category of a resultative proper—say an ideal resultative proper gram—will be expected to prototypically express the resultative proper sense, while the grammatical category of a perfective past should be mostly associated with the perfective past value. This correspondence, however, is much less consistent in the real world, as grammatical categories commonly do not perfectly correspond to their idealized prototypes, but draw from various semantic domains.

These observations bring us back to the notion of the grammatical category of a perfect, so crucial for the discussion of *léluka* in Koine Greek. As mentioned above, the perfect as a semantic domain is a heterogeneous group of senses: inclusive, resultative, experiential and indefinite.[57] It is sometimes argued that all these subtypes of the perfectal meaning offer the following common characteristics: they belong to the temporal or cognitive present sphere by referring to anterior actions or situations that are relevant to the present or expressing the idea of the current relevance of a previous situation. They also have a complex internal structure with two components: anterior causing event and posterior resultant state. However, the intensity of these two features is different in the four subtypes of the perfectal domain.[58] In most studies, the perfect is viewed either as a special type of aspect—clearly distinct from perfective because internally bi-dimensional and compatible both with complete (i.e. resultative, experiential, and indefinite perfect) and imperfective readings (i.e. inclusive perfect)—or as a different taxonomical species, encompassed under the meta-label of *taxis*.[59] Taxis is an overarching semantic domain (just

57. Kiparsky, "Event Structure."

58. Comrie, *Aspect*, 52; Nedjalkov, "Resultative Constructions," 928–38; De Haan, "Typology of Tense," 456–58.

59. Bybee et al., *Evolution of Grammar*, 54–55; Nurse, *Tense and Aspect in Bantu*, 154; De Haan, "Typology of Tense," 450–52, 456–57.

like aspect or tense) that portrays events as being internally bi-dimensional, i.e. consisting of two temporal and logical spheres: that of anteriority (the prior causal event) and that of simultaneity (the posterior or simultaneous consequence).[60]

The ideal grammatical category of perfect would be a formation that conveys the four above distinguished functions typical of the perfectal semantic domain and does not express any non-perfectal value. Although this is possible, most realistic perfects diverge from this ideal. First, modern typological studies demonstrate that perfects may be compatible with some perfectal semantic sub-domains without necessarily expressing all of them (for instance, the *búinn að* gram in Icelandic conveys the sense of a present perfect inclusive and present perfect resultative, but not that of a present perfect experiential or present perfect indefinite).[61] Second, realistic perfects also express other senses. They may convey the original resultative proper meaning as well as the values that correspond to posterior stages on the path, such as a past (e.g. *passé composé* in French, which is used as perfective past or *pretérito perfect* in Spanish, which may also function as a hodiernal past in addition to present perfect resultative, experiential, and indefinite values). If they do not consist of an auxiliary verb (as in English *I have done*), perfects can also express the values of a pluperfect and future perfect (as the *qatal* form in Biblical Hebrew or the *naata* gram in Mandinka). And lastly, they can be used with the force of any or all of the values located along the simultaneous cline, which, as previously explained, is another developmental scenario of resultative proper grams frequently concurrent with the anterior cline. Specifically, in various languages, a morpho-syntactic form associated with the perfectal domain (i.e. a gram that is

60. Cf. Maslov, "Resultative Perfect and Aspect."

61. Compare the Modern Greek perfect which only has two of the four crosslinguistically observed senses associated with the grammatical prototype of the perfect. But the two senses with which it is compatible are adjacent on the proposed ordering of subsenses, namely the present perfect resultative and present perfect experiential (Moser, "Tense, Aspect and the Greek Perfect," 236).

used to express perfectal values) can also convey a stative (present) sense (see again the Biblical Hebrew *qatal* and the *ye* and *ta* grams in Mandinka) or a non-stative present tense value (as in Germanic languages; cf. section 5.3). This phenomenon seems to be especially common as a great number of perfects found in natural languages evolve along the simultaneous and anterior cline and are therefore compatible with the senses located along both.[62]

These distinctions may be visualized as in Figure 6 below, using the senses on the anterior cline of the resultative path to illustrate semantic domains, using the resultative proper, present perfect (with its sub-senses), and past as illustrative of grammatical prototypes, and the discussion above concerning the Icelandic *búinn að* construction, the Spanish *pretérito perfect*, and the French *passé composé* as an illustration of how realistic grams actually line up with these semantic domains and grammatical prototypes in natural language use.

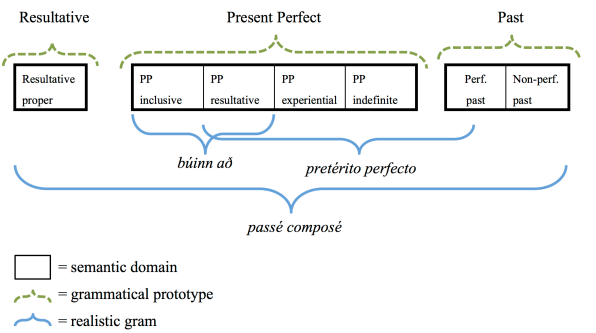

Figure 6: Semantic domains, grammatical prototypes and realistic grams

62. Grams that mainly function as perfectives may exhibit the same behaviour, providing senses located on the two clines, in particular that of a perfective (past) and stative (present). Therefore, the value of stativity can be employed as an additional diagnosis of categories that are dynamically defined as 'resultative-path' grams. Forms that are prototypically used as perfects and/or as perfective pasts are likely to offer some uses of the simultaneous cline, especially the value of a stative, which seems to be characteristic of perception, cognition and quality/adjectival verbs employed in the "perfectal" and/or "perfective" morphology or morpho-syntactic pattern.

To conclude, realistic perfects can draw from various semantic domains, thus ranging from those that resemble the perfectal prototype to those that do so to a lesser degree. As they become less compatible with the perfectal prototype, they inversely approximate other prototypes, for instance that of a perfective and past, or that of a stative and present. Consequently, a linguist should make a clear distinction between the perfect as a semantic domain (itself compounded of four sub-domains), the perfect as the prototype of a grammatical category (an ideal perfect gram matching the four perfectal senses), and the perfect that actually exists in a language (which can more or less approximate the prototype).[63] Furthermore, these distinctions suggest that, if a grammatical label is deemed methodologically or pedagogically useful, a form should be labeled according to the grammatical prototype it approximates (based on which sense within its semantic potential is prototypically associated with the form), not necessarily its grammatical origin. For example, as the present study will argue, the semantic potential of *léluka* extends across both clines of the resultative path, but is prototypically associated with the present perfect values. Therefore, if a grammatical label is sought, it is the present perfect label that should be preferred.[64]

4. Léluka *in the Greek New Testament*

Having presented the model employed in the present study, we now turn to the usage of *léluka* in the Greek New Testament to see how the above framework can elucidate it. We begin with an overview of the data and a brief comparison of senses on the grammaticalization path with those traditionally recognized in New Testament Greek scholarship. We then present each sense identified in the New Testament corpus along with representative examples.

63. Cf. Andrason, "Grammaticalization Path and Non-equilibrium," 155.

64. The prototypicality peak in the present sense of the simultaneous cline and its relationship to the other senses will be discussed in section 5.2 below.

4.1 *Data Overview and Orientation*

An analysis of each active indicative form of *léluka* indicates that its semantic potential consists of several senses with greater and lesser prototypicality corresponding to their frequency and, therefore, their location on the semantic-pragmatic continuum. In general terms, as far as temporal reference is concerned, the semantics of the gram ranges from present to past; with respect to aspect, it spans from stative to actional perfect and perfective past; and lastly, concerning taxis, it includes both examples with a bi-dimensional event structure (found in perfectal uses) and cases where the conveyed event exhibits only one dimension (patent in stative, simple present, and perfective past functions). Additionally, in terms of text type, the formation appears in discourse fragments (discourse or epistolary literature, and embedded discourse or dialogues and/or monologue in narrative) and in narrative passages (genuine narration and embedded narrative, i.e. narrative discourse or narrative in discourse). Although *léluka* is compatible with various taxis, temporal and aspectual values, as well as different text types, not all of them have the same weight in the form's semantic potential. As will be evident from the subsequent discussion, some are common and productive, whereas others are infrequent and unproductive. Crucially, however, there is no black and white boundary between the form's semantic and pragmatic uses. Rather, these values form a gradient ranging from more or less semantic/pragmatic depending on the relative prototypicality of the usage. This will be discussed further in section 5 below.

Before considering the data in detail, it is helpful to recall that we are here analyzing *léluka* in terms of more coarse-grained senses which constitute the form's synchronic semantic potential and represent cross-linguistically attested stages in the typologically consistent path of grammaticalization. However, it is important to note that the more traditional taxonomies of senses conveyed by *léluka* in the New Testament correspond to or fall within these senses. We can take, for example, Wallace's categories as a fairly representative taxonomy of senses

recognized in New Testament Greek scholarship.[65] The typologically attested present perfect sense (with its four sub-senses) is comparable to Wallace's "extensive perfect."[66] The resultative stative and stative present senses are comparable to Wallace's "intensive perfect."[67] The perfective past sense is comparable to Wallace's "aoristic perfect."[68] And the non-stative present sense is comparable to Wallace's "perfect with present force" (e.g. uses of οἶδα, ἔοικα, and the perfect form of πείθω).[69] Wallace's categories of gnomic, allegorical, and proleptic perfect are consistent with several senses. For example, when envisaged as a general truth, the present perfect sense of *léluka* (as well as others) may convey a gnomic meaning where the present perfect sense of the predication is true in all cases.[70] The perfective past or resultative sub-sense of the present perfect are consistent with the allegorical perfect, which highlights some paradigmatic relevance of a completed past action.[71] The proleptic perfect is usually a prototypical present perfect, simply in the apodosis of a (implicit or explicit) conditional clause.[72] The performative value (discussed below) is typically associated with the Aorist (as well as the Present Tense), in particular with its subtype referred to as a "tragic" or "dramatic" Aorist in Classical Greek,[73] or

65. Wallace, *Greek Grammar*, 572–82. Compare the similar taxonomy of senses in Burton, *Syntax of the Moods*, 37–44; Blass, *Grammar of New Testament Greek*, 198–201; Robertson, *Grammar of the Greek New Testament*, 892–902; BDF, 175–7; and Fanning, *Verbal Aspect*, 290–305. On the compatibility between 19th- and early 20th-century philological research and more conservative contemporary approaches, see Fanning, *Verbal Aspect*, 12–29 and Tresham, "Aspect and *Aktionsart*," 8–18. But see Porter, "Defence of Verbal Aspect," 36–37.

66. E.g. πεπληρώκατε in Acts 5:28; cf. John 5:33.

67. E.g. ἑστήκαμεν in Rom 5:2 and ἑστήκατε in 2 Cor 1:24.

68. E.g. Acts 7:35; 2 Cor 2:13.

69. The stative present sense may also have overlap with this category in Wallace (e.g. the perfect forms of ἵστημι).

70. E.g. John 5:24.

71. E.g. Acts 7:35.

72. E.g. Rom 13:8. This will be briefly discussed below.

73. Rijksbaron, *Syntax and Semantics*, 29–30; Bakker, *Ancient Greek Language*, 162; Porter, *Linguistic Analysis*, 185–86.

performative Aorist in Koine Greek.[74] Thus, rather than inventing new, model-driven categories, the labels we use are empirically based in corpus usage, theoretically justified on cross-linguistic grounds, and consistent with the senses generally recognized in the literature on Koine Greek.

It is also helpful to again note that we have categorized each instance of *léluka* based on its so-called "contextual meaning." These contextual meanings are then construed as more or less semantic depending on their conventionalization (indicated by frequency and prototypicality). Combining semantic potential with prototypicality allows us to position the gram on the path of change and discern which senses are dying out and becoming semantically weaker, which senses are prototypically associated with the form at a given synchronic stage and therefore represent its most semanticized meaning, and which senses are being pragmatically introduced and beginning to gain greater semantic status. As discussed above in section 3, we take this approach because we reject the notion that a form has a semantically invariant core, with all else being merely pragmatic uses in which the same semantic core is modulated in different contexts. Rather, cross-linguistic research into grammaticalization presents an incredibly strong case that a form gradually takes on new senses in its semantic potential through interaction with the contexts in which it is used. Through conventionalization, these originally pragmatic meaning extensions become semanticized and serve as the grounds for even further meaning extensions. This results, not in an impermeable semantic/pragmatic divide, nor in a situation where all synchronic senses are contextually derived from a common, semantically invariant core. Rather a form's various uses are more or less related to others depending on their conceptual similarity which diminishes the more distant they are on the path of change, and may fall anywhere along the semantic and pragmatic continuum depending on their level of conventionalization.

74. Porter, *Linguistic Analysis*, 185–86.

So, there certainly are various contextual factors that shape the full contextual meaning of *léluka* in Koine, and they may either slow or accelerate progress along the path of change. However, the salient point is that the appearance of an advanced meaning along the grammaticalization path cannot be strictly hedged off as purely pragmatic with no effect on the form's semantic potential. To the contrary, what are initially pragmatically innovative uses slowly become semantically prototypical with an increase in frequency leading to conventionalization. Thus, a given meaning is not simply semantic or pragmatic, but more semantic or more pragmatic.

A final point to note before presenting the data is that, putting aside the theoretical debate about what constitutes a form's semantics and pragmatics, there is often basic agreement on the so-called "full contextual meaning" of a form. This is indicated in the following discussion by the citation of proponents from the various approaches who agree with the "contextual" meaning we present in our examples. Therefore, while different researchers may arrive at different interpretations of a given verbal form, it is hypothesized that there will be greater agreement on the senses with which a verbal form is compatible (even if regarded as pragmatic or contextual). Likewise, while the senses assigned to each case of *léluka* in the present study may be disputed in certain instances, it is hypothesized that the general pattern that emerges will persist. Therefore, corrections and adjustments to the following analysis, instead of undermining the present model, are welcome and will contribute to a more precise semantic-pragmatic wave of *léluka*.

4.2 *Senses Identified*

The class of **perfectal** senses constitutes the most entrenched domain in the semantics of *léluka*.[75] The gram provides a perfectal value in 319 cases (of which 313 correspond to unambiguous perfectal readings, while 6 instances constitute ambiguous examples, which can also be understood as perfective

75. Concerning the definition of the perfectal domain and the subtypes of a perfect, see sections 3.2 and 3.3.

pasts).[76] This amounts to 52% of all the occurrences of the gram. Judging from the analyzed corpus, it seems that this usage is unrestricted as far as the types of verbs are concerned. The perfectal sense is found with 74 different verbs that belong to various semantic domains.[77] Consequently, the perfect sense constitutes not only the most common, but also the most productive portion of the semantic potential of *léluka*.

Only 13 out of the 74 verbs that may appear in the present perfect function are non-*kappa* forms.[78] Some are intransitive (e.g. γίνομαι, (ἐξ/εἰσ/προσ)ἔρχομαι) while others are transitive (e.g. σήπω, λαμβάνω, γράφω). The remaining 61 verbs use the *kappa* morpheme. Once more, such verbs can be both transitive[79] and intransitive.[80] One should note that transitive verbs used in

76. Note that senses considered unambiguous are given one point while cases ambiguous between two adjacent senses on the path are given half a point for each sense.

77. These are: αἴρω (1), αἰτέω (1), ἀκολουθέω (1), ἀκούω (9), ἁμαρτάνω (1), ἀναβαίνω (2), ἀνθίστημι (2), ἀνοίγω (2), ἀποστέλλω (8), ἀσθενέω (1), γεννάω (3), γίνομαι (39), γινώσκω (18), γράφω (2), δίδωμι (26), δουλεύω (1), ἐγγίζω (14), εἶπον (13), εἰσέρχομαι (2), ἐκπίπτω (1), ἐκπληρόω (1), ἐλπίζω (4), ἐνίστημι (1), ἐξέρχομαι (3), ἔρχομαι (17), ἑτοιμάζω (1), εὑρισκω (4), ἔχω (3), ἥκω (1), καθίζω (1), καλέω (2), καταβαίνω (2), καταντάω (1), κληρονομέω (1), κλίνω (1), κοινόω (1), κοινωνέω (1), κοπιάω (4), κρίνω (4), λαλέω (13), λαμβάνω (4), λυπέω (2), μαρτυρέω (4), μεταβαίνω (2), μετέχω (1), μισέω (2), νικάω (4), ὁράω (29), παλαιόω (1), παρακολουθέω (1), παρίστημι (1), πάσχω (2), πίνω (1), πιπράσκω (1), πίπτω (1), πιστεύω (8), πληρόω (3), πλουτέω (1), ποιέω (8), ποτίζω (1), πράσσω (1), προεῖπον (4), προσέρχομαι (2), προσέχω (1), σήπω (1), συλλαμβάνω (1), συμβαίνω (1), σῴζω (7), τελειόω (1), τελέω (1), τηρέω (5), τίθημι (1), τυγχάνω (1), τυφλάω (1), φιλέω (1). As is evident from the data, the most frequent lexemes are: γίνομαι ‘happen, become’, ὁράω ‘see’, δίδωμι ‘give’, γινώσκω ‘learn, get to know’, ἔρχομαι ‘go’, ἐγγίζω ‘come near, approach’ and λαλέω ‘talk’.

78. These are: γίνομαι (γέγονεν) ‘happen, become’ (ἐξ/εἰσ/προσ)ἔρχομαι ((ἐξ/εἰσ/προσ)ελήλυθα) ‘go (out/in/near)’, (συλ)λαμβάνω ((συν)εἴληφα) ‘take, get’, πάσχω (πέπονθα) ‘suffer’, πράσσω (πέπραχα) ‘do, act’, and γράφω (γέγραφα) ‘write’, τυγχάνω (τέτυχεν) ‘obtain; happen’, σήπω (σέσηπεν) ‘cause to rot’, ἀνοίγω (ἀνέῳγεν) ‘open’.

79. For example, ἀκούω ‘hear’, λέγω ‘say’, ὁράω ‘see’, μισέω ‘hate’, ἐλπίζω ‘hope’, εὑρίσκω ‘find’, ἀποστέλλω ‘send’, προλέγω ‘predict’, and γινώσκω ‘learn, realize’, which can also be employed without a direct object.

80. For example, ἀναβαίνω ‘go up’, πίπτω ‘fall’, λαλέω ‘talk’, ἥκω

léluka are always used actively. In other words, even if the direct object is unexpressed, the construction is never de-transitivized, so that the resultative proper sense is incompatible with the gram.[81]

The perfectal value is typically found in embedded discourse (226x – 71.5%) and discourse (84.5x – nearly 27 %), which all together amount to 310.5 cases or 98%. In non-discursive fragments, the perfectal sense is rare, being uniquely found 5.5 times (2%). To be exact, it appears 2.5x in embedded narrative (2 Cor 7:7; 11:25; and 2 Cor 12:9) and three times in narration (John 1:3; Luke 1:22; 9:36). On two such occasions, the gram functions as a relative perfect, i.e. as an actional present perfect introduced from a past perspective (Luke 1:22 and 9:36; on this issue, see below in this section; the other narrative use appears in John 1:3).[82] This usage also tends to occur with transitive verbs.[83]

In the majority of the perfectal uses, the nuance of current relevance—one of the most typical traits of perfects cross-linguistically—is easily identifiable, as is evident in the following examples. For instance, in the context of Mark 9:13 quoted in (1a), Jesus' disciples note the fact that the coming of Elijah is supposed to mark the period of time in which the Messiah appears, but are puzzled by Jesus' identity as the Messiah in light of Elijah's seeming absence. Jesus says that the Elijah event has indeed occurred (in the person of John the Baptist, see Luke 1:17) and has therefore marked the subsequent

'come', κοπιάω 'toil', δουλεύω 'to be a slave' (some of them can be used with indirect objects and/or (prepositional) adjuncts).

81. The issue of transitivity is relevant because from a cross-linguistic perspective (both synchronically and diachronically) the category of a perfect is distinguished from resultative proper grams not only by its anterior sense (and a gradual emphasis on the semantic component related to the prior action triggering the state), but also by the feature of transitivity (a resultative proper is an intransitive and/or de-transitive category, while a perfect may be a transitive construction; see section 3.2).

82. The statistical information provided in this section will be crucial for designing the wave of *léluka* and the proposal of its systemic status (cf. section 5).

83. Cf. Wallace, *Greek Grammar*, 577.

period as the time in which the Messiah would appear. Furthermore, the fact that John the Baptist had died by this point seems to clearly exclude a stative reading along the lines of something like "Elijah is here" (see Mark 16:6). Thus, the sense of a completed past event with current relevance is clear.[84]

In (1b), even though "the evil one" has already been overcome, it remains currently relevant as its results persist to the present. That is, from the general context, it is clear that the evil one still remains defeated and, thus, the situation produced by the action expressed by the *léluka* form holds for the present. This analysis is also substantiated by the use of the present tense forms ἰσχυροί ἐστε and μένει, which underline the current state in which "the evil one" remains defeated.[85] However, while the sense of an ongoing state is communicated in these examples, it cannot be reduced to merely communicating such at the expense of the completed past event. [86]

(1a) ἀλλὰ λέγω ὑμῖν ὅτι καὶ Ἠλίας ἐλήλυθεν

But I tell you that Elijah **has come** [i.e. the stage of redemptive history marked by the coming of Elijah is present] (Mark 9:13)[87]

(1b) ἔγραψα ὑμῖν, νεανίσκοι, ὅτι ἰσχυροί ἐστε καὶ ὁ λόγος τοῦ θεοῦ ἐν ὑμῖν μένει καὶ νενικήκατε τὸν πονηρόν

I write to you, young men, because you are strong, and the word of God abides in you, and **you have overcome** the evil one [the evil one remains defeated] (1 John 2:14)

84. Cf. Decker, *Temporal Dexis*, 109.

85. Cf. Fanning, *Verbal Aspect*, 159.

86. As Decker (*Temporal Dexis*, 109), who applies Porter's model, points out concerning Mark 9:13, "…these prior events are the clear point here." Campbell (*Basics of Verbal Aspect*, 108) takes the *léluka* form in Mark 9:13 as perfective past. This goes to demonstrate the semantic similarity of some of these cases and the fuzzy boundaries that arise between senses as a form expands its semantic potential.

87. Note that, while the authors have analyzed the Greek text of each case, the ESV is used for most examples for the sake of consistency. Departures from the ESV are noted. Where we disagree with the ESV, we provide our own translation and also list other translations that corroborate our rendering.

Among the various examples of the perfectal value, it is possible to find cases of one of its four sub-types—i.e. resultative, inclusive, experiential and indefinite senses. The value of a **present perfect resultative** seems to be well-attested, appearing at least on 134 occasions, and with 46 types of roots (e.g. activity, accomplishment, movement), as demonstrated in the following examples (as well as in examples (1a–b), introduced previously, which can also be interpreted with the resultative sub-sense). In both examples, the *léluka* form introduces an anterior dynamic event from which one can infer certain properties of the present situation. In (2a), the character's salvation was completed and resulted in the ongoing condition of forgiveness (Luke 7:48) and peace. In (2b), the disciples had filled Jerusalem with their teaching resulting in the fact that currently (at the reference time of uttering the words) the city was full of that teaching (at least from the speaker's perspective).[88]

(2a) Ἡ πίστις σου σέσωκέν σε· πορεύου εἰς εἰρήνην

Your faith **has saved** you; go in peace (Luke 7:50)[89]

(2b) λέγων, [Οὐ] παραγγελίᾳ παρηγγείλαμεν ὑμῖν μὴ διδάσκειν ἐπὶ τῷ ὀνόματι τούτῳ, καὶ ἰδοὺ πεπληρώκατε τὴν Ἰερουσαλὴμ τῆς διδαχῆς ὑμῶν

saying, "We strictly charged you not to teach in this name, yet here **you have filled** Jerusalem with your teaching (Acts 5:28)

In some instances, *léluka* conveys the sense of a **present perfect inclusive** (we have identified 10 relatively clear cases: John 5:43, 15:24, Mark 9:21, 13:19, Matt 19:8, 24:21, 1 Tim 4:6, Jude 6, 1 John 2:14 (x2)). It seems that this usage is mostly found with the verb γίνομαι (3a–b) 'happen, become', although other verbs can also be used with this function.[90] For instance, in the following examples, *léluka* indicates that an action or state holds

88. Cf. Fanning, *Verbal Aspect*, 153–54.

89. Cf. Mark 10:52 and Fanning's (*Verbal Aspect*, 119) comments on Matt 9:22.

90. E.g. ἐλπίζω 'hope', γινώσκω 'learn, realize', τηρέω 'watch over', παρακολουθέω 'follow closely, investigate' and μισέω 'hate'.

without interruption from a determined point in the past to the present moment. In both cases, the present perfect inclusive sense can be detected overtly by means of the accompanying adverbials. They specify the exact moment in the past when the activity or state began, and inform us that these actions or condition continue into the present. In (3a), the boy's mute condition as well as the seizure-like behavior has been taking place from the boy's childhood (ἐκ παιδιόθεν) up into the present.[91] In (3b), the great tribulation (which is being predicted) has not taken place since the beginning of the world (ἀπ' ἀρχῆς κόσμου) till the time of producing the utterance (ἕως τοῦ νῦν).

(3a) καὶ ἐπηρώτησεν τὸν πατέρα αὐτοῦ, Πόσος χρόνος ἐστὶν ὡς τοῦτο γέγονεν αὐτῷ; ὁ δὲ εἶπεν, Ἐκ παιδιόθεν·

And Jesus asked his father, "How long **has** this **been happening** to him?" And he said, "From childhood" (Mark 9:21)

(3b) ἔσται γὰρ τότε θλῖψις μεγάλη οἵα οὐ γέγονεν ἀπ' ἀρχῆς κόσμου ἕως τοῦ νῦν οὐδ' οὐ μὴ γένηται.

For then there will be great tribulation, such as **has** not **been** from the beginning of the world until now, no, and never will be (Matt 24:21)

The gram is also compatible with the **present perfect experiential** value, as there are at least 46 unambiguous cases of this sense. This meaning is especially common with sensorial verbs, such as ὁράω 'see' (21 cases), ἀκούω 'hear' (7 cases; 4a), εἶπον 'say' (2 cases; 4b). However, it also appears with other verbs.[92] In this use, the gram indicates that the subject has an experience of having (or having not) performed a given action. The action is still relevant for the present state of affairs (thus, the sense of current relevance patent in all perfectal function is clearly visible), but only as a past experience. For instance in (4a), the speakers assert having heard a blasphemous speech. It is this experience which is still relevant and which holds to the

91. Cf. Decker (*Temporal Dexis*, 83), who says, "[t]he perfect with ὡς probably points to the continuing state that began in the past."

92. These include πράσσω 'do', ἀναβαίνω 'go up', συμβαίνω 'happen', κοπιάω 'toil', δουλεύω 'to be a slave', πίπτω 'fall', γινώσκω 'learn', πάσχω 'suffer', προσέχω 'pay attention', πράσσω 'do', ἔχω 'have', ποιέω 'make, do'.

present. In (4b), the point is that, resulting from his completed sufferings in the past, Christ now has the experience of having suffered and being tempted which enables him to help those who share the same experience. This is precisely why he can be a merciful high priest (Heb 2:17) who can sympathize with the Christian experience of weaknesses (Heb 4:15).[93]

(4a) τότε ὑπέβαλον ἄνδρας λέγοντας ὅτι Ἀκηκόαμεν αὐτοῦ λαλοῦντος ῥήματα βλάσφημα εἰς Μωϋσῆν καὶ τὸν θεόν

Then they secretly instigated men who said, "**We have heard** him speak blasphemous words against Moses and God." (Acts 6:11)[94]

(4b) ἐν ᾧ γὰρ πέπονθεν αὐτὸς πειρασθείς, δύναται τοῖς πειραζομένοις βοηθῆσαι.

For because he himself **has suffered** when tempted, he is able to help those who are being tempted. (Heb 2:18)

On some occasions, *léluka* may be interpreted as conveying a **present perfect indefinite** value. We have identified at least 9 relatively clear cases of this sense. In such cases, the gram indicates accomplished events whose nuance of current relevance is minimal. The actions are portrayed as done and gone, however, without being overtly located in a past time frame. These senses have been identified when the verb in context does not unambiguously describe a state entered into (i.e. present perfect resultative), does not present an ongoing occurrence from the past to the present (i.e. present perfect inclusive), or the formation of an experience the subject has as a result of a past occurrence (i.e. present perfect experiential). On the other hand, there does still seem to be an element of current relevance that differentiates these uses from a purely perfective

93. Cf. Porter (*Verbal Aspect*, 264), who affirms that this "implicates past reference to Christ's earthly suffering."

94. Porter (*Verbal Aspect*, 262) actually says that the interpretation of *léluka* here with "a past sense seems appropriate." Again, this highlights the close relationship between these sub-senses of the perfect as well as the fact that even if the putative semantics-pragmatics divide is drawn in different places, there is greater agreement on the so-called "full contextual meaning" of a form.

past sense (as communicated by the Aorist).[95] Thus, these cases have been categorized as present perfect indefinites—the cross-linguistically attested liminal sense between the present perfect and perfective past.[96]

For example, in (5a), Jesus reminds his disciples of something he has just said in the preceding discourse (John 6:44). It is not that Jesus, having made the statement in verse 44, is now in the "state" of having said it. That would take the focus off the statement itself. Rather, Jesus' intention is to draw the disciples' attention back to that past statement. Neither has Jesus' statement in verse 44 continued up to the present (there has been intervening dialogue). Jesus' point is also not that he now has the experience of having made the utterance in verse 44. This leaves the sense of the present perfect indefinite, which refers to a past, but still relevant event (though its "relevance" is not found in a resulting state, continuing action, or experiential value).

Similar observations can be made about (5b). Paul is not saying that Jesus' statement has resulted in an ongoing state, nor that Jesus' utterance was continuing up to the present moment. Nor was Paul pointing out that Jesus now had the experience of having made the statement. Nevertheless, Paul is presenting this past event as having some level of current relevance for his present situation. Thus, this fits the crosslinguistic definition of a present perfect indefinite.[97]

95. Recalling figure 4 above in section 3.2, this sense represents the final stage in the decomposition of a post-resultative gram's bi-dimensional structure in which the "present" portion of that structure gives way to the "past" portion, moving the gram from the grammatical category of the present perfect to the definite past (although, even after reaching the perfective past sense, it has yet to reach the non-perfective past sense).

96. Among verbs that are found with this sense in the *léluka* form are γίνομαι 'happen' (5a), εἶπον 'say' (5b), προλέγω 'predict', εὑρίσκω 'find', λαλέω 'talk', ἀποστέλλω 'send', ἀκούω 'hear'.

97. Alternatively, if these cases are analyzed as non-perfective pasts (as in most translations), this too can be accommodated by the wave model, since it would only provide more cases where the form has advanced further along the path. In any case, conceptual similarity between the present perfect indefinite and perfective past senses is acknowledged to be very high. Therefore, cases in which they may be difficult to distinguish are expected.

(5a) καὶ ἔλεγεν, Διὰ τοῦτο εἴρηκα ὑμῖν ὅτι οὐδεὶς δύναται ἐλθεῖν πρός με ἐὰν μὴ ᾖ δεδομένον αὐτῷ ἐκ τοῦ πατρός.

And he said, "This is why **I told** you that no one can come to me unless it is granted him by the Father." (John 6:65)

(5b) καὶ εἴρηκέν μοι, Ἀρκεῖ σοι ἡ χάρις μου, ἡ γὰρ δύναμις ἐν ἀσθενείᾳ τελεῖται.

But **he said** to me, "My grace is sufficient for you, for my power is made perfect in weakness." (2 Cor 12:9)

The taxis value, typical of the perfectal uses explained above, may also be introduced from **other temporal perspectives**. To be exact, on five occasions, the *léluka* form is used as a relative past perfect, i.e. as a present perfect located in a past time frame. In (6a) and (6b), the explicit past time frame is overtly established by the aorist verbs of which the subordinate clauses containing the *léluka* forms are the complement.[98]

(6a) ἐξελθὼν δὲ οὐκ ἐδύνατο λαλῆσαι αὐτοῖς, καὶ ἐπέγνωσαν ὅτι ὀπτασίαν ἑώρακεν ἐν τῷ ναῷ

And when he came out, he was unable to speak to them, and they realized that **he had seen** a vision in the temple (Luke 1:22)

(6b) καὶ αὐτοὶ ἐσίγησαν καὶ οὐδενὶ ἀπήγγειλαν ἐν ἐκείναις ταῖς ἡμέραις οὐδὲν ὧν ἑώρακαν

And they kept silent and told no one in those days anything of what **they had seen** (Luke 9:36)

In addition, such a relative perfect function is once introduced from a future perspective:

(7a) πάντως ἀκούσονται ὅτι ἐλήλυθας

They will certainly hear that **you have come** (Acts 21:22)

In these cases, the perfect retains its prototypical sense, but in relation to a mental space that is distinct from the speaker's base space in the moment of communication. That is, in the mental space configuration of the utterance, the viewpoint shifts from the narrator to the character. For example, in (6a) above, ἑώρακεν

98. Cf. Porter (*Verbal Aspect*, 261), where he says Luke 1:22 (as well as Luke 9:36) illustrates "past implicature of the Perfect."

marks the viewpoint as being that of the character who saw that Zachariah was unable to speak and realized, "he has seen a vision." The indirect quotation leads us to translate it from the narrator's perspective as a pluperfect "he had seen a vision." However, the viewpoint is that of the character, thus preserving the present perfect sense.[99] More precisely, this is a case of free indirect speech that "superimposes the narrative space's temporal viewpoint on that of the quoted speech space."[100] In other words, this is an example of "embedded perspective."[101] It is not that *léluka* itself creates this embedded perspective. The point is that *léluka* retains its prototypical sense, but the embedded perspective leads us to access it from the viewpoint of the narrator (signaled by the aorist verb in the main clause). An analogous observation also holds true for Acts 21:22 in a future temporal frame.[102]

The sense of a non-stative **present** is another highly frequent component of the semantic potential of *léluka*. This value occurs in 219 cases, which constitute 36% of all the occurrences of this gram. However, only a few verbs can be used with the non-stative present meaning: οἶδα 'know' (210x; 8b), ἔοικα 'be like' (2x) and πέποιθα 'believe, trust' (6x; 8b) and once σύνοιδα 'be privy to, know'. The 210 cases of the verb οἶδα make up 96% of present uses. Although the forms (σύν)οἶδα and πέποιθα were originally derived from roots with the meaning of 'seeing' (cf. the Aorist εἶδον and the obsolete Present εἰδῶ/ἴδω) and 'convincing' (cf. the Present πείθω), they function as *presentia tanta*, i.e. as forms with the regular meaning of a present ('he

99. These cases are also affected by "the Greek tense sequence rule" by which, in indirect discourse, "the verbal aspect of direct speech is retained" (Porter, *Idioms*, 268–69).

100. Dancygier and Sweetser, *Mental Spaces in Grammar*, 65.

101. Dancygier and Sweetser, *Mental Spaces in Grammar*, 202.

102. Compare the analogous point made regarding the present with future reference in Dancygier and Sweetser, *Mental Spaces in Grammar,* 89–95. For the application of Mental Space Theory to verbal tense and aspect, see Cutrer, "Time and Tense"; and Boogaart and Janssen, "Tense and Aspect." For the application of Mental Space Theory to the periphrastic perfect in Ancient Greek, see Bentein, "Periphrastic Perfect."

knows' and 'he believes'), synchronically unrelated to the underlying roots. A similar explanation applies to ἔοικα that functions as a paradigmatic present with no present tense form as such. Three verbs that appear with this sense have non-kappa forms. Two of them (οἶδα and σύνοιδα) are transitive, while the third πέποιθεν is used intransitively, although with a prepositional complement. The verb ἔοικα exhibits the kappa morpheme in *léluka* and is intransitive.

The scarcity of different lexical verbs compatible with a non-stative present sense suggests that, despite a superficial frequency of such uses, the actual weight of this sense in the semantics of the *léluka* gram is much weaker. That is, since this value is compatible with only four verbs in the corpus, it seems to be unproductive. As was the case of the perfectal uses, the sense of a non-stative present is typically found in non-narrative passages, where it appears 218 times, which equals 99.5% of this sense's occurrence. It is possible to discern it in discourse on 78 occasions (nearly 35.5%) and 140 in embedded discourse (64%). Additionally, it is found once in genuine narration (0.5%), although this last case may also be understood as narrative comment and, thus, as embedded discourse (Rev 19:12). With this function, a verb in the *lékuka* form expresses a present activity. Unlike the prototypically stative present meaning (cf. next paragraph), the non-stative present sense does not appear with qualitative or adjectival predicates, but rather with certain transitive verbs.[103] In (8a), upon seeing Jesus, the demon immediately knows who Jesus is and expresses his recognition of Jesus' identity.[104] In (8b), the mocking crowds at Jesus'

103. For definitions and crosslinguistic illustrations of a non-stative present, a stative, and a resultative stative, see section 3.2.

104. The present sense of οἶδα is agreed on by scholars from various sides of the debate (e.g. Wallace, *Greek Grammar*, 579; Decker, *Temporal Deixis*, 109). As Porter (*Verbal Aspect*, 265) helpfully summarizes, "[p]resent usage of the Perfect tense is the most commonly accepted category in the standard grammars," but is careful to qualify, "[i]t can be questioned whether nearly so many examples as is often assumed actually fit this category; nevertheless, clear cases with deictic indicators can be found." That verbs such as οἶδα would acquire this sense also has comparative corroboration (see section 5.2).

crucifixion sarcastically refer to his present trust in God, whom the crowd considers laughably absent in light of Jesus' current circumstances.

(8a) οἶδά σε τίς εἶ, ὁ ἅγιος τοῦ θεοῦ

I know who you are—the Holy One of God (Mark 1:24)

(8b) πέποιθεν ἐπὶ τὸν θεόν

He trusts in God (Matt 27:43)

The stative present and resultative stative present senses are highly infrequent and, as the present value discussed above, unproductive. The **stative present**, i.e. the use where the gram expresses qualities or conditions with no resultative undertones, is found 21 times, which constitute 3.5% of all the occurrences of *léluka* in the analyzed corpus.[105] The stative (present) value seems to be compatible with only four verbs, namely ἵστημι 'put, set' (18 cases; cf. ἕστηκα 'stand, be standing' in 9a–b), παρίστημι 'stand with/behind' (1x), συνίστημι 'withstand' (1x) and ἐφίστημι 'stand by' (1x). It should be noted that all these verbs use kappa forms and are intransitive, which is consistent with the typological properties of the domain of a stative present. As with the others, the use predominates in discursive texts: discourse 10x, embedded discourse 10x. However, the stative present value appears in narrative once, where *léluka* is employed in a relative clause and, thus, in a relative stative function (Rev 8:2).

The stative present sense can be seen in (9a–b) in which there is no longer any connection between the achieved state and the event from which it emerged. As Fanning helpfully explains regarding the *léluka* form of ἵστημι, "the perfect serves always as an intransitive stative present, without implication of a previous act of 'taking one's stand'."[106] This is in contrast to the examples of the resultative stative present sense below which include in

105. This occurs in Matt 12:47; 20:6; Luke 8:20; John 1:26; Acts 1:11; 4:10; 7:33; 26:6, 22; Rom 5:2; 11:20; 1 Cor 15:1; 2 Cor 1:24; Col 1:17; 2 Tim 2:19; 4:6; Heb 10:11; Jas 5:9; and Rev 3:20; 8:2.

106. Fanning, *Verbal Aspect*, 140 n. 33.

the verbal idea the event that triggered the present state as well as the state itself.

(9a) καὶ λέγει αὐτοῖς, Τί ὧδε ἑστήκατε ὅλην τὴν ἡμέραν ἀργοί;

And he said to them, 'Why do **you stand** here idle all day?' (Matt 20:6)

(9b) καὶ νῦν ἐπ' ἐλπίδι τῆς εἰς τοὺς πατέρας ἡμῶν ἐπαγγελίας γενομένης ὑπὸ τοῦ θεοῦ ἕστηκα κρινόμενος

And now **I stand** here on trial because of my hope in the promise made by God to our fathers (Acts 26:6)

The value of a **resultative stative present** is found in 4 cases, which amount to 0.7%.[107] It is important to note that there is only one verb that is used with a resultative stative present sense, namely τέθνηκα 'be dead' (from θνήσκω 'die'). Twice, this sense appears in embedded discourse (Luke 8:49; Matt 2:20), once in discourse (1 Tim 5:6), and once in narrative with a relative resultative stative present sense (Mark 15:44). As the verbs expressing a stative sense, the predicates that express the resultative stative present sense employ the *kappa* form and are intransitive, in agreement with the typological behavior of this domain and forms that convey it. For instance, in (10a), the *léluka* verb emphasizes a resulting static condition of the girl being dead as the reason to no longer seek Jesus' help for healing. This is also seen in (10b) where the present participle ζῶσα, communicating contemporaneous action with τέθνηκεν, highlights the emphasis on the resulting state of spiritual death which continues on while the person physically lives. In these cases, the condition which effected the resulting state is only minimally present in the verbal form.

(10a) …λέγων ὅτι Τέθνηκεν ἡ θυγάτηρ σου· μηκέτι σκύλλε τὸν διδάσκαλον

…and said "Your daughter **is dead**; do not trouble the Teacher any more" (Luke 8:49)

(10b) ἡ δὲ σπαταλῶσα ζῶσα τέθνηκεν

but she who is self-indulgent **is dead** even while she lives (1 Tim 5:6)

107. Luke 8:49; Mark 15:44; Matt 2:20; and 1 Tim 5:6.

In total, the present uses—non-stative present, stative present and resultative stative present—amount to 244 cases or 40.5% of the occurrences of *léluka*. However, only a few verbs are compatible with these functions, suggesting the non-productivity of the domain in the semantics of the gram. Such verbs use both *kappa* and non-*kappa* forms and can be transitive and intransitive. The resultative stative present and stative present uses are invariably intransitive.

The value of a definite **past** appears in 34 relatively unambiguous cases.[108] Furthermore, on six occasions, the use of *léluka* can be read either as a past sense or an indefinite perfect.[109] Thus, in total, the past domain constitutes slightly more than 6% (37x) of the semantic potential of the gram. In all possible instances where the past sense may be associated with the *léluka* form, the aspectual force is invariably perfective—the gram introduces bound and punctiliar events. One should note that the past reading may be postulated due to the presence of some explicit adverbials (e.g. μέσης δὲ νυκτὸς 'at midnight' in example 11a) and the use of accompanying Aorist forms with a past force, as well its use in the description of a past event (as in example 11b).

It is important to note that every such past reading is not merely concluded from its English translation value, but has been postulated due to the presence of certain explicit features found in the text. Such overt indicators can be past adverbials, which establish the definite temporal location of the event in the past (as in example 11a: μέσης δὲ νυκτὸς 'at midnight') and accompanying aorist forms with a palpable past force which are related to the past event expressed by *léluka* (as in example 11b: ἐφανερώθη 'was made manifest').[110]

108. These are: Matt 1:22; 21:4; 25:6; Mark 5:33; John 1:15; 3:26; 6:25, 32; 7:19; 19:35; Acts 7:35; Rom 9:29; 16:7; 1 Cor 13:11; 2 Cor 2:13; 13:2; 1 Tim 2:14; Heb 7:6 (2x); 7:14; 10:9; 11:17; 11:28; James 1:24; 1 John 1:2; 4:9–10, 14; Rev 5:7; 7:14; 8:5; 12:4; and 19:3.

109. Acts 13:34; 1 Cor 2:8; 2 Cor 12:9; Heb 4:3, 4; and 1 John 1:5.

110. Cf. Fanning's threefold criteria which he says may indicate this sense: "(1) when it is coordinated with an aorist, (2) when the context denotes no relationship of the past action to present time, and (3) when the perfect is

(11a) μέσης δὲ νυκτὸς κραυγὴ γέγονεν, Ἰδοὺ ὁ νυμφίος, ἐξέρχεσθε εἰς ἀπάντησιν [αὐτοῦ].

But at midnight, a cry **rang out**,[111] "Here is the bridegroom! Come out to meet him." (Matt 25:6)

(11b) ἐν τούτῳ ἐφανερώθη ἡ ἀγάπη τοῦ θεοῦ ἐν ἡμῖν, ὅτι τὸν υἱὸν αὐτοῦ τὸν μονογενῆ ἀπέσταλκεν ὁ θεὸς εἰς τὸν κόσμον ἵνα ζήσωμεν δι' αὐτοῦ

In this the love of God was made manifest among us, that God **sent** his only Son into the world, so that we might live through him (1 John 4:9)

Contrary to the uses that have been discussed previously, the sense of a perfective past is quite common in non-discursive passages (in total 28%). It appears 9 times in narrative and 1.5 times in embedded narrative. The discursive uses of perfective past *léluka* constitute 72%. The gram appears 14.5 times in discourse and 12 times in embedded discourse. The semantic domain of a perfective past shows a relative productivity, being compatible with at least 21 verbs.[112]

The most examples of the perfective past use involve dynamic, achievement, and activity verbs (e.g. γίνομαι 'happen, become', δίδωμι 'give', and λαμβάνω 'take'). However, less dynamic verbs such as ἀγαπάω 'love' and ἵστημι 'stand' can also express this sense, thus receiving an actional, dynamic and possibly ingressive reading. Among these verbs, one finds both *kappa* (e.g. μεμαρτύρηκα, δέδωκα, εἴρηκα) and non-*kappa* (e.g.

accompanied by an adverbial modifier highlighting the past-time reference" (*Verbal Aspect*, 300). Here, Fanning cites Mandilaras (*Non-Literary Papyri*, 225–6). However, Fanning also notes that these indications do not necessarily guarantee an aoristic reading of *léluka*. Porter (*Verbal Aspect*, 264) also sees past reference here, though relegating it to mere implicature rather than the semantics of the form.

111. The ESV has "there was a cry." This also communicates a perfective past sense, but it is brought out more clearly in the translation above.

112. These verbs are: γίγνομαι 'happen, become' (8), μαρτυρέω 'bear witness' (2), δίδωμι 'give' (2), ἀποστέλλω 'send' (3), λαμβάνω 'take' (2), εἶπον 'say' (5), κράγω 'cry, shout' (1), ὁράω 'see' (1), ἀγαπάω 'love' (1), ἵστημι 'stand' (1), ἀκούω 'hear' (0.5), γινώσκω (0.5), προεῖπον (2), καταργέω (1), ἔχω (1), δεκατόω (1), εὐλογέω (1), ἀνατέλλω (1), προσφέρω (1), ποιέω (1), ἀπέρχομαι (1).

κέκραγα, γέγονα, εἴληφα) forms. Although the majority of them are transitive, some are inherently intransitive (γίνομαι, ἵστημι, κράζω) or may be used intransitively (μαρτυρέω).

It should be noted that, while the cases of the perfective past value indeed fit the semantic value of a perfective past,[113] in several cases the *léluka* form also seems to have an additional function which has been variously labeled as vividness,[114] "frontground" prominence,[115] or heightened proximity.[116] Thus, the instances of *léluka* with a perfect past sense are not necessarily exactly the same as an aorist, but may refer to a perfective past action in addition to highlighting the continuing relevance (usually in discourse) or vividness (usually in narrative) of that action.[117] That is, *léluka* seems to be pragmatically employed in narrative to create vividness in the description of a perfective past action created by its use in a non-prototypical context (i.e. narrative).[118] It seems to be employed in embedded narrative to rhetorically signify the abiding relevance of a perfective past action. This seems to be the basic thrust of what has been called the "allegorical perfect" common in Hebrews, which presents a past OT event as paradigmatically relevant for the contemporary audience.[119] These pragmatic

113. Note again the definition of perfective past mentioned above from Dahl, *Tense and Aspect Systems*, 78; Bybee et al., *Evolution of Grammar*, 54; and De Haan, "Typology of Tense," 451.

114. E.g. Robertson, *Grammar of the Greek New Testament*, 898; Wallace, *Greek Grammar*, 578.

115. E.g. Porter, *Verbal Aspect*, 260–65; Decker, *Temporal Deixis*, 22; Mathewson, *Verbal Aspect*, 41–45.

116. E.g. Campbell, *Indicative Mood*, 195–201; Campbell, *Basics of Verbal Aspect*, 51. Cf. McKay's ("New Testament Greek," 31–32) observations of this usage in non-literary papyri and the corresponding discussion in Mandilaras (*Non-Literary Papyri*, 225–26), both cited in Fanning, *Verbal Aspect*, 301.

117. Cf. Fanning, *Verbal Aspect*, 303.

118. Compare the similar observation concerning the historical present made by Runge, "Historical Present Indicative," 203–4.

119. See discussions in BDF, 176; Fanning, *Verbal Aspect*, 305; Moule, *Idiom Book*, 14–15; Wallace, *Greek Grammar*, 581–82. Incidentally, this distributional observation seems to unify the "aoristic" and "allegorical" uses of

extensions into the perfective past sense are exactly what we would expect given the position of *léluka* on the path of grammaticalization. While these begin as more pragmatic extensions, their semantic status increases with frequency of use and conventionalization as the gram progresses on the path. In fact, it may be hypothesized that such pragmatic uses accelerate the gram's movement along the cognitively motivated path of change.

Finally, on five occasions (nearly 1%), the *léluka* gram is employed in a **performative** function. The performative is a function where a grammatical form performs a speech act—it performs the reality by being pronounced. An explicit way of accomplishing certain performative acts consists of using performative verbs in the 1st person. Such performative predicates describe the exact type of an action carried out by a speaker and may be divided into five main classes. These types are: verdictives (verbs of giving a judgment or approval); exercitives (warning and advising, appointing and nominating, giving and sending); commissives (promising or undertaking); behabitives (apologizing, cursing, condoling); and expositives (telling, denying, agreeing).[120]

The performative use of *léluka* in the analyzed corpus is possible with four performative verbs, which naturally lend themselves to performative utterances. In most examples exercitive verbs are employed: τίθημι 'make, put' (Rom 4:17 [cf. 12a] and Acts 13:47), δίδωμι 'give' (Luke 10:19) and ἀποστέλλω 'send' (Acts 15:27 [cf. 12b]).[121] Once, an expositive verb is used:

the perfect under the typologically attested sense of perfective past, which tend to occur in narrative and discourse contexts, respectively, for similar pragmatic purposes.

120. Austin, *Things with Words*, 32, 62, 65, 148, and 152–61; Searle, *Philosophy of Language*, 68. Cf. also Bublitz, *Englische Pragmatik*, 75, and Andrason, "Performative Qatal," 16–18.

121. This use of the verb ἀποστέλλω corresponds to the category of an epistolary perfect found in various languages. An epistolary perfect is a "perfect" form that is used in epistolary genres, usually in certain fixed expressions that involve the verb 'to send'. This appears, for instance, in Akkadian (Loesov, "Akkadian Sentences," 115–17), Biblical Hebrew (Waltke

μαρτυρέω ‘bear witness’ (John 1:34 [12c]). All of them exhibit the *kappa* variants and are transitive (including the verb μαρτυρέω which governs an object relative ὅτι clause). These correspond to the so-called epistolary perfects.[122]

Among all these possible cases of the performative uses, John 1:34 and Rom 4:17 seem to be the clearest. The *léluka* forms in Acts 13:47, 15:27, and Luke 10:19 possibly convey this sense as well. However, the act of giving in Luke 10:19 may also refer to an action previously completed.

(12a) κἀγὼ ἑώρακα, καὶ μεμαρτύρηκα ὅτι οὗτός ἐστιν ὁ υἱὸς τοῦ θεοῦ

And I have seen and **bear witness** that this is the Son of God (John 1:34)[123]

(12b) ἀπεστάλκαμεν οὖν Ἰούδαν καὶ Σιλᾶν καὶ αὐτοὺς διὰ λόγου ἀπαγγέλλοντας τὰ αὐτά.

We therefore **send** Judas and Silas, who themselves will tell you the same things by word of mouth (Acts 15:27)[124]

(12c) Πατέρα πολλῶν ἐθνῶν τέθεικά σε

I **make** you a father of many nations (Rom 4:17)[125]

and O’Connor, *Biblical Hebrew Syntax*, 489; Andrason, “Performative Qatal”), Classical Greek (Smith, *Greek Grammar*, 43), and Latin (Greenough et al., *Latin Grammar*, 301).

122. See Mandilaras (*Non-Literary Papyri*, 237–38) for discussion, cited in Porter, *Verbal Aspect*, 266.

123. The ESV has been changed here to highlight the performative meaning. Cf. KJV, AV, GNB, LEB, NCV, NIV, and NLT.

124. The ESV has been changed here to highlight the performative meaning. Cf. GNB, NET, NCV, NIV, and NLT.

125. The ESV has been changed here to highlight the performative meaning (cf. NCV). It is important to note that Rom 4:17 quotes the LXX of Gen 17:5, where τέθεικα is a translation of the Hebrew נְתַתִּיךָ. This Qatal form introduces a performative action and literally translates as ‘I give you’ (Rogland, *Uses of Qatal*; Andrason, “Performative Qatal”; compare the translations of Gen 17:5 in the GNB and NCV). A parallel use of the form is found in Gen 17:8, where the performative sense also seems clear (cf. NKJV). One should note that Qatal is a regular expression of the performative function in Biblical Hebrew (Waltke and O’Connor, *Biblical Hebrew Syntax*, 488; Rogland, *Uses of Qatal*; and Andrason, “Performative Qatal”) and the verb נָתַן is quite commonly employed in performative utterances with an exercitive

4.3 *Summary of Data*

To conclude, as far as semantic potential is concerned, the perfectal senses are the most common and productive, being compatible with a large variety of roots, whereas present values of any type (resultative stative, stative and non-stative) are compatible with a very few verbs only (9 verbs in the three categories jointly), and thus seem closed and unproductive. However, this sense is thoroughly conventionalized and therefore falls near the semantic pole of the semantic-pragmatic continuum (at least for those lexical verbs with which it is compatible). The perfective past sense seems to be somewhat productive, appearing with 21 verbs on 37 occasions. These uses therefore seem to fall somewhere between the poles of the semantic-pragmatic continuum at this stage in the development of the Greek verbal system.

With respect to the types of text, *léluka* is most commonly found in non-narrative passages: 583 cases or nearly 97%. More specifically, it appears 189 times in discourse (nearly 31%) and 394 times in embedded discourse (65%). On the contrary, in non-discursive fragments, it is found only 19 times.[126] In total, in non-discursive sections, the perfective past value predominates, amounting to 55%. It appears in 60% of narrative *léluka* (9x), and in 37.5% of embedded-narrative *léluka* (1.5x).

Most significantly, the attested senses of *léluka* discussed above correspond both to the typological senses associated with perfect forms and to the traditional categories used to describe the form in Koine Greek. These results have strong implications for how we ought to understand the form's diversity of senses and suggests a way through the current debate over the Koine Greek verbal system—specifically the entrenched positions about where to draw the semantic-pragmatic divide. These implications will be discussed further in sections 5 and 6 below. Section 5 will describe the above semantic potential of *léluka* as

function (see, for instance, Gen 15:18, 23:11 as further examples).

126. 15 times in narrative (Matt 1:22; 21:4; Mark 5:33; 15:44; Luke 1:22; 9:36; John 1:3, 15; Rev 5:7; 7:14; 8:2, 5; 12:4; 19:3, 12), and 4 times in embedded narrative (2 Cor 2:13; 7:5; 11:25; 12:9).

a conceptually coherent, synchronically dynamic wave travelling along the cognitively motivated resultative path. Section 6 will then compare this account to the major contemporary approaches to *léluka* in New Testament Greek, with implications for the verbal system as a whole.

5. *Constructing a Dynamic Definition of* Léluka *in the Greek New Testament*

In the following discussion, we will describe how the model of the present study, presented in section 3 above, can be applied to the specific corpus data presented in section 4 above and render an analysis of *léluka* that is linguistically supported, conceptually coherent, functionally realistic, and empirically based, without undermining the form's polysemous character or rendering the account incompatible with universally observed language change. We begin in section 5.1 by describing *léluka* according to a semantic map that is cross-linguistically consistent with post-resultative grams. To this map is added frequency values of each sense expressed by *léluka* to form a dynamic, synchronic wave representation of the form's semantic potential. In section 5.2, we discuss the relationship between the simultaneous and anterior clines of the resultative path. Then in section 5.3, diachronic data from the major periods of Greek is used to corroborate the present analysis by demonstrating that previous and subsequent stages of *léluka* evidence less and more advanced (respectively) placement of its wave on the path of change, which is exactly what the model predicts.

5.1 Léluka *as Dynamic Waves on a Semantic Map*

Having described the semantic potential of *léluka*, the following question arises, which has occupied Greek scholarship on the meanings of the verbal forms for an era: what makes coherent sense of this form given the variety of meanings with which it is compatible? While there are increasingly numerous attempts to answer this by positing a semantically invariant core, a more explanatorily powerful, theoretically satisfying, and

linguistically realistic resolution is reached by employing the model of maps and waves.

The conceptual and diachronic connection of the various values offered by *léluka* can be recovered if one uses the anterior and simultaneous paths as templates for mapping the semantic potential of this construction. To be exact, the senses of an inclusive, resultative, experiential and indefinite perfect as well as perfective past can be organized in the order established by the anterior cline, while the senses of a resultative stative present, stative present and non-stative present can be linked to each other by means of the simultaneous cline. In this way, the gram covers larger parts of the resultative path with the exception of the resultative proper stage (which constitutes the historical center of the map and its two sub-clines) and non-perfective past (the final stage on the anterior cline). This qualitative composition of the semantic potential is graphically represented in Figure 7, below. It should be recalled that from a typological perspective, the performative uses can be viewed as a meaning extension arising from the resultative proper value, concurrent with the perfectal stage of the anterior cline. Therefore, we locate it closer to the anterior cline. As a result, from a qualitative point of view, the gram could be defined as a semi-advanced resultative-path gram spanning most of the semantic domains available along the two directions typical of resultative proper constructions, i.e. the anterior and simultaneous clines.

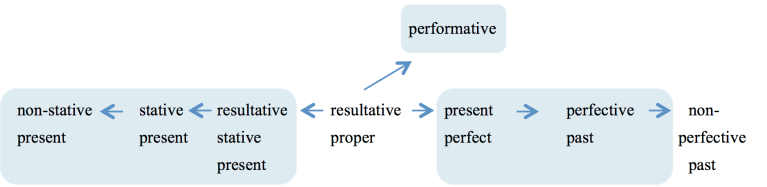

Figure 7: The qualitative map of *léluka*[127]

127. The shaded areas are the senses expressed by and/or compatible with *léluka*.

Although the qualitative mapping provides the correct information about the range of senses possibly conveyed by *léluka*, as well as the historical ordering of those senses as the form's semantic potential developed through mechanisms of meaning extension, it cannot be regarded as a fully accurate representation of the semantics of this form. This inadequacy stems from the fact that the qualitative map does not represent the statistical contribution of the senses to the meaning of the form and therefore is not sensitive to the degree of prototypicality a given sense may have. The global evidence concerning the frequency, introduced in section 4, indicates that the present perfect and simple present senses are the most common, amounting to 53% and 36%, respectively. Other values are significantly less frequent: perfective past at 6%, stative present at just over 3%, and resultative stative present at less than 1%. Additionally, in nearly 1% it is used with a performative force (note that these figures are rounded). If this quantitative information concerning the semantic potential of *léluka* is incorporated into the model, the vectored map posited in Figure 7 above receives the following wave-interpretation in Figure 8 below, which, in addition to showing the semantic domains compatible with *léluka*, also specifies their degree of prototypicality, indicated by frequency.

Furthermore, as discussed in 3.1 above, semantics is understood as conventionalized pragmatics, corresponding to prototypicality and frequency. Rather than being separated by an impermeable boundary, pragmatics and semantics form a continuum that links two idealized poles, i.e. that of idealized pragmatics (purely innovative meaning extensions found only once) and that of idealized semantics (the sense that is found always, in all the cases where the form appears). As explained, it is the intermediate stages that are typically found in languages, not such idealized poles. Given this observation, the representation of the statistical distribution of the senses is enhanced by including a vertical axis representing the place of a given sense on the semantic-pragmatic continuum.

In this manner, the figure indicates, on the one hand, which values are more conventionalized, being relatively closer to the

semantic pole, and on the other hand, which are less conventionalized, being closer to the pragmatic pole. The more semanticized senses include the present perfect and non-stative present, while the more pragmatic senses include the stative present and resultative stative present. The perfective past value represents an intermediate degree of semantization. Of course, in Figure 8 below, the correspondence between a sense and its degree of semantic or pragmatic status is only relative to other senses and should not be taken as an absolute value.[128]

Furthermore, this global data may be analyzed more specifically according to author idiolect, discourse type, literary level, and lexical productivity in order to arrive at a more fine-grained view of the form under these different contextual pressures. We will describe each of these in turn. If the data is analyzed separately for the nine New Testament authors, the distribution of the senses is as follows.[129] In the texts composed by John (Gospel of John, 1, 2, 3 John, and Revelation), Luke (Gospel of Luke and Acts), Mark, as well as the epistles written by James and Peter, and the letter to the Hebrews, the present perfect sense is the most common, being followed by the non-stative present. However, in the Gospel of Matthew, it is the non-

128. It should also be noted that the reduction of the difference between semantics and pragmatics to frequency is a simplification. However, grammaticalization and one of its most important aspects, the change from the realm of pragmatics (inference) to semantics (code), are closely tied to increase in frequency (Ariel, *Pragmatics and Grammar*, 54–55; Westbury, "Left Dislocation," 202–212).

129. The separate analysis for different authors and literary levels aims at determining whether there are any significant variations in comparison with the wave based on undifferentiated data from the entire corpus. It is possible that authors are either more advanced or more conservative in their use of *léluka*. That is, they may use the gram in a less advanced manner (i.e. with relatively more perfectal uses) or in a more advanced manner (e.g. with relatively more definite past uses). Such idiolectal or genre-dependent disturbances are not uncommon crosslinguistically and stem from the complexity of language—a single language exhibiting different profiles in different social, geographic, literary and diachronic strata. We assume traditional attributions of authorship (although deciding to separate Hebrews from the Pauline epistles). However, the model may accommodate any authorship grouping.

stative present sense that is the most common, with the present perfect being second most frequent. In the epistle of Jude, the present perfect senses and the present senses are equally common.

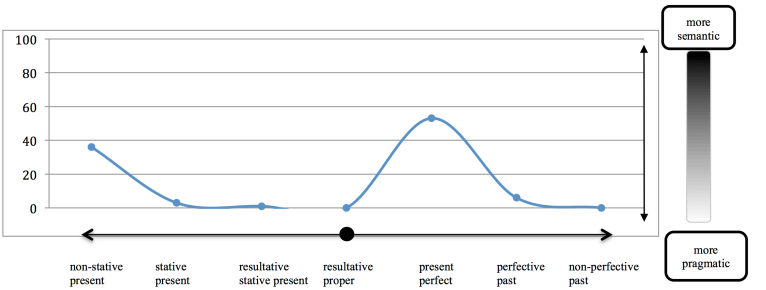

Figure 8: Wave of *léluka*—global frequency and pragmatics-semantics continuum[130]

The perfective past sense is the third most common in all the authors, except in Luke where it is the least frequent (less than 2%) and in Hebrews where it is the second most common sense (22%).[131] However, despite minor divergences, the overall shapes

130. The continuous line (curve) of the wave makes reference to the gradualness of semantic progression and meaning extensions along the grammaticalization cline, in this case, the resultative path. Thus, even if the path distinguishes seven stages (presented on the horizontal axis as discrete points), the diachronic progression along them and the conceptual connection between them is gradual. Therefore, the border that would separate them is fuzzy (cf. section 3.2). The uninterrupted line of the wave makes this gradualness and fuzziness explicit. One should also note that, for the sake of clarity, the performative extension will not be included in the wave model as it would require an additional horizontal axis, significantly complicating the readability of the figures. Given that the performative function does not play a crucial role in the semantics of *léluka,* it will be omitted in figures in this section.

131. The exact frequencies are the following: Johannine literature: present perfect 61%, present 32%, perfective past 6%, stative 0.5%, performative 0.5%. Luke-Acts: present perfect 52%, present 32%, stative 9%, performative 4%, resultative stative 1%, perfective past 2%. Mark: present perfect 52%, present 42%, perfective past 3%, resultative stative 3%. Matthew: present perfect 32.5%, present 51%, perfective past 8%, stative 5.5%, resultative stative 3%.

of the waves of *léluka* in different authors are consistent, as may be observed in the figures below (for clarity, Figure 9 has been split in two: one for the Matthew, Mark, Luke-Acts, Johannine literature, and Pauline epistles, and the other for the General Epistles).[132]

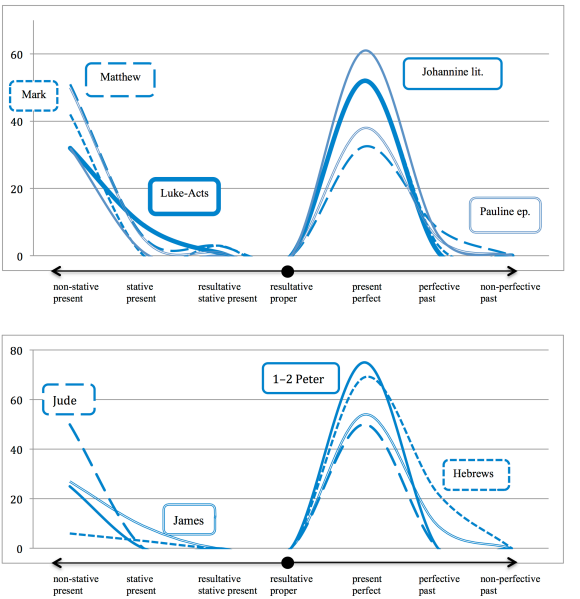

Figure 9: Waves of *léluka* in the nine authors

Pauline epistles: present perfect 38%, present 50%, perfective past 5%, stative 5%, resultative stative 1%, performative 1%. Hebrews: present perfect 68%, perfective past 22%, present 6%, stative present 3%. James: present perfect 55%, present 22%, perfective past 9%, stative present 9%. 1, 2 Peter: present perfect 75%, present 25%. Jude: present perfect 50% and present 50%. One should note that the two last corpora are highly reduced—1, 2 Peter only has four cases of *léluka*, while Jude has only two. Therefore, the waves traced for the authors of these texts cannot be viewed as fully representative.

132. In Figure 9, the waves of *léluka* in Luke-Acts and Mark overlap in the zone of a present perfect. This renders the latter wave less "visible" in the right part of the diagram, which corresponds to the meaning extensions available along the anterior path. For the sake of clarity, in the figures that include many waves (cf. Figure 9, 10 and 11), the bullets representing the frequency are absent.

The waves in the four different genres are quite different, as seen in Figure 10 below. As far as the anterior cline is concerned, the peak of the wave is most advanced in narrative, being followed by embedded narrative. The wave in embedded discourse is less advanced than than in narrative, although it is still more advanced than discourse. This is significant in light of the fact that it is in narrative and embedded narrative that we find the more pragmatic uses of *léluka*. As mentioned in section 4.2 above, *léluka* is used to create narrative vividness (e.g. in the apocalyptic narrative of Revelation) or to rhetorically highlight the paradigmatic significance or continuing relevance of a perfective past event (e.g. in the embedded narrative of Hebrews). While no one contextual factor is fully responsible for the movement of a form along its path of change, these uses certainly contribute to the progression of *léluka* to take on the perfective past sense into its semantic potential. And, while most of these uses still seem to retain the feeling of pragmatic implicature, the sense of perfective past, already in first-century Koine, appears to be moving away from the pragmatic pole and toward the semantic pole on the semantic-pragmatic continuum.

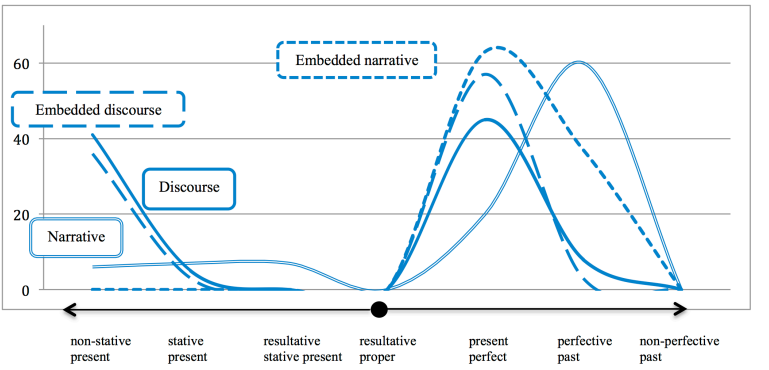

Figure 10: Waves of *léluka* in the four genres[133]

133. The exact statistical data is as follows. Discourse: present 41% (78x), stative 5% (10x), present perfect 45% (85.5x), perfective past 8% (15.5x). Embedded discourse: present 36% (140x), stative 3% (10x), present perfect

If the corpus is divided into literary levels, the evidence shows the following, visually represented in Figure 11 below.[134] *Léluka*'s primary peak of prototypicality at the conversational level (the majority of Pauline letters and Matthew) is at the non-stative present sense (52%) with a secondary peak at the present perfect (37%) senses. At the Semitic/vulgar (Johannine literature, Mark and 2 Peter) and literary (Hebrews, Luke-Acts, Pastorals, James, 1 Peter, and Jude) levels the primary peak is at the present perfect sense (60% and 56%, respectively) with a secondary peak at the non-stative present sense (33% and 25%, respectively). Moreover, the perfective past sense stage is more prominent at the Literary Koine level (8%) than at the Semitic/Vulgar and Conversational levels (5% in both). The waves of the three levels are presented below:

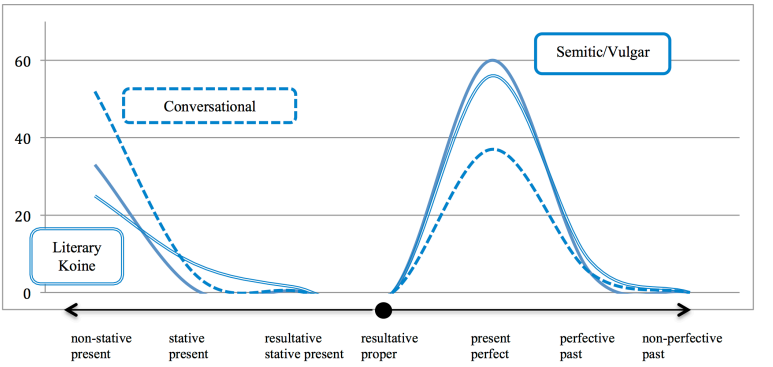

Figure 11: The waves of *léluka* at the three literary levels[135]

57% (226x), perfective past 3% (12x), resultative stative 0.5% (2x). Narrative: present 6% (1x), stative 7% (1x), resultative stative 7% (1x), present perfect 20% (3x), perfective past 60% (9x). Embedded narrative: present perfect 63% (2.5x), perfective past 37% (1.5x).

134. We adopt the basic division of literary levels identified in Wallace, *Greek Grammar*, 30.

135. The exact statistical data is as follows: Semitic/vulgar level (304x): perfective past 5% (16.5x), performative 0.5% (1x), present 33% (100x), perfect 60% (182x), resultative stative 0.5% (1x), stative 1% (3x). Conversational level (163x): perfective past 5% (8x), performative 0.5% (1x), present 52% (85x), present perfect 37% (60x), resultative stative 0.5% (1x),

When the contextual pressures of authorship, discourse type, and literary level are taken into account, there appears to be a correlation between, on the one hand, more advanced senses and, on the other, the convergence of (embedded) narrative, literary style, and the authors whose writings are characterized by both of those features. Regarding the advancement of the wave along the anterior cline, it was noted in section 3 that discourse is typically where advancement along the path begins. Yet, the wave of *léluka* seems to be advancing most at the convergence of (embedded) narrative and Literary Koine style, especially in the book of Hebrews. However, the propensity for rhetorical style in the more literary portions of the New Testament, as well as the suitability of *léluka* to highlight vividness or current relevance in narrative (especially in the exposition of OT texts), would be significant motivations for pragmatic extensions in these contexts (recall the discussion of past values in section 4.2).[136] These situational motivations may illustrate idiosyncratic features of the New Testament Greek milieu that contributed to the inherent cognitive basis for the form's development along the path. Furthermore, it must also be noted that *léluka* in narrative contexts is more confined to past interpretations because of the very nature of the genre. Thus, it is to be expected that use in narrative will exhibit the present perfect sense less than the perfective past, relative to discourse.

The quantitative information can also be related to productivity, i.e. to the number of verbs that appear with each sense. The data shows that the perfectal domain is compatible with the largest number of verbs, as it is found with 74 verbs out of 91 unique lexemes (68%). The simple present and stative

stative 5% (8x). Literary Koine level (135x): perfective past 8% (10.5x), performative 2% (3x), present 25% (34x), present perfect 56% (75.5x), resultative stative 1.5% (2x), stative 7.5% (10x).

136. On this point, we are grateful to Dr. Steven Baugh for directing us to the work of Dionysius of Halicarnassus, which prescribes the use of different tenses (among other things) for rhetorical effect, such as euphony. Particularly relevant for the present study is the author's statement that λελύσεται may be used instead of λυθήσεται for rhetorical effect (Dionysius of Halicarnassus, *On Literary Composition*, 111).

present senses only appear with 4 verbs each (4%), while the resultative stative present value is uniquely compatible with one verb (1%). Lastly, the perfective past takes 21 verbs, which constitutes 19%. In addition, the performative sense appears with 4 verbs (4%). If the senses of the anterior and simultaneous clines are correlated with this evidence, the shape of the wave is different from that posited previously in Figure 8. This is shown in Figure 12 below. Now, the domains of the present perfect and perfective past are the most prototypical, whereas the value of a simple present—the second most common in Figure 8—becomes much less prototypical. This reveals the productivity of the anterior path values, especially with respect to the perfectal domain, and the non-productivity of the simultaneous cline senses, non-stative present included.

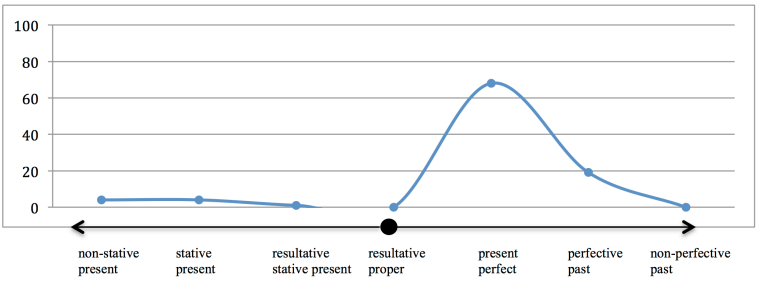

Figure 12: Wave of *léluka*—number of verbs (productivity)

Although there is no straightforward manner of combining the two types of quantitative information into a single representation, the information concerning the frequency of uses and the number of verbs available for each sense can be united by averaging the shapes of the waves traced by each one of them. This mean gives the sense-stages of the resultative path the following numerical values: present perfect 60.5%, non-stative present 20%, perfective past 12.5%, stative present 3.5%, resultative stative present 1% (additionally, the performative use equals 2.5%). This adjustment to take into account lexical productivity results in a greater prototypicality for the perfectal and perfective past stages than in Figure 8. Thus, this model may be hypothesized to more closely approximate the realistic

grammaticalization status of *léluka* and the senses more strongly associated with the form. This is presented in figure 13 below.

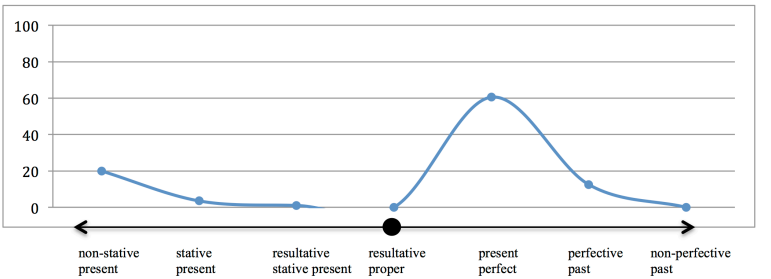

Figure 13: Wave of *léluka*—frequency and productivity combined (mean)

The combination of the two waves may also be achieved by a different method, i.e. not by mean but by multiplication of the data related to each wave. Namely, the numbers of occurrences of a sense can be multiplied by the number of lexemes compatible with this value. This type of combination of the data delivers the following results: present perfect 11,908 points (316x74), simple present 876 points (219x4), perfective past 770 points (37x21), stative present 84 points (21x4), resultative stative present 4 points (4x1). In addition, the performative sense has 20 points (5x4). This approach shows how unrealistic a simple quantification of frequency is. Now, the perfectal senses ascend to an impressive 87% of relative prototypicality, while the present sense only amounts to 6%, which is identical to the weight of the perfective past. The remaining senses are negligible in this representation, except the stative present value that amounts to 1%. Accordingly, the wave would adopt the following shape, seen in Figure 14 where the predominance of the perfect domain is clearly evident.

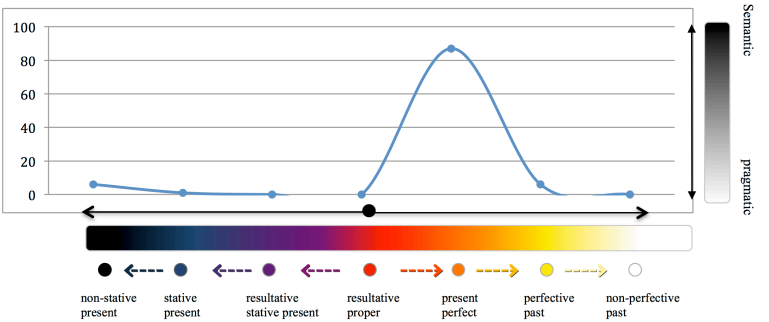

Figure 14: Wave of *léluka*—frequency and productivity combined (multiplication)[137]

On the whole, the data indicates that the senses available on the simultaneous cline appear less frequently than those located on the anterior cline, and are expressed by a closed group of verbs in contrast with the values of the anterior cline, which can be expressed by an arguably open class of verbs. Accordingly, the simultaneous-path senses seem to be non-productive, whereas the anterior-path senses appear as fully productive. However, note that this unproductivity, represented by a lower peak on the simultaneous cline, does not mean that the present senses are purely pragmatic and not fully conventionalized or semanticized. Rather, the fact that these senses are lexically non-productive indicates that these senses and the forms in which they are realized are becoming disassociated from the *léluka* form. The high degree of semanticization of this meaning is indicated by an impressive frequency of forms such as οἶδα with a present meaning. However, the high frequency of the verb οἶδα with a present sense does not inversely signify that this meaning is equally relevant for *léluka*, viewed as a holistic category.

This is analogous to the forms "can" and "ran" in English, which originally developed from a resultative (proper) construction, the former on the simultaneous cline and the latter on the anterior cline. However, now one is prototypically present

137. For the conceptual spectrum of senses along the x-axis, recall the discussion in section 3.2 above. Visit BAGL.org for a color version.

(can) and the other prototypically past (ran), and English speakers do not associate the forms or senses with each other.[138]

The diachronic and synchronic relationship between the senses of *léluka* on the simultaneous and anterior clines will be discussed further below. This will be compared to the analogous development in Proto-Indo-European (PIE) resulting in the forms "can" and "ran," which developed from the same resultative form, but in separate directions along the path.

5.2 *Relationship between the Simultaneous and Anterior Clines*

It is probable that, as suggested by the situation in Homeric Greek and the oldest PIE languages, the split between the two clines, and therefore between the lexical verbs in the *léluka* form that developed along separate clines, was originally motivated by the meaning of the lexical verbs. As has been mentioned in section 3, from a cross-linguistic perspective, static verbs indicating qualities, verbs of cognition, perception and feelings, as well as verbs of receiving, are the most likely to travel along the simultaneous cline and acquire one of the senses available on this evolutionary trajectory: resultative stative present, stative present, and non-stative present. Other verbs, especially telic, accomplishment, and activity predicates, tend to develop along the anterior cline and gradually assimilate perfectal and past values. However, as the post-resultative gram gets older, the motivation for one or the other group of senses is gradually less conditioned by the semantics of the underlying predicate, but rather becomes a learned paradigm.

This is exactly what seems to be the case in Koine Greek. The meanings of the verb in *léluka*—either those located along the simultaneous cline or those situated on the anterior cline—are

138. Porter (*Verbal Aspect*, 283) says that Greeks did consider οἶδα a genuine perfect, quoting McKay ("New Testament Greek," 289–90) in support. However, we seemed to be unable to find the quotation or any discussion of οἶδα in the pages referenced. Of course, we are not arguing that the Greeks did not recognize the common diachronic origin of οἶδα and other *léluka* forms. But, the recognition that the forms of "can" and "ran" share a common diachronic origin does not mitigate the reality that speakers do not consider them part of the same paradigm whose meanings are semantically identical.

not semantically motivated by the lexical senses of the verb. The progress along one of the two clines—certainly diachronically based—seems rather to be a question of conventionalization: some (very few) verbs are compatible with senses on the simultaneous cline, whereas the others (the majority) are compatible with senses on the anterior cline. Arguably, given the greater association of the gram with the anterior cline, and the more advanced a simultaneous-path sense is, the more distant and unrecoverable the relation will be between a given simultaneous-cline value and the meaning of the underlying root. This is the most evident in the case of οἶδα 'I know' which has no synchronic relation with the underlying root 'to see' found in the Aorist form εἶδον 'I saw'. This is seen in the fact that the present perfect sense "I have seen" is not even possible with οἶδα, but is communicated by other verbs, such as the *léluka* form of ὁράω (e.g. 1 John 1:1). Similarly, πέποιθα 'I believe, trust', although historically related to πείθω 'I convince' (cf. a possible resultative proper value 'I am convinced' which motived the extension into 'I believe'), is synchronically—at least from a semantic perspective—disconnected from the underlying root.

All of this means that speakers could not freely use two sets of senses—i.e. simultaneous and anterior cline values—and ascribe them to verbs depending on their lexical meaning (e.g. *Aktionsart*).[139] Rather, it is only actional anterior-path senses that are productively used with a wide variety of lexical verbs, while those of the simultaneous path (in particular, the stative and simple present) are limited to a small, closed set of verbs that had to be learned. Thus, the cognitive and conceptual relation between the two paths is lost. Consequently, the two clines split the *léluka* form into two relatively isolated spheres of which, as mentioned above, one is productive (anterior-path values, especially perfect and, to a lesser degree, past) and the other is unproductive (simultaneous-path values). This phenomenon is

139. This does not mean that the two clines are not dependent on lexical aspect/*Aktionsart*. The original split and propensity towards anterior-path or simultaneous-path senses have (at least, to a certain degree) been stimulated by the lexical meaning of the root/lexical verb.

not typologically odd, but corresponds to one of the most typical evolutionary patterns related to post-resultative proper grams, i.e. to constructions that began as resultative proper form and that have developed along the resultative path.

A representative case of this pattern, diachronically related to the Greek *léluka*, is the situation found in Germanic languages. The verbal system of Germanic languages includes the category referred to as the Preterite, which exhibits two morphological variants: weak (formed by means of the dental ending, such as *-ed* in English, e.g. *I walked*) and strong (derived by the means of ablaut or vowel fluctuation, e.g. *I ran*). Although certain features of the strong Preterite correspond to other PIE categories and morphemes (especially, to the PIE Aorist) or are cases of analogical Proto-Germanic changes, it is assumed that, at least in some classes, the gram has developed from the PIE perfect.[140] In particular, the first three classes of the strong Preterite reflect the ablaut series (*e-o-zero*) found in Greek and reconstructed for Proto-Indo-European. This may be seen if one compares the Greek Present and *léluka* (1st singular and plural) forms πείθω – πέποιθα – πέπιθμεν with the infinitive and Preterite (1st singular and plural) in Icelandic *grípa* 'to catch' (*í* from Proto-Germanic (PG) **ī* which derives from PIE **e̯i* as πείθω) – *greip* 'I caught' (*ei* from PG **ai* which derives from PIE **o̯i* as in πέποιθα) – *gripum* (*i* reflects the PG and PIE **i* as in πέπιθμεν) 'we caught'. In general terms, the strong Germanic Preterite is an old post-resultative construction, related to the Greek *léluka*, which in modern languages functions as a broad past tense, the perfectal uses of which were replaced by a novel periphrastic perfect.[141]

Although the successors of the PIE Perfect in the Germanic family nowadays function as general pasts, the same morphology

140. Hewson and Bubenik, *Tense and Aspect*, 218.

141. E.g. *I have done* in English; cf. Bammersberger, *Aufbau des germanischen Verbalsystems*; Hewson and Bubenik, *Tense and Aspect*; Tichy, *Indogermanistisches Grundwissen*; Ringe, *Proto-Indo-European*. For an appealing proposal of how this happened in Greek, see Moser, "Tense, Aspect and the Greek Perfect," 249–50.

is paradoxically used with a small class of verbs with the present meaning, constituting a subtype of the Present tense paradigm. In other words, these verbs have a Preterite morphology, but function as paradigmatic presents, e.g. *kann* 'he can, he knows how to'[142] and *veit/wait* 'he knows' in Icelandic and Gothic, the most conservative Germanic languages.[143] These predicates, commonly referred to as preterite-present verbs constitute an example of the simultaneous cline and correspond to the Latin and Greek perfects *memini* 'I remember' or οἶδα 'I know', respectively. In fact, the Ancient Greek *léluka* forms (ϝ)οἶδα – (ϝ)ἴδμεν are cognate to Icelandic with *veit* 'he knows' (*ei* < **oi*) – *vissu* 'they know' (which exhibit the same vowel fluctuation and endings as the Preterite forms *greip* 'he took' and *gripu* 'they took' of the verb *grípa*, mentioned above). Accordingly, while most Germanic verbs—and the entire ablauting category as such—travelled along the anterior cline and evolved into a paradigmatic past tense (e.g. the English form *ran* and Icelandic *greip* 'he caught'), some predicates followed the simultaneous cline and became forms of the Present tense (e.g. the English form *can* and Icelandic *veit* 'he knows').

Again, this split was originally motivated by the lexical meaning of the verbal root in the way that preterite-present verbs were derived from predicates that cross-linguistically tend to acquire stative interpretations in resultative constructions and thus are likely to evolve along the simultaneous cline.[144]

142. Note that this form is both the 3rd and 1st singular form.

143. Apart from these two predicates, this class includes 15 other verbs. Most of them are preserved in Gothic, the oldest Germanic language: *aih* 'have, own', *lais* 'understand, know', *daug* 'be suitable', *kann* 'know, can', *þarf* 'need', *ga-dars* 'dare', *skal* 'shall', *man* 'mean, want', *ganah* 'be enough', *binah* 'must, be necessary', *mag* 'can, be allowed', *gaman* 'remember', *ga-môt* 'have place, find room', *ôg* 'be afraid, to fear'. A few others, missing in Gothic, exist in Old High German *an* 'be delighted, begrudge' and Old Norse *mun* and *man* 'shall, become'. However, many of these verbs have survived in modern times and are still in use in Germanic languages such as Icelandic, German and English (cf. *shall* and *can* which lack the ending *s* in the 3rd person singular in English).

144. On the semantic motivation, see Meid, *Das Germanische Praeteritum*, 33 and Birkmann, *Präteritopräsentia*, 87.

However, nowadays the relation between the form (analogical to the Preterite of most verbs) and the meaning of the preterite-present verbs (Present tense) is not recoverable. They certainly do not share a semantically invariant core. Furthermore, the class of preterite-present predicates is closed and entirely unproductive. This is evident from the fact that the original root meanings are not accessible to the speakers anymore (the meaning of the preterite morphology has been generalized as the lexical semantics of the verb and forms such as *can* and *shall* in English are no longer derived from the original root meanings) as well as the fact that no new verb—of any possible lexical value—can now be employed in the Preterite morphology to achieve a sense available along the simultaneous cline. In other words, the meaning of preterite-present forms is no longer a matter of contextual modulation or pragmatic usage of a semantically invariant core shared with Preterite forms which have a common diachronic origin. The polysemy of the form can only be understood as the semanticization of senses in different directions on the path of change.

In fact, the regular Preterite verbs and the preterite-present predicates no longer constitute a unified class, despite the fact of having the same morphology and a common diachronic origin. Native speakers use preterite-present forms as paradigmatic presents without being aware of their Preterite morphology at all. It seems safe to say that no English speaker—except for linguists—sees any connection between the form *ran* (Preterite) and *can* (Present) which are morphologically equivalent, having derived from a common ancestor, a resultative construction. Analogically, no Icelandic native speaker thinks of the preterite-present form *ég veit* 'I know' (which is formally and semantically parallel to Greek οἶδα) as related in any way to the Preterite forms such as *ég greip* 'I caught', even though the two constructions exhibit exactly the same morphology. To the Icelandic mind, they are disconnected, the former belonging to the present tense, while the latter to the past tense, i.e. the preterite. This stems from the above-mentioned fact that preterite-present verbs have been incorporated into the present tense as an irregular class comprised of a limited set of verbs.

This means that even though the verbs such as *can* and *shall* (in English) or *veit* 'I know' and *kann* 'I know how to' (in Icelandic) are morphologically and historically cognate to the Preterite, they are not identified with the Preterite as a systemic category. That is, their respective meanings are so distant (conceptually and diachronically) that speakers do not see any relation between the Preterite and preterite-presents. Moreover, even though the occurrence of preterite-present predicates is relatively high (these are very common verbs), the class is limited to very few verbs. This also weakens any possible contribution of these predicates to the Preterite-type morphology. Thus, the class is regarded as isolated from the "regular" use of the Preterite morphological pattern.

To conclude, the Koine Greek *léluka* could be defined as a typical representative of the post-resultative-proper gram or resultative-path gram of a semi-advanced evolutionary age. Qualitatively, the gram is relatively advanced and spans most of the sections of the resultative path's two clines, with the exception of the initial stage (resultative proper) and the most advanced one on the anterior cline (non-perfective past). Quantitatively, the formation locates its prototypicality in the middle area of the anterior cline, i.e. in the section of perfectal values. The possible secondary peak related to the present sense seems to be non-productive for the category, being limited to a few verbs. In this way, the gram seems to exhibit typical behavior of relatively advanced resultative-path formations, splitting along the two clines of development: the common and productive anterior cline and the less frequent and unproductive simultaneous cline. This behavior, while less evolutionarily advanced, approximates the paradox of the English forms *ran* and *can*. Therefore, as is the case of the preterite and preterite-present verbs in English and Germanic languages, the synchronic conceptual relation between the two sub-types of the post-resultative morphology might have been lost and probably inaccessible to native speakers. This also demonstrates quite clearly that there is no invariant semantic core common to all uses of the *léluka* which is simply modulated in context to

produce various pragmatic uses, any more than this could be argued for the forms *can* and *ran*.

5.3 *Diachronic Corroboration of the Wave Analysis*

The dynamic classification of *léluka* proposed in the previous section has mainly been derived from the synchronic behavior of the gram—in particular, the properties of its semantic potential—and the compatibility with certain evolutionary templates which are typologically universal. As explained in section 3, in order to corroborate such a definition based on synchronic-typological data, the mapping is required to be historically true. This means that the wave model should be confirmed by the prior and subsequent stages of the formation (i.e. the gram should display less and more advanced stages of the same evolutionary process, respectively). As will be evident from the following discussion, the PIE foundation, and the earlier and posterior evolutionary stages of *léluka,* all confirm its categorization as a resultative-path gram.

As commonly accepted, the PIE ancestor of *léluka*—the reduplicative Perfect—was a stative formation. However, the reconstructed properties of this PIE gram suggest that it offered an exemplary resultative proper character: it appeared exclusively in intransitive and, if possible, de-transitive constructions, and could convey the value of a state resulting from a previous action, apart from denoting a simple state. This means that the gram might have functioned as a non-actional stative (conveying the idea of a simple state) and resultative proper (expressing present states resultant from a prior action). Accordingly, the reconstructed behavior of the PIE form matches the center of the map of *léluka* hypothesized in the previous section and thus confirms the mapping—the oldest stage of *léluka* is fully compatible with the diachronic and conceptual input of the path along which the gram has evolved.[145]

145. Meid, *Das Germanische Praeteritum*, 19; Perel'muter, *Obshcheindoevropeiskii*, 287; Maslov, "Resultative Perfect and Aspect," 70–71; Birkmann, *Präteritopräsentia*, 67; Szemerényi, *Indo-European Linguistics*; Hewson and Bubenik, *Tense and Aspect*; Tichy, *Indogermanistisches*

Moreover, although the exact origin—i.e. the input periphrasis from which the PIE gram might have emerged—is still debated, it seems that one possible scenario (in fact the one we regard as by far the most plausible) further verifies our mapping in terms of the resultative path. As proposed by Bybee et al., the PIE reduplicative Perfect was derived from a passive participle (a typical de-transitive resultative or patientive participle), which was employed in a predicative position and inflected. This is one of the most common sources of resultative proper grams that subsequently travel along the resultative path (examples are abundant in various language families, e.g. in Indo-European, Afro-Asiatic, and Niger-Congo languages).[146] This participial and periphrastic origin of the periphrasis that in PIE functioned as a resultative proper and stative construction would be entirely compatible with our mapping of *léluka*.[147]

Grundwissen; Drinka, "Periphrastic Perfects and Passives," 106–7.

146. Bybee et al., *Evolution of Grammar*, 172. What makes the PIE participle distinctive is its reduplicative shape, the origin of which cannot be reconstructed. However, reduplicative passive or resultative participles are not unique to PIE, but can also be found in other languages and language families, such as Trukese (Austronesian), Hausa (Afro-Asiatic), or Surinamese English Creole (cf. Bybee et al., *Evolution of Grammar*, 172; Newman, *Hausa Language*; Bakker and Parkvall, "Pidgins and Creoles," 517).

147. An alternative view has been proposed by Drinka ("Evolution," 125–28), who understands the PIE Perfect as the successor of an earlier, present, reduplicative morphology. The PIE Perfect would, thus, be a gram of the imperfective path (progressive/iterative > continuous/habitual > imperfective/present > intransitive) that, at the stage of intransitivity, "jumped" onto the resultative path, having acquired the resultative proper sense. Even though certain points of criticism of the proposal by Bybee, Perkins, and Pagluica (Bybee et al., *Evolution of Grammar*) are valuable, the scenario advocated by Drinka, on the whole, seems to be problematic, both from a typological and grammaticalization perspective. As far as the former is concerned, to our knowledge, and as also noted by Drinka, no certain cases of this type of evolution have been reported so far. On the contrary, old presents regularly develop into modal and future constructions. With respect to the later, due to the morpho-phonological reduction that invariably accompanies semantic progression of constructions on their paths (Hopper and Traugott, *Grammaticalization*), highly advanced imperfective-path grams usually do not offer cases of reduplication, which is, on the contrary, typical of progressives,

Additionally, the comparative evidence overwhelmingly suggests that, in the case of Koine Greek *léluka*, one is dealing with a resultative-path gram. It is a broadly recognized fact that the offspring of the PIE stative and/or resultative proper gram (i.e. the Perfect) has developed along the resultative path in daughter languages. On the one hand, given the source determination principle (grams of a certain semantic potential and diachronic trajectory are most likely to have developed from a determined input—the one that is predicted by the path they travel) and the fact that cognate grams necessarily share their origin, and on the other hand, given that Indo-European formations descending from the PIE Perfect (be they in Romance, Germanic, Slavic, or Indo-Aryan families) have all travelled along the resultative path (acquiring perfect, perfective, and past senses)[148] and have been defined as resultative-path constructions or manifestation of "a resultative round,"[149] *léluka* too is expected to be a resultative-path gram.

However, for some roots, the stative nuances were more natural and the gram developed along the simultaneous cline. Such verbs, which comply with the roots that are cross-linguistically likely to follow the simultaneous cline, develop into presents. In these cases, the particular successors of the PIE Perfect either took morphological features of "regular" present

continuatives, frequentatives, and especially iteratives, i.e. less advanced formations of the imperfective cline (Bybee et al., *Evolution of Grammar*, 162, 165). Specifically, in the case of imperfective formations, only two grams out of 20 exhibit reduplication in the database developed by Bybee et al., while in the case of presents, no gram out of 38 does so (Bybee et al., *Evolution of Grammar,* 142–42). Therefore, from the perspective of formal grammaticalization, which is directly correlated with morphological and phonological reduction, it would be abnormal if the form would have retained its reduplicative structure throughout one path (imperfective path) and on into a very advance section of another (the resultative path). Yet, this is precisely what Drinka's proposal implies. It seems more likely that after such a long history of grammaticalization, the form would have become significantly reduced morpho-phonetically. Even if Drinka's proposal is correct, our mapping would be valid as it would still be a resultative-path gram.

148. Hewson and Bubenik, *Tense and Aspect*.

149. Maslov, "Resultative Perfect and Aspect."

formations[150] or formed a particular group in the present paradigm—verbs with a present meaning but with a distinctive, past-like, morphology.[151] This latter phenomenon may also clearly be observed in some classical languages, where certain verbs retained the perfect morphology in its complete shape but functioned as equivalents of the present (as shown by the forms *memini* 'I remember' or *odi* 'I hate' in Latin). This very characteristic behavior of the PIE Perfect in the PIE family is fully harmonious with the dynamic understanding of *léluka* proposed in this article.

The history of the *léluka* gram in the Greek language itself is also compatible with the posited mapping in terms of the resultative-path gram and shows how the formation has gradually been progressing on the resultative path. In accordance with the PIE origin, in Archaic Greek (700–500 BCE), the resultative proper and stative present values predominated, while a perfect use was extremely scarce.[152] In Classical Greek (500–300 BCE), the perfectal senses predominated, the stative and present values were restricted to certain verbs, and the past function was very rare.[153] In Post-Classical and Roman-Imperial Greek (300 BCE–450 CE), the perfect use was the most common, but the perfective past sense increased significantly. The present sense was compatible only with a few verbs.[154] In Transitional-Byzantine Greek (300–1450), the perfect and perfective past senses became generalized to the point that the

150. For instance, various *ē* bases such as *sedēo* 'I sit' or *habēo* 'I have' in Latin; Maslov, "Resultative Perfect and Aspect," 71.

151. See, for example, the previously mentioned preterite-present verbs in Germanic; Meid, *Germanische Praeteritum*; Birkmann, *Präteritopräsentia*; Ringe, *Proto-Indo-European*.

152. Perel'muter, "Stative, Resultative, Passive," 277, 279–82; Gerö and Stechow, "Tense in Time," 12–15, 17; Crellin, "Perfect Active System," 297.

153. Perel'muter, "Stative, Resultative, Passive," 287; Hewson and Bubenik, *Tense and Aspect*, 28; Gerö and Stechow, "Tense in Time", 18–28; Dickson, *Handbook to Modern Greek*, 328; Aerts, *Periphrastica*; Drinka, "Periphrastic Perfects and Passive," 109.

154. Gerö and Stechow, "Tense in Time," 29–31; Crellin, "Perfect Active System," 297; Browning, *Medieval and Modern Greek*, 37.

gram was confused with Aorist, the most prototypical expression of the perfective past value.[155] In Modern Greek, the gram disappeared (Standard Greek) or merged completely with Aorist (certain dialects). In the latter case, as a morphologically mixed formation (i.e. based on the aoristic and *léluka* morphology), it mainly functions as a perfective past.[156]

The history of the *léluka* form shows that the gram has undergone a complete cycle of the evolution characteristic of resultative proper grams: developing along the anterior and simultaneous clines, it evolved from a resultative proper to a past and, for fewer verbs, present, being at the end replaced by new waves of resultative grams, themselves developing into perfects and pasts. The *léluka* construction, as a prototypical resultative-path formation, has gradually traversed the anterior cline (it specialized as an anterior-path gram and reached its further stages) with limited accessibility to the simultaneous cline and the diachronic center, i.e. a resultative proper use. This type of evolution constitutes the most typical characteristic of resultative-path grams in the world's languages.

The history of *léluka* thus corroborates our mapping and definition of this gram in Koine Greek as a semi-advanced gram of the resultative path, a mature (neither young nor old) perfect with its peak of prototypicality in the area of a present perfect. As an exemplary mature perfect, it offers not only senses of the anterior cline (which predominate especially in the zone of a present perfect) but also those of the simultaneous cline (at this time already non-productive). As expected, at earlier historical

155. Gerö and Stechow, "Tense in Time," 31; Browning, *Medieval and Modern Greek*, 69; Ruge, "Fall und Auferstehung"; Horrocks, *Greek*, 176–78; Aerts, *Periphrastica*; Drinka, "Periphrastic Perfects and Passives," 110–11. Interestingly, the periphrastic construction that replaced *léluka* is now also in competition with the Aorist in Modern Greek. See Moser ("Tense, Aspect and the Greek Perfect," 242), where she says that "the perfect is in the process of losing its last distinguishing feature in respect to the aorist."

156. Hewson and Bubenik, *Tense and Aspect*, 249–64; Gerö and Stechow, "Tense in Time," 33; Aerts, *Periphrastica*; Drinka, "Periphrastic Perfects and Passive," 110–11; Gignac, *Grammar of the Greek Papyri*, 409; Horrocks, *Greek*, 176–78.

stages the gram is less advanced on the path while at the later stages its profile is more advanced. On the one hand, the Koine Greek *léluka* is more advanced than its historical predecessor in Classical Greek, which is a type of a young anterior (almost exclusively used as a present perfect and for a fewer verbs as a stative and present), and especially than the Archaic Greek variety, which is mainly a resultative proper gram. On the other hand, it is less advanced than its Byzantine (an old anterior with not only perfect but also past uses well-established) and Modern dialectal equivalents (which is principally employed as a past tense, if we understand the dialectal Modern Greek "Past" as an equal merger of *léluka* and the Aorist). Accordingly, the gram exhibits an archetypal behavior of constructions that travel along and are mapped by means of the resultative path, which strengthens our map derived from its synchronic senses.

6. *The Wave Model and Other Approaches*

Having analyzed the *léluka* form and having proposed its definition in terms of a dynamic wave traveling a well-worn path of change, the question arises: how does this model compare with other approaches and how does it contribute to the general discussion on the verbal system of Koine Greek? As presented above, there is a trend in certain contemporary approaches to the Greek verbal system to define the meaning (that is the semantics) of a form as its invariant value.[157] On the other hand, largely in step with the foundational work laid by Curtius, Chantraine, Wackernagel and others, Fanning and those generally in line

157. Recalling section 2 above, this is especially seen in Porter, "Defence of Verbal Aspect," 43–44 n.1; Porter, *Idioms*, 20–22; Porter, *Verbal Aspect*, xi, 15–16, 82–83, 103–4, 257, 260–70; Campbell, *Basics of Verbal Aspect*, 22–24; Campbell, "Breaking Perfect Rules," 147; Campbell, *Indicative Mood*, 24–27; Campbell, *Non-Indicative Verbs*, 4, 6, 47, 65, 83, and those applying their models (e.g. Decker, *Temporal Deixis*, 13; Foley, *Biblical Translation*, 135–37; Mathewson, *Verbal Aspect*, 26–28). Of course, these authors acknowledge variation in pragmatic meaning or full contextual meaning. Nevertheless, they maintain that a form's semantic meaning is a highly abstract, invariant core from which all "contextual" or pragmatic uses are derived.

with his approach describe the meaning of a form as a polysemous semantic potential that is subject to change and is porous to its contextual usage.[158]

The following will compare the approaches of Porter, Campbell, and Fanning with the present model. This by no means offers a comprehensive assessment of other approaches, but simply highlights some of the major points of contact, where (from the perspective of the present model) other approaches may be improved, and ways in which the present model offers a path through the entrenched debate between current positions. We propose that this model offers the linguistically justified semantic coherence which those such as Porter and Campbell seek, and at the same time accommodates the polysemous nature

158. E.g. Wallace, *Greek Grammar*, 501 n. 17, 507–13, 573–82; Baugh, "Greek Tense Form Choice," 4 n. 14; Tresham, "Aspect in Paul's Epistle," 139–76 It should be noted that Fanning (*Verbal Aspect*, 80) does express a desire to find an invariant meaning of linguistic aspect. Silva ("Response to Fanning and Porter," 79) critiques both Porter and Fanning on this point. However, Fanning also acknowledges that in the indicative mood, the tense-forms also communicate time as part of their semantic meaning and that there may be instances where these portions of a form's meaning may be more or less prominent, resulting in what we call a polysemous semantic potential (e.g. Fanning, *Verbal Aspect*, 323–24). Mathewson (*Verbal Aspect*, 27), citing Fanning (*Verbal Aspect*, 164, 50), also observes this, writing:

> Despite his insistence that the semantics of the tense forms and the pragmatics of the contexts in which they occur be kept separate, it is not clear that he consistently carries through with this. For Fanning talks in terms of other elements in the context having "an *important influence* on aspectual force," or that "Aspect *operates so closely* with such features [procedural characteristics] and is *so significantly affected* by them." Fanning is apparently not just saying that these pragmatic meanings belong only to the context, but that the tense endings actually take these meanings "on board" to create new meanings.

According to the model we've argued for above, Fanning's intuitions about the semantics/pragmatics interface, in which contextual features influence a form's semantics, turn out to be basically correct, even if he at times inconsistently capitulates in some degree to the assumption of an invariant semantic core.

of verbal forms that has been recognized in past and present Greek scholarship, while also bolstering their respective weaknesses. Thus, we hope that the present model, rather than dismissing past scholarship, can actually provide an overarching framework within which previous work can be incorporated. That is, previous work describing the contextual details (e.g. lexis, *Aktionsart*, discourse structure and register, etc.) can be understood as the more micro-pressures that combine to accelerate (or mitigate) a verbal form along well-worn paths of language change which characterizes them crosslinguistically. In fact, observations of an individual language's idiosyncrasies and more micro-level analyses can contribute to a more precise understanding of a verbal form's semantic-pragmatic wave at a given time, within a given discourse context, from a given author.

6.1 *Semantic Invariance Approaches*

Here, he will very briefly note some unique problems of what we have called the invariant meaning proposals of Porter and Campbell and their exegetical application. Then we will describe what seems to be their common problem, rooted in the linguistic milieu of which they are heirs. First, it is crucial to note that Porter, Campbell, and other proponents of what we refer to as "semantic invariance" affirm that there is variation in a verbal form's meaning. However, they argue that any variation in meaning is attributable to *pragmatic* meaning in context. The invariant meaning posited is a form's *semantic* meaning, which is regarded as the core meaning from which every contextual usage is derived in predictable ways from interaction with contextual features. While this may seem at first glance to account for both a form as a coherent linguistic phenomenon and its diverse uses in context, this explanation turns out to conflict with the universal mechanisms of gradual language change resulting in polysemy. Furthermore, especially in the case of originally resultative-proper grams, such as *léluka*, their set of polysemous senses simply cannot all be synchronically derived from an invariant semantic core.

6.1.1 *Some model-specific difficulties.* Beginning with Porter, and those following his model, the core, invariant semantic meaning of the perfect form is said to be a stative aspect and frontground prominence, as well as spatial proximity (in distinction from the non-proximate pluperfect).[159] That is, the perfect form presents the verbal idea as a state and gives it the highest discourse prominence of all verbal aspects. Time is not communicated by the semantics of the form, since not every occurrence has the same temporal reference.[160] Space does not permit discussing in detail the issues involved in this approach. We simply note that Porter's model has come under fire in terms of the foundations of his theoretical model,[161] as well as (and indeed, therefore) the accuracy and helpfulness of its exegetical application in terms of its supposed stative aspect and frontground prominence.[162]

159. As Silva ("Response to Fanning and Porter," 78–79) observes, "[i]n Porter's case, the problem comes to expression by his unwillingness to admit exceptions: proposal after proposal is rejected on the grounds that it does not explain every instance."

160. See, for example, Porter, "Defence of Verbal Aspect," 35, 43–44 n. 1; Porter, *Idioms*, 39–42; Porter, "Prominence," 58–59; Porter, *Verbal Aspect*, 91, 289. For his proposal of the full systemic network of the Greek verbal system, see Porter, *Verbal Aspect*, 109.

161. In terms of the theoretical foundation, Runge has argued that it is unclear whether Porter's sources actually corroborate his view (e.g. Runge, "Contrastive Substitution," and Runge, "Markedness and Grounding"). Particularly relevant for this analysis, Runge questions the legitimacy of claiming that a particular meaning (e.g. temporal reference) must be present in every instance in order to regard it as part of the form's semantics. Runge ("Contrastive Substitution," 165) quotes three linguists (Wallace, "Figure and Ground"; Lyons, *Theoretical Linguistics*; and Bache, *Verbal Aspect*), often cited by Porter as foundational for his model, who (Runge argues) affirm the inseparable nature of tense, aspect, and modality in verbal semantics. Runge ("Contrastive Substitution," 165) summarizes what he claims are the implications of this for Porter's model: "…few features of language fit neatly into absolute categories. Nevertheless, this is precisely how Porter treats tense—as though it must always have the same temporal reference—in order to consider it present in a language."

162. For example, regarding the putative "frontground" prominence of *léluka*, Barnard argues that the most prominent points of Luke do not line up

Focusing on the issue of aspect, Mathewson's description of Porter's model applied to the book of Revelation states, "one should start with the assumption that semantically the perfect tense will manifest its full stative meaning within the various contexts in which it occurs in Revelation, and then examine its usage in each context to determine its possible pragmatic function."[163] Therefore, when approaching cases generally agreed on to exhibit perfective past (i.e. aoristic) senses, a purely stative meaning of the form is sought, even if it seems unnaturally abstract and requires the exegete to search for (and perhaps inadvertently invent?) possible explanations. For example, when discussing εἴρηκα in Rev 7:14 and εἴρηκαν in Rev 19:3, he maintains that these must have a stative meaning.[164] However, it is difficult to understand (in English or any other language) what it would mean to construe John as being "in a state of saying" in these contexts. Here, Mathewson acknowledges this problem but simply attributes it to the difficulty of translating it into English. Yet, over-appeal to this fact seems to be a catchall explanation that may sometimes obscure problems with the framework being employed.[165]

Mathewson objects to seeing these as an aoristic use of the perfect by pointing out that the aorist form is used elsewhere in Revelation and therefore concludes that a semantic distinction

with Porter's background, foreground, and frontground scheme (Barnard, "Prominence Indicator." Cf. Runge, "Reconsidering the Semantics," 13–14). One case of this is Luke 13:1–5. Barnard argues from the surrounding thematic context of Luke and the immediate features of the text that the focus of Jesus' pronouncement in this text is contained in verses 3 and 5 where, introduced by the attention-drawing meta-comment λέγω ὑμῖν, Jesus calls his audience to repentance. The need for repentance is argued to be the larger theme of the surrounding context, both preceding and following. The one *léluka* form (πεπόνθασιν), however, is said to present background information (Barnard, "Prominence Indicator," 22). Cf. Runge's ("Markedness and Grounding," 21) discussion of Porter's analysis of Acts 22:15 (citing Porter, *Verbal Aspect*, 250–51).

163. Mathewson, *Verbal Aspect*, 97.

164. Mathewson, *Verbal Aspect*, 100–101.

165. Compare his discussion of εἴληφεν in Rev 5:7. Mathewson, *Verbal Aspect*, 128–29.

must be intended.[166] However, this does not take into account the fact that morphologically distinct forms may still have semantic overlap. Indeed, as noted above, this is precisely the case with the perfect and aorist, which are both cross-linguistically consistent with grams developing on the resultative path and even began to compete with each other in the verbal system. Furthermore, Mathewson seems to dismiss evidence of the semantic extension of the perfect into the perfective-past sense by simply citing the putative invariant meaning of the tense-form and the supposed radical semantic-pragmatic divide.[167]

Campbell claims (very uniquely) that *léluka* is used to present an action as having an imperfective aspect and "heightened proximity."[168] While he comes to different conclusions than Porter, the underlying continuity is that both hold to the basic assumption that a form has one highly abstract and invariant semantic meaning with all other senses being attributable to pragmatics in context. Entailed in this is also the radical semantic-pragmatic divide (even if they draw the dividing line in different places).[169] These theoretical foundations lead Campbell,

166. Mathewson, *Verbal Aspect*, 100.

167. E.g. Mathewson, *Verbal Aspect*, 99 and 102, respectively.

168. Campbell, "Breaking Perfect Rules," 151; and Campbell, *Indicative Mood*, 210–11. As noted above, Campbell's analysis of the perfect encoding imperfective aspect builds on the work of Evans (*Greek Pentateuch*, 30–31), although Evans' work is on the LXX (compare Sánchez Ruipérez, *Verbo Griego Antiguo*, 60). Campbell's notion of "heightened proximity" refers to "intensification or prominence" or a "super close-up view of an action" that "sharpens a lexeme beyond its normal usage" (Campbell, *Basics of Verbal Aspect*, 110). This approximates what Porter refers to as "frontground" as a way of bringing greater prominence to a text vis-à-vis the other verbal forms.

169. What is very surprising on this point is that Campbell (*Indicative Mood*, 24 n. 73) actually acknowledges Hopper and Traugott's work demonstrating that pragmatic implicatures grammaticalize into a form's semantic potential over time, but only states that this is "…complex and will not be entered into here…" Unfortunately, entering into that fundamental characteristic of natural language would have shown that semantic invariance is the last thing one would expect to find in natural language. Furthermore, Campbell fully acknowledges that lexical words can have a polysemous semantic potential, but claims that verbal forms cannot. It is not clear why that should be, since all levels of language are subject to the influence of meaning

once again, to seek an invariant semantic meaning for each verbal form that unifies every contextual usage. This takes the form of linguistic equations, which suggest that a form's invariant semantic meaning combines with lexical and contextual features to produce various pragmatic meanings.[170] Campbell says that various combinations of these elements may produce a stative, historical perfect, or progressive pragmatic meaning of *léluka*. However, several problems arise when this approach is carefully considered. Space allows only a few observations.[171]

First, Campbell's approach still leaves unexplained exceptions. For instance, Campbell suggests that a stative pragmatic meaning may be arrived at in the text when one combines the invariant semantics of the perfect (imperfective aspect) with a stative verbal lexeme in a context that creates or allows the idea of stativity. One of the examples by which he attempts to illustrate this is πεπλήρωται in Mark 1:15.[172] However, it is not clear why Campbell says πληρόω is a stative verbal root. The meaning of the root (to fill, fulfill) clearly seems to be an accomplishment verb.[173] Indeed, it is not even the

extension. See, for example, the discussion of the grammaticalization of verbal forms (especially in terms of temporal reference and modality) in Evans and Green, *Cognitive Linguistics*, 707–33; and Riemer, *Introducing Semantics*, 378–82, as well as the numerous sources cited in section 3 above, especially Hopper and Traugott, *Grammaticalization*. Also Silva ("Response to Fanning and Porter", 79) makes similar comments on this as it relates to the present debate on the Greek verbal system.

170. Campbell, *Basics of Verbal Aspect*, 60–117. This approach seems to be particularly appealing to those interested in this topic because it presents itself as somewhat of a *via media* between Porter and Fanning.

171. For an overview of Campbell's proposal and argument, as well as some assessment of its theoretical and exegetical validity, see Crellin, "Basics of Verbal Aspect." Also see Porter, *Linguistic Analysis*, 202–4.

172. He also uses οἴδατε (3x) in John 7:28, and πεπίστευκα in John 11:27.

173. On the other hand, the root of οἴδατε, εἶδον (I see), seems to be more of an activity verb. The only verbal root he uses that seems to actually have a clearly stative meaning is πιστεύω. For definitions and distinctions between these *Aktionsart* values, as well as tests for determining which is reflected in a given verbal root, see Riemer's (*Introducing Semantics*, 314–29) discussion of

perfect tense-form itself in Mark 1:15 that renders the stative meaning, but rather the middle/passive ending. The active would render a transitive present perfect sense such as "he has fulfilled x" (e.g. John 16:6; Acts 5:28, 13:33; Rom 13:8). However, Campbell's commitment to a radical semantic-pragmatic divide compels him to posit such equations in an attempt to harmonize an invariant semantic meaning of *léluka* with the fact that many uses have a present/stative meaning. Similar comments can be made concerning his discussion of the past and progressive meanings, which also raise theoretical concern and still leave a significant amount of data that does not fit the model.[174]

Secondly, Campbell's equations (whether unintentionally or not) suggest that the abstract invariant meaning of a verbal form can readily combine with a variety of contextual factors to produce any number of contextual meanings. However, cross-linguistic investigation and the diachronic data from Greek itself presented above shows that this is not the case. The history of *léluka* shows that it gradually acquired the ability to occur with different contextual features at different synchronic points in its diachronic development.[175] This means that a verbal form must acquire the grammatical license to be used with certain contextual features that constrain an innovative aspectual or

aspect and *Aktionsart*. However, also see Croft, *Verbs*, 33–45, where he discusses inconsistencies with traditional tests used to determine lexical aspect, especially those relying on Vendler.

174. Of course, we are not insisting that an adequate model must account for 100% of the data. We mention this because the presence of unexplained exceptions seems to be one of Campbell's main critiques against more traditional approaches like that of Fanning (e.g. Campbell, "Breaking Perfect Rules").

175. For example, in Archaic Greek (700–500 BCE), the use of past-oriented adverbials was, as a rule, not possible with *léluka* (Gerö and Stechow, "Tense in Time," 18–28). It was not until Classical Greek (500–300 BCE) that it acquired the ability to somewhat regularly introduce actions that just happened and to appear with adverbs such as τότε "then" indicating past time. This then became even more regular in Post-Classical and Roman-Imperial Greek (300–450 CE). In Transitional-Byzantine Greek (300–1450 CE) this usage became common and *léluka* eventually lost ground to the aorist, leading to its disappearance in Modern Greek. See section 5.3 above for more details.

temporal meaning (and can only acquire innovative senses that are conceptually adjacent to senses it has already added to its semantic potential). And crucially, this happens through incremental steps of grammaticalization that begin as pragmatic uses and progressively gain greater semantic status through increased frequency and entrenchment.

6.1.2 *Common problems with semantic invariance proposals*. While these "semantic invariance" approaches have model-specific problems, a common problem seems to be the search for a form's invariant semantic meaning (even if that semantic meaning is said to be modulated in context). Here, we will briefly point out the incompatibility between semantic invariance and the reality of language change. Then we briefly discuss why appeal to the interaction between semantic meaning and contextual usage as the source of variations does not rescue invariant meaning hypotheses. Lastly, we note some historical background in the development of linguistics as a discipline that may offer a clue as to why these problems (and alternative solutions) have been overlooked by those adopting such approaches.

At the outset, it must be noted that one of the most fundamental problems common to approaches that view a form's semantic value as a highly abstract and invariant core is that this cannot be reconciled with the universally observed fact of gradual language change. If a form's semantic meaning is truly invariant, then how does it change? How did *léluka* begin as a resultative proper, gradually gain the sense of a present perfect (and in the case of a few roots a stative or present), and then begin competing with the aorist to communicate perfective past actions? The only way to reconcile language change with semantic invariance would be to imagine a circumstance where every language user of the entire language community agreed to simultaneously no longer use a form to express a certain older meaning and from then on only use it to express a new meaning. Of course no one suggests this is the case.

The solution often proposed to reconcile the invariant meaning hypothesis with a form's diverse uses is to attribute the

latter to contextual factors that contribute to the overall interpretation in discourse. However, as discussed in section 3.2 above, crosslinguistic observation of the grammaticalization of verbal forms and the mechanisms by which they develop new semantic values strongly argues that we cannot expect a form's so-called "pragmatic" uses to be derivable from a common, semantically invariant core that is simply modulated in context to produce all synchronically possible meanings. In the same way that the forms of "can" and "ran" in English are not simply contextual modulations of an identical semantic core resulting in "present" and "past" pragmatic senses, respectively, the stative present and non-stative present uses of *léluka* were not derived from a common semantic core shared with the present perfect and perfective past uses of *léluka*. Rather, any innovative sense is initially a pragmatic extension from an immediately preceding sense on the path of change. Furthermore, once it gains sufficient entrenchment, the extension itself gives rise to further extensions. This observation alone calls for a modification of the view that all synchronic uses can be derived from a semantically invariant core. To use a crude analogy, in a word morph game, the word "star" can be changed one letter at a time to create other words as follows: star ➔ soar ➔ boar ➔ boor ➔ book. While the "diachronic" beginning was the word "star," it no longer shares any characters with "book" and would be a misunderstanding of the mechanism of gradual change to seek one invariant core common to all the words in the string. Similarly, meaning extensions of a form give rise to yet other extensions which may become so conceptually distant from their diachronic origin (or senses developing along other clines) that some values in a form's semantic potential no longer have any semantic overlap, yet they all exist simultaneously.[176] This is precisely the situation

176. Compare the following observation made by Janda ("Cognitive Linguistics," 136): "The relationship of the center/prototype to the periphery cannot be described in terms of a core + rules model, because the entire category, complete with its structure, is something that exists rather than being continuously generated from the center."

we find with grams, like *léluka*, developing on the resultative path.

The semantic invariance view also fails to recognize that it is precisely contextual factors that contribute to the reanalysis of a verbal form in its evolving semantics. This observation is crucial in order to avoid two errors. First, we cannot conclude that, since there are often other contextual indicators that constrain a particular sense, the form itself does not semantically express that sense. As noted above in section 3, this is made clear by studies of semanticization which demonstrate that the more a gram is used in particular contexts, the more it becomes associated with those meanings and takes them on board in its own semantic makeup (e.g. through context-induced reinterpretation and the conventionalization of implicature). This is also made clear by the fact that one invariant meaning that satisfactorily encompasses all uses has proved elusive and forces exegetes to contrive speculative interpretations in order to harmonize each use with the supposedly invariant core.[177]

Furthermore, we cannot conclude from the presence and contribution of contextual factors that a form necessarily has license to communicate any variety of senses as long as it appears in the right context. This is made clear by the fact that at different times in a form's life, it may or may not be licensed to communicate a certain sense and simply cannot appear in certain contexts. Rather, a verbal form can only be pragmatically extended to senses conceptually adjacent to those on the path of change that it has already taken on within its semantic potential. For example, in Archaic Greek, *léluka*'s prototypically resultative proper meaning could occasionally be extended pragmatically to a present perfect meaning, but not perfective past. It was not until it gained a prototypically present perfect meaning in Classical and Post-classical Greek that it could then

177. Concerning the same sort of debate surrounding the Arabic verbal system, Marmorstein ("Verbal Syntax and Textual Structure," 65) notes, "[i]t seems, however, that what most cogently urges a reconsideration of the entire approach [of semantic invariance] is the unresolvable controversy over the basic meaning of [Arabic verbal forms] which by now 'fills a whole library'."

be pragmatically extended in perfective past contexts. Furthermore, by that time, only a few lexical verbs had developed the other direction toward a present (e.g. οἶδα, ἔοικα) or stative present (ἵστημι) meaning from the adjacent original resultative proper sense. At this point the lexical verbs that had progressed on the simultaneous cline (e.g. οἶδα) could no longer be pragmatically extended to a present perfect meaning ("I have seen"), and those that developed along the anterior cline (most lexical verbs) could no longer be pragmatically extended to a resultative stative present or stative present meaning, because those were no longer values adjacent to their prototypical meaning (see section 5.3 for details).[178]

Finally, it will be helpful to briefly note two general aspects of the linguistic milieu that seem to have contributed to the rise of the invariant meaning hypothesis as part of the explanation of why its problems (and alternative solutions) have been overlooked. First, the semantic invariance hypothesis reflects one of the tenets of structuralist and neostructuralist approaches to linguistics, which has dominated linguistic theory for the better part of the 20th century.[179] In this context, structuralism has also exhibited effects of being heir to the rationalistic tendency to treat language as a neat system of invariant meanings and impermeable category boundaries.[180] That is, while

178. This last point also answers Campbell's ("Breaking Perfect Rules") challenge, leveled at more traditional approaches, to both account for οἶδα in the analysis of *léluka*, and still uphold the prototypicality of its present perfect meaning (cf. Porter, *Verbal Aspect*, 253). As explained in section 5.2, that is precisely what the present analysis seems to accomplish.

179. This tradition is attributed to de Saussure's foundational work, *Course in General Linguistics*.

180. On this count, it is interesting to note Carson's ("Porter/Fanning Debate," 18) observation that "[i]n the modern period, however, it would be fair to say that the prevailing influence of rationalism resulted in the view, throughout most of the nineteenth century, that time and tense-forms are isomorphic," citing G.B. Winer's *Treatise* as an example. Interestingly, while the study of New Testament Greek has moved beyond this modernistic tendency, it is not yet freed from the equally problematic view of semantic invariance. Compare Evans' (*The Language Myth*, 4) observation of the negative impact rationalism has had on modern linguistics.

structuralism rightly identified the need to account for language as a system, that system was viewed as a neat and tidy structural unity with each element serving a specific and compartmentalized function.[181]

There was also a clear shift in modern linguistics, by and large, from a focus on diachronic analysis to synchronic analysis. Thus, while research in grammaticalization had already begun to make progress in the early 20th century, this shift in focus to synchrony seems to have contributed to a lack of awareness about grammaticalization and its implications for linguistic study, both diachronically and synchronically.[182] This resulted in what Lehmann has referred to as "amnesia" about grammaticalization.[183] Hopper and Traugott observe that this amnesia has persisted in contemporary linguistics.[184]

However, not only does the invariant semantic meaning thesis disagree with the observations of polysemy and gradual change advocated by the prestructuralist philological tradition, it has become clear from the past several decades of crosslinguistic research into language use and grammaticalization studies that such a perspective is untenable.[185] Especially relevant on this

181. This is famously expressed in Meillet's phrase *tout se tient*, credited to de Saussure (Koerner, "Notes on the History of the Concept," 1–15). Note Croft's (*Typology and Universals*, 46) observation that, ironically, this partly mitigated a truly systemic approach to language and actually encouraged the "individualizing" approach to language to persist, since the elements of the system are presumed to be neatly compartmentalized.

182. On this point, note Hopper and Traugott's (*Grammaticalization*, 124–26) discussion of the importance of grammaticalization for synchronic analysis precisely because it results in polysemy. Cf. Bybee et al., *Evolution of Grammar*, 300.

183. Dahl, "Grammaticalization and the Life Cycles," 91, citing Lehmann, *Thoughts on Grammaticalization*, 203–18.

184. Hopper and Traugott, *Grammaticalization*, 25. For a more detailed sketch of this background, see Hopper and Traugott, *Grammaticalization*, 19–50. Cf. Winters, "Diachronic Cognitive Linguistics."

185. See, for example, Evans and Green, *Cognitive Linguistics*, esp. chs. 10 and 21; Ariel, *Pragmatics and Grammar*; Riemer, *Introducing Semantics*, esp. ch. 11; Geeraerts, *Theories of Lexical Semantics*, 132–37, and other references in section 3.

point is Bybee's discussion of the semantic invariance thesis that can at times still be found in modern linguistics.[186] For example, Bybee presents a compelling critique of Michaelis's attempt to reduce the English present tense to the invariant meaning of a "state selector," which bears remarkable resemblance to the attempts of Porter, Campbell, and the like to present an abstract, invariant semantic meaning of the verbal forms in Koine Greek. Bybee concludes that such an analysis "leads to a distortion of the meaning of 'state' or 'stative' to the point where it is no longer a coherent notion" and that the same holds for any attempt to "identify a single abstract meaning for each grammatical morpheme."[187]

Proponents of semantic invariance should be commended for their effort to rigorously apply modern linguistic theory to language description and present language as a coherent system. Indeed, the commitment in these approaches to finding the "basic" meaning of a form may (when correctly qualified) even be compatible with the concept of prototypicality adopted in this paper. Unfortunately, insistence on semantic invariance and the derivation of all "pragmatic" uses from a common semantic core is the outworking of the weaker parts of the modern linguistic enterprise.[188] These proposals will consistently fail, since it is incompatible with the universally observed process of gradual language change and results in theoretically problematic abstractions of a form's meaning, which are so generalized in an

186. Bybee, *Language, Usage and Cognition*, 183–87.

187. Bybee, *Language, Usage and Cognition*, 186. Note a similar critique against semantic invariance proposals in the Arabic verbal system (Marmorstein, "Verbal Syntax and Textual Structure," 64–66).

188. Interestingly, even linguists coming from the (American) structuralist lineage seen in Chomsky's Generative approach to language have begun to recognize the need to account for gradual language change. See, for example, Anttila, *Historical and Comparative Linguistics*. Cf. Roberts and Roussou, *Syntactic Change*; and Faarlund, "Mentalist Interpretation." Even these approaches, which are radically different from the cognitive model adopted here, require synchronic semantic diversity in the grammar of a language community at any given point in time.

attempt to fit every usage that they become unhelpful and even distorted.

6.2 *Taxonomic Approaches*

Turning to scholars such has Fanning who view the Greek verbal forms as polysemous, they share the observation that proposals of semantic invariance are incompatible with the way languages actually work.[189] However, this observation has not been coupled with what many would consider an explanatorily adequate analysis that is informed by a linguistically rigorous model. Rather, more traditional approaches tend to present taxonomies of senses that are often descriptively thorough, but not explanatorily satisfying.

These two characteristics (affirmation of polysemy and somewhat limited taxonomy) of what may be called taxonomic approaches can be see in the following quotations from representative proponents. For example, Baugh keenly observes: "In my understanding, what drives Porter's work and his criticism of Fanning is his search for a perfectly coherent system within Greek verbal aspect 'with all the working parts functioning together'."[190] The problem Baugh sees with this view is that "living languages are full of inconsistencies which defy perfectly symmetrical (or systemic) modeling—imperfect modeling perhaps! The Greek of the New Testament in particular, with its variegated history and influences, is full of such inconsistencies and caprices."[191] This assessment helpfully points out the central contention in the debate from proponents of "taxonomic" approaches—semantic polysemy over semantic invariance. Baugh offers a very helpful analysis of the conditions under which non-indicative tense-forms communicate various meanings that is intuitively appealing. It is precisely that these more microscopic and taxonomic observations can be more fully

189. See section 4.1 for an overview of the senses generally recognized in these approaches to *léluka*.

190. Baugh, "Greek Tense Form Choice," 4 n. 14, citing Porter, "Defence of Verbal Aspect," 45.

191. Baugh, "Greek Tense Form Choice," 4 n. 14.

explained by being situated within overarching, cross-linguistically consistent pressures of motivated language change.

Similarly, regarding the quest for a form's semantically invariant core, Silva offers the critique: "Given the fluidity of language, however, the goal seems unrealistic . . . If we recognize that the semantic information conveyed by the cases can be strikingly diverse, can we expect to come up with a definition of verbal aspect that is invariant or unexceptionable?"[192] In other words, if we readily recognize genuine semantic diversity in other aspects of language, why should this not also be the case for verbal forms as well?[193] However, while this critique against the semantic invariance thesis is correct, an explanation beyond the observation of language fluidity is still to be desired. Further on, Silva offers the following explanation for a particular linguistic form in English: "In short, that's just the way we say it—and it would be of no real help to a foreigner seeking to understand English syntax if he or she were given a description of the aspectual function."[194] However, simply observing how something is said does not offer an explanation of why it is said the way it is. Especially when approaching the text of the New Testament, both questions must be asked.

While the taxonomies offered by these accounts are often descriptively rigorous and accompanied by very helpful observations of the contexts in which certain senses may occur, it is often less than clear how all these senses are conceptually related to each other and hold together in a coherent system informed by a robust linguistic model.[195] Indeed, in our view, the reason for the large agreement between the present analysis and the polysemous set of senses commonly identified by taxonomic

192. Silva, "Response to Fanning and Porter," 79. Not that this critique is directed at both Porter and Fanning, since, as noted above, Fanning also speaks of seeking an invariant semantic core, even if his better linguistic intuitions cause him to be inconsistent on this point.

193. Cf. Tresham, "Review of Basics."

194. Silva, "Response to Fanning and Porter," 79.

195. Note Porter's (*Linguistic Analysis*, 199–204) critique of Fanning's (and Campbell's) lack of a clearly defined linguistic model.

approaches is due to their more descriptive and diachronic orientation.[196] That is, they seem to be largely correct with their description of the meaning of *léluka*, even if they do not offer a linguistically justified and satisfyingly coherent explanation. However, this lack of a linguistically justified model to guide their analyses seems to be precisely what has led to loss of ground for this approach among those contributing to research on the Koine Greek verbal system and the critique that the more traditional understanding is theoretically lacking and too often appeals to unexplained "exceptions."[197] Furthermore, other than describing certain senses as common or uncommon, there is often a lack of more precise quantitative analysis to complement these qualitative lists of semantic potentials. That is, it is not always clear what sense is the most prototypical. Therefore, while the present study does provide robust linguistic corroboration of *léluka*'s semantic potential generally recognized by more traditional approaches, the proposed taxonomy of senses advocated by such scholars continues to lack what many would consider a satisfyingly coherent account.

6.3 *The Proposed Solution of the Wave Model*

It is in regard to the above-mentioned shortcomings of both semantic invariance and taxonomic approaches that the present model offers promising solutions. As presented in sections 3 and 4 and discussed in section 5, this model offers the linguistically

196. A similar observation has been made by many linguists: "It was noticed fairly early on that the closest relative of Cognitive Linguistics in the history of linguistics is probably the tradition of prestructuralist diachronic semantics" (Nerlich and Clark, "Cognitive Linguistics and the History of Linguistics," 592). See also Geeraerts, "Cognitive Grammar"; Geeraerts, "Katz Revisited"; and Nerlich, *Semantic Theories in Europe*.

197. Again, see for example, Carson's ("Porter/Fanning Debate," 25) critique of Fanning for not properly distinguishing between semantics and pragmatics (cf. Porter, "Defence of Aspect," 38; Campbell, *Indicative Mood*, 24–25; Mathewson, *Verbal Aspect*, 26–29), Silva's ("Response to Fanning and Porter," 77) statement that he finds Porter's theory more convincing than Fanning's, and Campbell's ("Breaking Perfect Rules") repeated charge that traditional approaches leave far too many exceptions unexplained (cf. Porter, "Defence of Aspect," 34).

justified semantic coherence (in the form of dynamic synchrony) which those such as Porter and Campbell seek, and at the same time accommodates the polysemous nature of verbal forms that has been recognized in past and present Greek scholarship, and indeed is consistent with pervasive crosslinguistic observation, all the while avoiding what seem to be the most problematic deficiencies accompanying previous approaches.

Specifically, while the present study corroborates the basic analysis of the Greek verbal forms as possessing a polysemous semantic potential, it also adds a more precise description based on prototypicality. Furthermore, the present model does more than providing a taxonomy of senses and contexts in which they appear. It also explains the coherence of the form by ordering senses according to their conceptual and diachronic relationship to one another, and weights these senses synchronically along the semantic-pragmatic continuum according to their level of entrenchment, indicated by frequency and productivity. Additionally, this analysis is not only empirically evident from the text of the New Testament itself, but is consistent with crosslinguistic investigation of highly regular, cognitively motivated evolutionary paths of verbal grammaticalization. The validity of mapping these crosslinguistic paths of change (particularly the resultative path) onto various synchronic stages of Greek is further corroborated by diachronic analysis, which is consistent with the past and future trajectory of *léluka* predicted.

This also satisfies the call for a linguistically robust and coherent analysis of what a verbal form means. However, this turns out to be a more complex coherence than the supposed semantically invariant core suggested by those such as Porter and Campbell.[198] The coherence of the form consists in the small,

198. Surprisingly, even those dissatisfied with Porter's model have sometimes continued to accept this assumption—which seems to be one of the biggest sources (if not the biggest source) of the model's problems—and still seek to distill verbal forms to a semantically invariant core, leaving the very legitimacy of this notion unchecked. This can be seen, for example, in Runge, "Markedness and Grounding," 220—one of Porter's most persistent detractors. Also note again the above comment regarding Fanning on this point.

cognitively, and functionally motivated semantic extensions which move the form's semantic potential along the crosslinguistically consistent path of change from one conceptually adjacent sense to the next. However, it is crucial to recognize that the conceptual connection between senses increasingly diminishes the more distant these senses become along the path. That is why there is a very close conceptual relation between the present perfect resultative and the present perfect experiential, but not between the non-stative present and perfective past senses, even though the same verbal form may communicate both in fully semanticized usages. From the perspective of realistic lingusitic coherence, the present model also avoids awkward or forced exegetical conclusions in order to harmonize each usage with one supposedly invariant semantic core. Indeed, as discussed in section 5.2, seeking an invariant semantic core for *léluka* is comparable to seeking an invariant semantic core for "can" and "ran" since they come from the same formal stock, and attributing any difference to pragmatic implicature in context rather than to the form's semantics.

Finally, rather than dismissing other approaches to the Greek verbal system, this model provides the overarching framework within which the fruits of other investigations can be unified. All the various formal and functional features of a verbal gram in the history of its development can be seen as evolutionary pressures that have facilitated (or mitigated) its development along the overarching path of change. That is, the present model provides the explanatory coherence that links together the finer details of more descriptive analyses. For example, research into the discourse functions of verbal forms and analysis of syntagmatic phenomena such as deixis, lexis, and other contextual factors that exert pressure on the meaning of a verbal form's various uses reveal the details of the contextual features that contribute to a form's synchronic polysemy and diachronic development. No one of these contextual features is uniquely responsible for change along a given grammaticalization path. Rather it is the aggregate of these contextual uses which, over time and in conjunction with the cognitively motivated (and therefore crosslinguistically consistent) path of grammaticalization, results

in semanticization that adds senses to the polysemous networks of a gram's semantic potential. In other words, from the variety of contextual factors consistently emerges a "salient discourse pattern" that moves perfect forms along this consistent path of change so that at any given time, it contains a range of senses (semantically stronger and weaker) along the path of change.[199]

7. Conclusion

Having presented the theoretical foundation of our linguistic framework and its application to *léluka* in Koine Greek (as a model for application to the entire verbal system), it will now be helpful to summarize 10 main benefits of this new approach. Additionally, since every model is more or less incomplete and fails to answer every question and solve every problem, we will briefly discuss the limitations of the present study and propose possible lines of further substantiation and future avenues of research.

1. *Empirical Basis*: First of all, the wave-representation of *léluka* is characterized by a high degree of compatibility with empirical evidence. The model directly builds on and, inversely, accommodates the entire semantic diversity and functional variability of the form. In other words, there is no clash between the classification of the gram and its possible uses, including those that are viewed as rare and superficially unrelated, which have traditionally been classified as "irregular" or, more recently, rejected altogether in order to accommodate the notion of semantic invariance. In fact, the notion of an irregular value or function completely disappears in our model. All senses are regular because all of them are compatible with the grammaticalization path, which presents the conceptual and sequential order of the gram's semantic potential. The gram does what it is typologically expected to do.

199. Ariel (*Pragmatics and Grammar*, 149–211) uses the idea of the "salient discourse pattern" to describe the convergence of evolutionary factors resulting in the gradual transition from pragmatics to grammar.

2. *Definitional Concision without Reduction:* Moreover, despite our empirically oriented approach of classifying each use (which tends to produce highly taxonomical findings), our model yields a concise and scientifically manageable (but not reductionistic) definition that unifies and explains the data. The variegated yet cognitively motivated polysemy of a form can be richly represented in a wave with semantic potential and semantic-pragmatic value simultaneously in view for any given synchronic time-frame or linguistic milieu. This means that the classification of *léluka* is much more than a mere taxonomy of cases or collection of micro-data. Specifically, it offers a more holistic explanation of the gram as a realistic, organic phenomenon by depicting it, at the global level, as a dynamic geometrical (bi-dimensional and bi-directional) entity with determined topological properties (taking the shape of a wave). The definition incorporates the statistical information concerning prototypicality with the polysemous nature of the gram and posits a cognitive relation between the components of this polysemous set. In this way, we offer a new type of classification of the gram not as a "thing" (an aspect or a tense) but as a kinetic topology. Simply put, a form's meaning is its synchronic wave. This definition, in turn, has greater explanatory and predictive power than traditional classifications.

With respect to explanatory power, our definition explains the synchronic behavior of the form in the analyzed corpus (both in terms of its specific uses as well as its diverse potential as a whole). Accordingly, the model gives us access to micro-states of the gram (every possible sense found on a concrete occasion) and to the macro-state of the gram (its global and/or systemic status as a coherent category). The model is analytic and synthetic at the same time. With respect to the predictive properties, the definition develops various synchronic and diachronic hypotheses, which can subsequently be tested. For example, it predicts what the most likely semantic properties of the gram can be in other texts, including other senses that are missing in Koine Greek but that are likely to be encountered at earlier and subsequent stages, and can even offer well-founded

explanations for dialectal differences (as noted above in section 5.3).

3. *Taxonomic Flexibility*: The model developed here is that it allows for a great taxonomical flexibility. It preserves the complexity of the semantics of *léluka* (and possibly of any gram) by accommodating any grammatical classes, not only ideal ones, but also fuzzy classes. Since the model tolerates any type of a semantic potential extracted from the empirical data, it yields a more realistic definition of grams that are not easily classifiable by traditional categories. As proposed in this paper, grams can be defined without introducing arbitrary dichotomies and unnaturally rigid boundaries. In other words, the classification of a gram in terms of a wave is comprehensive, without resorting to oversimplifications and/or without locating exceptional cases outside the definition proposed for a gram, or outside the model itself. Instead of inflexible definitions, one formulates fuzzy classifications that, on the one hand, are apt for any degree of a statistic variation, and on the other remain coherent and explanatory.

4. *Semantic-pragmatic Dynamicity*: The concept of fuzziness is related to another advantageous property of our model. Namely, it reconsiders the pragmatics-versus-semantics issue and offers a more realistic picture as defended by modern linguistics. Specifically, the notion of a semantic wave's peak (related to prototypicality) shows us the most conventionalized part of a gram's polysemous set, which can be regarded as most semantically entrenched. Inversely, the lower portions of the wave may be mainly pragmatically conditioned. However, even though these may be idealized as polar extremes, the line dividing the more- and less-conventionalized sections, and thus the border between semantics and pragmatics, is subjective and cannot be used to argue for homogenously semantic or pragmatic meanings on either side of the divide. Rather, natural language has very few completely innovative usages (since each subsequent usage of pragmatic implicature increases its semanticization) or totally conventional usages (i.e. ideal instances of semantics). Instead, real language exhibits a range of intermediate stages, since no section of the wave achieves an

ideal value with 100% frequency (which, again, would make language change impossible). In this manner, the inclusion of quantitative data for more precisely determining the relative prototypicality of each sense specifies the degree of semantization or pragmatic status of each sense relative to the others.

5. *Variable Granularity*: Another benefit of this model is that this definition of *léluka* is less susceptible to the perennial problems related to the level of precision one adopts. This model tolerates virtually any granularity categorization, with the exception of maximally coarse-grained granularity that unrealistically posits a one-meaning-one-form paradigm, which would not allow for any type of semantic map or polysemous set. In fact, it is arguably compatible with categorizations that will be developed in the future and as yet do not exist. To put it simply, whatever categories we use in determining the senses of the gram, it will always be possible to design a wave of which some portions will be raised, reflecting their greater prototypicality, since virtually every gram is a polysemous set of cognitively connected components. It is also important to emphasize that the individual senses we have ascribed to each case of the active indicative *léluka* forms can be scrutinized and improved. This sort of refinement is welcome and necessary to gradually approach a more accurate description of New Testament Greek grams. However, it is hypothesized that the general shape of the semantic wave of prototypicality on the path of change will persist.

6. *Approximate Objectivity*: This taxonomical flexibility, empiricism, and minimal dependency on model-specific categories also render this model more resilient than other approaches. Rather than trying to distill all uses to a single common denominator, we "measure" the gram for possible senses that appear in the text. That is, the model exerts the smallest possible amount of pressure to come to a particular usage with a preconceived meaning of the form. Rather, as with natural language learning, we arrive at a meaning by observing

its behavior in context.[200] Moreover, once the gram's semantic potential has been rendered as a semantic wave, its reading in texts is not heavily and absolutely determined by this definition—the form may still do "whatever it wants to do" within the range of possibilities predicated by the cross-linguistically consistent path of change. Therefore, further observations (in new texts) are less biased by the proposed classification than in other approaches, especially those that posit semantic invariance.

7. *Exegetical Guidance that Respects the Text*: The recognition that a grammatical form (e.g. *léluka*) will not have one invariant core at any given synchronic point, but a polysemous set of semantic potentials that are more or less semantically entrenched depending on its location on the path of change, has another benefit for those engaged in the study of Koine Greek. Namely, it frees pastors and scholars from trying to force each form into a semantic straight jacket, which ends up discarding readings, no matter how intuitive, that are deemed incompatible with the putatively invariant semantic core. Exegetes and translators can render the form in various ways, paying more attention to the context in which it appears and to its possible range of senses as predicated by the empirically based grammaticalization cline. At the same time, this model provides exegetes and translators with a more realistic framework for understanding the constraints which indicate the particular sense a form conveys in a given usage at a given synchronic stage of the language.

8. *Incorporation of Synchrony and Diachrony*: A related benefit of this model—which is missing in major approaches to *léluka* and the New Testament Greek verbal system as a whole—is the preservation of language dynamics. Language is an inseparable mixture of synchrony and diachrony. This is explicitly acknowledged in our representation, since we portray

200. Of course, we do measure the senses with typologically informed categories. There is, however, no other way to conduct a scientific research program. Any experiment must be conducted with certain presuppositions, especially the categories by which the data will be analyzed.

the synchronic state of the gram in dynamic terms as a kinetic semantic wave. In other words, our definition presents a gram's diachronic history and trajectory as inherently contained within the description and explanation of its synchronic meaning. Instead of presenting a purely frozen picture that lends itself to unrealistic interpretations, we offer a dynamic formulation that explains the synchronic and diachronic behavior of the form. In other words, the gram is represented as a kinetic curve, showing not only the current state of a gram but also the dynamic forces that propel it and regulate its behavior. Accordingly, the model preserves the characteristics of natural language as a prototypical complex system that is dynamic, path-dependent and metastable.

9. *Potential Insight into Speaker Competence*: Additionally, although the model is corpus driven and usage-based, it allows us to propose cognitively plausible hypotheses about linguistic competence, shedding some light on the perception of the *léluka* gram by native Greek speakers. Indications of this may be offered by the peaks of the wave and the productivity of senses—both strongly suggest which semantic domains may have been more conventionally associated with a gram and which were less so.

10. *Synthesis of Competing Approaches*: As described in section 6, this model seems to preserve the benefits found in two main factions in the study of the Koine Greek verbal system, while avoiding their respective shortcomings. Like Fanning and those who generally follow in his tradition (e.g. Wallace, Baugh, Tresham, etc.), the present model acknowledges semantic variation and corroborates traditionally recognized taxonomies. However, it also provides the cognitively motivated conceptual connection between senses that have defied the attempted solutions of previous proposals. Therefore, like Porter, Campbell, and those building on their works (e.g. Decker, Foley, Mathewson, etc.), it presents the form as a coherent phenomenon with robust linguistic support. However, it bases *léluka*'s semantic coherence on sound and empirically verified crosslinguistic evidence, rather than the pursuit of a semantically invariant core that defies discovery. Thus, our representation does not negate the relevance of previous scholarship. Rather, it

reconciles their seemingly incompatible insights—the affirmation of polysemy and gradual change, on the one hand, and the pursuit of a semantically coherent account, on the other.

This compatibility with the generally accepted taxonomies renders the implementation of our model in research and pedagogy relatively easy. Researchers, professors, and students can continue to benefit from traditional taxonomies *grosso modo,* as well as from studies presenting the various discourse-pragmatic and contextual features that impact the interpretation of a form. By and large, these research programs are compatible with the present model and are simply afforded a linguistically justified and cognitively coherent framework within which *léluka*'s various senses and semantic extensions can be conceptually connected in terms of a dynamic semantic wave. Furthermore, more in-depth courses of study in New Testament Greek can introduce students to the linguistic principles which shape natural language (grammaticalization, prototypicality, etc.) and the diverse phenomena observable in verbal systems (polysemy, fuzzy boundaries, etc.), providing students and young scholars with a more linguistically informed foundation on which to build future research and from which to offer linguistically better-justified exegesis and translation. At this point it should again be stressed that *léluka* is simply an illustration of the explanatory power this model can offer for the entire verbal system. The model can be applied to all the remaining verbal grams. Application to other forms will mainly consist of determining on which typological grammaticalization path these forms fall and how they relate to and interact with each other.

Despite the above-mentioned advantages, our model—as any scientific theory—is not and cannot be complete. First, in our study, we only analyzed the indicative active type of *léluka*, while middle-passive and modal varieties have been left unanalyzed (the reasons for this are given in section 1). Second, the study of *léluka* has been conducted in isolation from the other components of the verbal system and the entire verbal organization as such. In particular, our discussion was based upon internal statistics, i.e. the properties of the *léluka* gram

itself. However, grams are not only what they are given their intrinsic nature, but are also shaped by their relation with the remaining elements of the system (especially more closely related verbal forms). This is especially evident in the case of *léluka*, since its behavior is closely connected to the properties of the Aorist. It is obvious that, in order to enhance the representation of the gram, the semantics of middle-passive and modal types of *léluka* must be analyzed and the dynamic character (i.e. semantic wave) of the Aorist must be formulated and compared to it. Both studies will be conducted in near future by the authors of this paper so that a yet more comprehensive picture of the Koine Greek verbal system can be achieved. Nevertheless, we hypothesize that the basic shape of the wave representing its semantic potential will persist.

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