Follow the Signs

Archetypes of consciousness embodied in the signs of language

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Preface

When one speaks about the birth of the cognitive revolution, one typically talks of the 1950s, when the study of mind became a legitimate arena for scientific inquiry, buoyed by developments in psychology, linguistics, information theory, as well as artificial intelligence, computer science, and neuroscience. In psychology and linguistics, it was especially Noam Chomsky's critique of behaviorism and structural linguistics as it was being practiced in the US at the time that sparked the revolution. Contrary to European structuralism, the American version eschewed the study of mind, and especially that of meaning in language, as being a black box that could not be investigated with empirical scientific methods. Chomsky eventually won that argument, and structuralism was for all practical purposes declared dead. Then, a couple of decades later, in the 1970s, the Chomskyan trend was itself met with a counter-revolution, the one that took for itself the name cognitive linguistics. It is these two movements that currently live side by side, albeit rather uncomfortably, in current linguistic theory, with decidedly different fundamental principles regarding how the mind is presumed to work.

If we look past these developments as they took place in the US, however, to the situation in Europe, we get a significantly different picture. There, another version of structuralism had already taken root as early as the 1930s, championed by such scholars as Claude Lévi-Strauss in anthropology and Roman Jakobson in linguistics. For them, structuralism was a method for investigating the very nature of human cognitive phenomena. Indeed, one could well make the argument that the European structuralists were doing cognitive science before anyone thought to call it that. For Lévi-Strauss, structural analysis was a way of uncovering the nature of the unconscious as a logically structured universe, "a symbolic structure evoking the hidden order of experience." (Wilcken 2010: 182) For his part, Jakobson – taking cues from the most promising developments in philosophy and science at the time, including the theory of relativity, gestalt psychology, information science, Husserlian phenomenology, and Saussure's sign theory of language – demonstrated that the strictly relational nature of physical systems should be extended to the study of language at the levels of both sound and meaning, opening the door to understanding the ultimate nature of how language is processed in the mind.

Unfortunately, even the properly cognitive approach of the European structuralists met much the same fate as their American counterpart, as scholarship entered into the so-called post-structuralist era. But vestiges of European structuralism still resound, often unrecognized and unacknowledged, in the methodology of cognitive linguistics today – the vital role of metaphor being an notable example. This is one of the reasons why I have claimed that there is still much to be gained by further pursuing structuralist principles within the field of cognitive linguistics, provided that those principles are reengineered in the light of the advances in linguistics and neurological studies that have taken place in the meantime. In a previous publication, entitled *Reinventing Structuralism* (Sangster 2013), I made an initial attempt to do just that. The monograph before you now takes these ideas to their ultimate conclusion, and presents a comprehensive theory of language based upon the furtherance of the relation between these two approaches.

What makes this marriage possible in the first instance is the position taken on what constitutes truth and reference in language, the point where the approach of both cognitive and European structural linguistics differ most critically from that of generative grammar. Where the latter holds to the correspondence theory of truth, in which utterances are presumed to refer to events or things in the real world, the former two recognize that linguistic signs define the way we *experience* reality, and consequently refer to aspects of experience that are not immediately evident in things themselves. The approach that will be pursued in this monograph takes the role of the linguistic sign in structuring experience most seriously, more seriously in fact than in current cognitive linguistics, and therein lies the crux of what will be presented here.

The position of current cognitive linguistics with respect to the linguistic sign is that it is fundamentally polysemic, that at its core an individual sign is composed of different meanings whose identity and role is governed by the different cognitive domains with which it is associated. In this view, cognitive processes themselves are preeminent, in fact are deemed pre-linguistic, determining how the various specific meanings associated with a given sign are related. The position that we will take in this monograph acknowledges that the different meanings we associate with a given sign are psychologically real, but that this sense of difference exists at a lower level of consciousness than that at which the signs themselves operate, as organic properties of mind in their own right. We will argue here that the polysemy we associate with the use of linguistic signs resides at the rational level of consciousness, while the intrinsic meaning-producing capacity of signs is embodied in the relations between them at a higher, supra-rational level that operates with a more profound, organic sense of difference. In this view, it is the signs of language and the structure they comprise at this higher-order level that are preeminent, while the different cognitive domains we associate with them should

be understood as *emergent properties* of their very use. Thus it is the use of signs in novel contexts that expands our cognitive domains, not the other way around.

Specifically, we will argue that at the supra-rational level of consciousness linguistic signs are fundamentally monosemic, constituting a relational structure of their own, while the polysemy, the different meanings that we associate with them at the rational level, are properly viewed as contextual variants of the sign's underlying monosemic essence – variants that are induced by the context in which they are used. Appreciating the manner in which linguistic signs function at different levels of consciousness thus makes moot the argument of whether the sign is either monosemic or polysemic: in its pre-contextual state at the supra-rational level it is monosemic, while at the rational level where the sign necessarily occurs in a context, it is perforce polysemic.

Furthermore, we will propose that the structure that signs evince at this higher-order level contains a very basic set of archetypes, *conceptual potentials* that have resulted from the evolution of the linguistic sign itself from the signaling behavior of antecedent species. These archetypes have become embodied, in the cognitive linguistic sense, in the relations between the signs of language at this higher-order level of consciousness, where the capacity to structure thought and produce meaning originates. We will show that they constitute nothing less than the conceptualization of space- and time-consciousness, and demonstrate throughout the course of this monograph how they account for the range of usage associated with linguistic signs at all levels of structure, from the grammatical, including the syntactical, to the lexical.

We begin in Part 1 with a comprehensive presentation of the principles and concepts that make the present approach unique. There is little in the way of actual data cited in this initial presentation because the entire rest of the monograph is devoted to justifying the viability of the approach by way of specific examples in all areas of language structure. Even the specific nature of the archetypes referred to in this presentation won't be fully elaborated until later, to underscore the fact that they are not postulated a priori but derive from analysis of the full range of reference associated with specific linguistic forms. This is especially important given the proposed locus of the archetypes at the higher-order, transpersonal level of consciousness, which has not commonly been considered subject to empirical investigation.

Section 1.1 discusses the evolution of consciousness and its neurological foundation, demonstrating how the archetypes that we will define in the course of this study, and their potential to produce meaning, could have arisen.

To see how the communicative process itself could have evolved is the subject of Section 1.2, where we argue that the attempt to derive language from some existing communicative function like denotation, which is often ascribed to

primate signals, is misguided. Not only is there no known evolutionary source for the function of denotation itself, primate signals are no more denotative, referring to objects in the real world, than human signs are.

This leads us to the next stage in the development of our argument, what the concept of connotation implies about the ultimate nature of reference in human language, the subject of Section 1.3. A connotative process is a self-referring one, where a sign refers to an aspect of its own meaning – is inserted in a context, and its underlying meaning is then interpreted in terms of the context in which it is experienced. We discuss the nature of self-referring systems in this section, systems that are self-organizing in that they maintain their structure by spontaneously producing *contextualizations* of their own components.

Having established how contextualization operates in principle, we return in Section 1.4 to the nature of higher-order consciousness itself, to justify the existence of a supra-rational or transpersonal level distinct from the rational, and to propose the kind of structure that must exist at this level where the signs of language are concerned. We present a socio-cultural and systems-oriented proposal for the kind of relational structure that would have evolved, given the living conditions in which early hominids found themselves – the type of structure that the Jakobsonian model of sign relations is based on.

The Jakobsonian model, however, has raised a number of issues that have proven over the years to be controversial, and these issues are clarified and responded to in Section 1.5.

Section 1.6 brings in several additional sources to bolster the particular view of structure in higher-order consciousness that we are proposing.

We have more to say about the locus and function of metaphor in Section 1.7, metaphor being fundamental to the manner in which the production of meaning is understood in cognitive linguistics.

To conclude the chapter on general concepts, we review, in Section 1.8, the literature of current neurolinguistic research, to demonstrate that the developments in this growing discipline are fully compatible with what we are presenting here. We end with the challenge that this research, which to date has been confined to experimentation with observable and measurable cognitive phenomena, needs to be extended to consideration of what pertains at the supra-rational or transpersonal level of consciousness, a starting point for which we trust can be found in what is being presented in this monograph.

Part 2 initiates the analysis of specific linguistic forms to demonstrate how the principles previously enunciated account for the full range of contexts in which a given form occurs. We begin, in Section 2.1, with a discussion of time-consciousness, the cognitive capacity that was central to the evolution of a transpersonal level of consciousness in humans. This would have been a non-linear, hierarchical

sense of time that produced the capacity to conceive of a "not now" distinct from the "now", one that would henceforth be reflected in the structure of signs at the transpersonal level.

We describe how this hierarchical sense of time as a self-referential phenomenon is expressed in the structure of the English verbal grammatical system. This thesis is further pursued with an analysis of the Russian case system, demonstrating that the meanings of the different cases are also a matter of time-consciousness when viewed in a properly self-referential manner.

We extend the discussion of time-consciousness to the realm of prepositions in Section 2.2. We analyze in some detail the manner in which 'up' and 'down' combine with nouns and verbs in their prepositional and adverbial uses respectively, and conclude that the speaker's motivation in using these prepositions is best explained by time- rather than space-conscious criteria.

We extend the analysis to other prepositions in Section 2.3, and consider the existence of archetypes of space- as well as time-consciousness.

Section 2.4 provides examples of three archetypes of space-consciousness embodied in prepositions. We conclude that these archetypes represent nothing less than the three dimensions of space in the space-time continuum, where the first dimension constitutes an unspecified plurality of possibilities that serves as the basis upon which the space-time continuum rests.

From this we derive a definition of plurality as a property of linguistic signs generally, one that requires us to reconsider the very nature of number as it is conceptualized at the level of higher-order consciousness where the archetypes of meaning in language reside. We develop this thesis in Section 2.5, using number theory itself, where counting is acknowledged as only the most immediate and primitive of the ways in which number is ultimately conceptualized in human consciousness.

Section 2.6 offers a detailed analysis of verbal aspect in Russian, providing a further illustration of how a two-dimensional image functions to structure the relation between signs in the grammatical realm. Russian is chosen because it is a language where the overt opposition between perfective and imperfective verb forms constitutes a genuine sign relation with consistent semantic implications.

Finally, we conclude in Section 2.7 with a preliminary discussion of the thesis, further developed in the epilogue, that the conceptual archetypes which evolution has embodied in the signs of language at the transpersonal level of consciousness represent nothing less than the dimensions of the space-time continuum inherent in quantum reality.

Part 3 extends sign theory into the realm of syntax. Section 3.1 presents the principles upon which a sign theoretical analysis should be based, beginning with the premise that the signs themselves and their arrangement on the syntagmatic

axis must be taken at face value and not presumed to derive from some other source – that word order itself constitutes a genuine sign relation with the same oppositional structure as in the morphological realm. From this we derive the concept of *modification relation* as the underlying principle of syntactic combinability in a sign-based theory of language.

We provide a detailed analysis of word order in English in Section 3.2, demonstrating that the relative placement of modifiers and the signs they modify is consistent at all levels of phrase structure, and that this relation corresponds systematically to one of the archetypes previously identified.

Section 3.3 considers the structure of the English predicate in the light of the principles being outlined here, demonstrating that traditional notions of phrase structure grammar need to be completely rethought.

We apply these same principles to a detailed analysis of word order in French in Section 3.4, and identify the archetype that defines the modification relation in that language. We focus this analysis specifically on the structure of the French verbal grammatical system in Section 3.5, and describe the differences among the various tense forms in terms again of the conceptual archetypes previously identified, demonstrating that they too constitute a systematic relational structure.

Part 4 applies these principles to the analysis of lexical meaning. While this analysis is still preliminary at this stage, it is suggestive of the type of investigation that can successfully be pursued with a strictly sign-theoretical approach.

Section 4.1 considers the difference between grammatical and lexical meaning, and argues that the real difference has to do with the nature of the choice that is engendered in making reference, not the nature of reference itself. Thus the same principle of contextualization ought to apply in both realms, and we therefore ought to find that the conceptual archetypes defined in this study also underlie, in their own way, the meaning of lexical signs.

Section 4.2 shows the manner in which these archetypes contribute to the cognitive patterning inherent in the structure of nouns. We demonstrate how whole sets of nouns cluster around specific archetypes, providing a foundation for the structure of meaning in the lexical realm, one based on the concept of unconscious associative networks. We do the same thing with the verbal lexicon in Section 4.3.

We conclude this monograph with an Epilogue that considers what may ultimately be implied by the fact that the hierarchy of conceptual archetypes identified in this study mirrors the structure of the space-time continuum in quantum physics. We end with the conviction that the way we perceive reality via language is in principle no different from the way quantum theory suggests we do.

This monograph represents a substantial reworking of ideas originally presented in previous works, especially in Sangster 2013. Most notably, the features or archetypes have been reconceptualized, and consequently renamed, in accordance

with the principles of space- and time-consciousness that now constitute a central thesis of this study. As a result, some of the analyses of specific grammatical and lexical forms have been revised, where reconsideration of the archetypes themselves helped to refocus the analyses. The concept of contextualization is now proposed as a technical term describing the self-referential function of linguistic signs capable of generating meaning in a self-organizing system of sign relations. This in turn has required a reconsideration of the concept of deixis as that term has previously been applied.

The ideas being put forth in this study owe a lot to individuals who have influenced my career and my thought process throughout the more than fifty years I have been working on this project. I was introduced to the discipline of linguistics during my undergraduate years at Hamilton College in the early 1960s by the brilliant anthropologist Earl W. Count. Subsequently I was fortunate to have several well respected scholars as mentors and members of my doctoral committee at Indiana University in the late sixties, including Fred Householder and Carleton Hodge in linguistics, Tom Sebeok in semiotics, David Bidney in anthropology, and most importantly Cornelis van Schooneveld in Slavic studies. Roman Jakobson himself gave generously of his time to meet with me and critique drafts of both my dissertation and my first book, *Roman Jakobson and Beyond* (1982).

A number of other scholars provided valuable feedback and encouragement as this project matured during the writing of my next book, *Reinventing Structuralism*. These included Efrain Kristal and Russell Campbell at UCLA, Robert Blake at UC Davis, and Jean-Jacques Courtine at UC Santa Barbara and the University of Paris. Fritjof Capra and I briefly worked together on aspects of mutual interest involving the theory of self-organizing systems and autopoiesis. Gerald Edelman provided valuable feedback on his theory of neuronal group selection or neural Darwinism. Stanislav Grof also kindly sent me materials regarding his work in transpersonal psychology. The co-founder of biogenetic structuralism, Charles Laughlin, gave much of his time in personal discussions and careful reading of drafts of this and other writings, for which I am most grateful. Finally, it was Volker Gast at the University of Jena who provided valuable advice regarding that publication and the present one.

As for the present study, I am grateful to several scholars for their input and counsel. I have benefitted a great deal from the advice of Bob de Jonge regarding the structure and the tone of this work. I am also grateful to Edna Andrews for pointing me to relevant work in the field of neurolinguistics. And feedback from anonymous readers highlighted crucial points that needed further clarification.

This work is dedicated to those scholars who, over the centuries since the time of the early Sanskrit grammarians, pursued the study of meaning in language as an inherent property of the linguistic sign.

Introduction

Theories of form and meaning

If there is one thing that scholars have agreed upon, from the earliest attempt at understanding language as a signifying operation by the Sanskrit grammarians in the fourth century B.C. right down to the present, it is that language, somehow, consists of relating a sound form with a meaning – linking a physical, perceptual object (a linguistic sign or word) with a psychological, conceptual representation in the human mind. This crucial observation constitutes the most basic assumption from which all inquiry into the nature of human language ultimately derives. Theories about how this linkage is achieved and how that defines the nature of the human language faculty, however, have differed drastically, ranging from the most direct, one form-one meaning type of hypotheses regarding individual words and their subsequent ability to combine into sentences to the most indirect, computational syntactic ones that put the combinatory properties of words ahead of their ultimate meaning. And after many centuries of intellectual debate, arguably the longest in scientific history, there still remains no general agreement as to the ultimate nature of this fundamental relationship – less agreement, one could argue, than that among physicists where quantum mechanics now seeks a synthesis between the seemingly irreconcilable particle and wave theories of matter. The question remains, therefore, whether these varying views are necessarily incompatible or not, and if not, how they compare with one another.

On the one hand there are those who consider, as the eminent Harvard linguist Dwight Bolinger once argued, that "the natural condition of a language is to preserve one form for one meaning and one meaning for one form." He thought it absurd that there could be meaningless sound forms, that language would, as he so artfully put it, "establish a lunacy ward in its grammar or lexicon where mindless morphs stare vacantly with no purpose other than to be where they are." (Bolinger 1977: ix, x) This view, commonly known as the monosemic approach, ultimately dates back to the work of those early Sanskrit grammarians, who used the term *sphota* to describe the process by which meaning "flows" or "bursts forth" from the very essence of the physical sound. (Jakobson 1958: 394; Kristeva 1989: 85) It has had a number of proponents in the past century, beginning with Edward Sapir and Benjamin Lee Whorf, whose theory of linguistic relativity addressed – not

always in the most felicitous manner unfortunately – the one-form, one-meaning hypothesis. One should also mention William Diver, founder of the Columbia school; Gustave Guillaume, founder of the Psychomechanics school; Charles Ruhl, who wrote a treatise on the subject of monosemy (Ruhl 1989); the Russian linguist and polymath Roman Jakobson, who pioneered the analysis of direct form-meaning relations in the system of Russian grammatical morphemes in a series of articles spanning some fifty years (collected in Waugh and Halle eds. 1984); and the Dutch linguist and Slavist C. H. van Schooneveld, whose discovery of six cardinal semantic "features" underlying the structure of both grammatical and lexical signs in Russian was the result of a steadfast commitment to the monos-emic principle (van Schooneveld 1978). One might also mention in this regard the work of Thomas Sebeok. Though not specifically a proponent of the one form-one meaning hypothesis, his work on the role of signs in the field of semiotics high-lighted their fundamentally *sui generis* nature. (e.g. Sebeok 1991) Underlying all of these approaches is the conviction that the unity of a sound form and a meaning in human language constitutes a sign, that the way in which the signs of language are structured is fundamental to our understanding of human cognition, affecting how humans ultimately experience reality. These approaches assume that it is the properties inherent in the nature of the sign itself that determine how meaning in language is generated.

At the opposite end of the spectrum there are the various versions of genera-tive grammar which, from its very beginnings, has assumed that recursion is the most fundamental property of human language. This view puts syntax at the core of the language faculty and thereby relegates the two sides of the linguistic sign, its form and its meaning, to secondary status as separate components related to one another, if at all, only through their interface with an autonomous syntactic component. These fundamentally computational approaches have led on the one hand to the postulation of "empty" signs, sound forms that have no function other than to satisfy the requirements of a purely formal (in the mathematical sense) universal grammar – to "be where they are", as Bolinger put it – and on the other hand to the assumption that certain presumed universal categories of grammar exist in languages which may not have any overt signs representing them. In the Minimalist Program, for example, it is explicitly assumed that "case is always present abstractly", whether or not it is morphologically manifested in a given language. (Chomsky 1996: 110) And even in languages that do have an overt case system, there is no necessary correlation between the universal case categories and the actual case forms used to express them. Thus in Russian, for example, the "direct object" case may be represented by any one of three distinct case forms: the accusative, the instrumental, and the genitive. In such instances a device is mechanically inserted into the system, a so-called case filter, to adjust it so that

one arrives at the correct surface realization. In this view, the actual sound forms of language are relegated to the status of "mere surface variables", as Chomsky was fond of saying, divorced from any necessary correlation with their semantic essence. Consequently the semantic component of a generative grammar is no longer defined in relation to how the sound forms of language themselves structure experience. It is based on principles of formal logic where the correspondence theory of truth prevails, where linguistic meaning is assumed to be in a one-to-one relation to what we think we know about real-world phenomena, irrespective of the way in which the signs of language are structured.

Intermediate between these two approaches are the various proposals of cognitive linguistics, whether it comes under the rubric of cognitive linguistics generally or cognitive grammar specifically. These approaches take the relation between sound and meaning to be central to the human cognitive enterprise; but they put cognitive categorization first and define the linguistic use of signs upon it. Linguistic meaning is said to be governed by the operation of "domain-general cognitive processes" which determine how the various uses of a given sign relate to one another. In this view the linguistic sign is presumed to be fundamentally polysemic: "In the simplest cases, lexical items are pairings of phonological forms with individual concepts. But such simple cases are rare exceptions. Polysemy is the norm. Most words have a number of systematically related meanings." (Lakoff and Johnson 1999: 499) These related meanings depend on the way in which the mind organizes the different cognitive categories with which a sign is associated.

This approach differs from the preceding two in significant ways. In the first place, there is a principled difference between cognitive and generative grammar in that the latter defines meaning in the Cartesian sense as necessarily corresponding to phenomena in the outside world (the correspondence theory of truth), whereas the categories of cognitive grammar are not "in the world" for the mind to relate to; they are produced in the mind (they are "embodied") and projected onto the world through experience with one's environment. On the other hand, the cognitive approach differs from the monosemic approach in that it assumes that signs are by nature polysemic, governed by the operation of pre-linguistic cognitive processes rather than by anything intrinsic to the nature of the sign itself.

It will be the goal of this monograph to demonstrate that these latter two approaches have much in common, that while there are significant differences, they both take the form-meaning relation inherent in the linguistic sign to be central to understanding how the mind conceives reality. There is, to be sure, a fundamental difference with respect to the role that cognitive processes are presumed to play, whether they are preeminent or whether it is the properties intrinsic to the sign itself that ultimately govern the production of meaning. Nevertheless, we will show throughout the course of this study that whether the linguistic sign is

fundamentally monosemic or polysemic depends on the level of consciousness at which the sign functions. Signs are perforce polysemic at the rational level of consciousness, at the level of their usage where they necessarily occur in a context; but they are monosemic at the higher, pre-contextual level where their relation to one another constitutes a well-ordered and self-organizing system in its own right. Recognition of this important distinction ultimately leads to the conviction that it is the properties inherent in signs themselves that assume preeminence where the production of meaning is concerned, and that the various cognitive domains associated with signs in their contextualized state should be understood as emergent properties of their very use.

In order to develop this thesis, we will need to justify the existence of a higher-order level of consciousness, a supra-rational level where linguistic signs relate to one another as organic properties of mind in their pre-contextual state. We will do so by demonstrating how higher-order consciousness could have evolved from the primary consciousness of antecedent species. We begin, therefore, with a discussion of the evolution of consciousness and its neurological foundation.

PART 1

General concepts

The evolution of conciousness and its neurological foundation

There have been a number of recent studies describing the evolution of consciousness in neurological terms. One of the most compelling is the so-called theory of neuronal group selection proposed by the Nobel laureate Gerald Edelman that goes under the name of neural Darwinism. (Edelman 1987, 1989, 1992; Edelman and Tononi 2000) According to this theory, the brain is not a hard-wired, top-down, rule-governed structure, as the various interpretations of generative grammar would suggest, but rather a self-organizing, somatic selection system consisting of a complex set of feedback loops or reentrant paths that allow the correlation of new experience with old. It is this dynamic, self-organizing structure that creates memory, defined as the ability to repeat a performance based upon the specific enhancement of a previously established ability to categorize. This process establishes certain values or norms in the system, so-called value-category memory, that predate human evolution and are ultimately crucial to the development of higher levels of consciousness.

Anatomically, the unit of selection is a closely connected collection of cells called a neuronal group. These groups form maps that are connected to one another topographically, so that they can correlate happenings in different sensory areas without a higher-order supervisor. With such a structure, the most basic form of categorization, *perceptual categorization*, proceeds by coupling the outputs of multiple maps to achieve a global mapping. (Edelman 1992: 89–90) The next level, *conceptual categorization*, is ultimately a more sophisticated form of perceptual categorization. To have concepts, an organism must be able to compare one perceptual categorization to another, not necessarily related one. The resulting form of categorization correlates one brain mapping with another, creating "a mapping of types of maps". This ability was achieved, according to Edelman, by the evolution of additional reentrant connections involving the cortical areas that occurred roughly at the transition from reptiles to birds and reptiles to mammals. "Massively reentrant connectivity arose between the multimodal cortical areas carrying out perceptual categorization and the areas responsible for value-category memory". (Edelman and Tononi 2000: 107) It is the development of these additional "layers" of reentrant connectivity that allowed for the evolution of what Edelman terms

primary consciousness, the creation of conceptual memory systems with "the ability to combine different perceptual categorizations related to a scene or an object and to construct a 'universal' reflecting the abstraction of some common feature across a variety of such percepts". (Edelman and Tononi 2000: 104) It is through the mechanism of reentrant connectivity that an organism learns by experience, and in so doing, creates memory – memory being a dynamic process involving the successive reinforcement of a previously learned experience, not a static storehouse of information. In this view, memory creation is a properly probabilistic matter of natural selection, one where those experiences which gain reinforcement through repetition have survival value, whereas those that do not eventually die away.

Since this mechanism was already in place with the advent of primary consciousness, it would have been one of the devices humans built upon in converting primate signals into signs. As we will show in the course of this study, the way in which the signs of language are used to produce contextualizations of their own essence is a spontaneous process subject to natural selection through feedback from the speech community. It is the feedback process, the reinforcement or lack thereof by the speech community, that determines which contextual meanings will survive and which not – which will have sufficient staying power to expand our cognitive domains and which will simply die away. Proponents of usage-based grammar are correct in highlighting this aspect of what they call grammaticalization. This is also, of course, the process underlying the metaphorical expansion of meaning that is central to the cognitive enterprise, a process that we will propose is intrinsic to the very nature of the linguistic sign itself.

Edelman goes on to demonstrate that those organisms which have achieved the level of primary consciousness nevertheless have not yet evolved the capability to operate outside of real time, the ability to function independently of the organism's activity in a given event-space. While the conceptual categorization that defines consciousness at this level has the added advantage of having learned from past events, it is still, in Edelman's terminology, only operating in a "remembered present". It is only at the final stage of evolution, the hallmark of which is language, that the organism is freed to conceptualize beyond the real-time activity of the brain's dynamic core, to break "the tyranny of the remembered present" and achieve the level of what Edelman terms *higher-order consciousness*.

Subsequent to the development of bipedal posture in hominids, changes began taking place in the basicranial structure of the skull, allowing for the creation of a new and uniquely human anatomical feature, the supralaryngeal tract. At roughly the same time, new cerebral cortical regions emerged on the left side of the brain, the so-called Broca's and Wernicke's areas. These cortical regions served to link the acoustic, motor, and conceptual areas of the brain through yet another massive set of reentrant connections. (Edelman 1992: 126–7)

The most important result of these evolutionary changes was still not language per se but the vast increase in the capacity of memory that this final massive set of reentrant connections afforded, namely the ability to hold onto a thought or an image long past the time of its initial occurrence, long enough to be able to apply it in a context unrelated to the initial stimulus from which it originated. And this would have been another hook that the language faculty of humans latched onto, converting primate signals, which operate only in real time, into signs capable of freeing themselves from the immediate context and creating ever new contexts of their own – in a word, becoming symbols.

The ultimate impact of this development would have been nothing less than the evolution of time-consciousness itself, the ability to conceive of a "not now" distinct from the "now" of our primate ancestors. This development cannot be overestimated because it is this capacity that remains at the heart of the difference between the primary consciousness of antecedent species and the higher-order consciousness of humans. As such, therefore, it should be considered vital to any analysis of how meaning is produced by the structure that linguistic signs evince in their pre-contextual state at precisely this higher-order level, as we will demonstrate as this study proceeds.

What is more, language was not the only beneficiary of this monumental evolutionary development. Tool-making, for example, could now also be freed from its relation to the particular task at hand, the concept of tool itself now capable of being held in memory long enough to become a symbol in its own right, one that could be applied to an infinite number of potential possibilities. Where it was once thought that man was "the tool-making animal", it is now generally understood that what sets man apart in this respect is the ability to use a tool to make a tool. The evolutionary leap here is from tool modification, which antecedent species can be very adept at given the particular task for which a more refined tool would be more effective, to tool manufacture, a process that requires the organism to have a goal in mind towards which the creation of a new tool could be used. Such an ability requires a mental process operating *in absentia* from any particular contextual application *in praesentia*. (Corballis 1991: 62–3) Even more to the point, a tool could now become not just something with which to perform a certain task but a concept in and of itself, conceived as an object with significance beyond its mere use. It could now become an "artifactual symbol", as Robert Mahaney has called it, conveying a range of social and cultural information based not only upon its use but on the manner in which it is constructed and consequently construed. (Mahaney 2014)

All species necessarily live in the event-space dictated by their form of consciousness. What is real for a given species – how it experiences reality – is therefore determined by the structure of its consciousness. In a recent article (Sangster

2014) I made the point that what the evolution of higher-order consciousness in man produced was nothing less than the ability to distinguish between the "actual" and the "real", between the physical experience of the present and the concept of the present as but one way of experiencing reality. For our closest ancestors the actual and the real are essentially one and the same: the ability to conceptualize does not extend beyond its operation in real time. It is well known, for example, that the chimpanzee can plan ahead for a certain length of time while it searches for and/or refines a tool suitable for completing a given task. So what constitutes the present (real time) for species with primary consciousness must be defined in terms of the task at hand, which can last as long as it takes to hold the organism's attention with respect to that task. The present as actuality, therefore, is a matter of contingency, where the concept of time is contingent upon the scope of a given task, and the ability to plan ahead does not exceed that contingency.

Our nearest primate ancestors, for example, do not stockpile tools for use at a later time, or plan ahead by keeping a store of them at a location known in advance to be where they will eventually be needed. Even the Neanderthals, though already members of the genus *Homo*, still seem to have differed from modern humans in this way. Though they were very adept at tracking and hunting game over relatively long periods of time, there is no evidence that they could plan far enough ahead to predict the migration of herds at specific times and places. Their hunting ability, as Brian Fagan has noted, was fundamentally opportunistic: moving seasonally with other animals as they themselves foraged for food, studying their habits and taking advantage of whatever weaknesses they noticed; or simply waiting for larger and stronger animals to make a kill and scavenging the remains. (Fagan 2010) Though they sometimes buried their dead, the lack of grave goods at burial sites and the apparent absence of ritual testifies to their not being able to conceive of a world beyond the present to which people went after death. Most important of all, there is every indication that the Neanderthals did not possess the capacity for language in the form we know it today. Though recent research suggests that they may have been more advanced than previously thought, the anatomical evidence is insufficient to determine one way or the other. That being said, we can surmise, with Brian Fagan again, that if they had such a capacity, it would have produced something more significant than the static nature of Neanderthal culture over a period of some 200,000 years on the earth. (Fagan 2010: 80) Once the requisite neural circuits are in place to permit connecting one type of experience with another completely different one apart from its actual performance, the nature of memory creation and storage changes dramatically, and innovation – the evolution of a language faculty being one evident possibility – becomes virtually inevitable.

A number of other recent studies corroborate the conclusions being drawn here regarding the evolution of consciousness in humans. The theory known

as biogenetic structuralism also stipulates that it is "neural reorganization that underlies any behavioral (or cognitive) change in an evolving species". (Laughlin and d'Aquili 1974: 19) The word re-organization is crucial here, for to be valid, evolutionary theory must look for the source of any new capacity, such as language, in some biological function which, if properly selected for, could originate it. Hence the language faculty must have originated "as a consequence of neural reorganization at the *pre-hominid* level", that is, as "a progressive elaboration of the systems laid down at the prehominid level". (Laughlin and d'Aquili 1974: 20) And just as neural Darwinism proposes *reentrant connectivity* as the major source of such evolutionary reorganization, biogenetic structuralism stipulates that it was the evolution of *cross-modal transfer* between the various cerebral subsystems that accounts for the progressive development of abilities from the perceptual to the conceptual and ultimately to language itself. In this view, the potential for language would have arisen when the capacity for learning (memory) was no longer tied exclusively to, or operating exclusively through, the limbic system, but was facilitated by cross-modal transfer between the limbic system and other existing non-limbic sensory modalities.

In the same vein, Denis Bouchard insists that we cannot understand the origin of language if we look for antecedent examples of its function. "It is not a system with a function of communication that emerged, nor with the function of organizing thought. It is a system of signs that emerged because two very different substances [percepts and concepts] met in the brain via their representations by a new neurological system which itself evolved for totally independent reasons. This system did not evolve due to functional pressures because it had no function at the beginning, it was just a side effect: it took on functions after its emergence." His thesis is that "the human capacity for language rests on minute neurological changes that provided some human neuronal systems with a new 'representational' capacity, resulting in a cascade of new functional capabilities." (Bouchard 2013: 106) Key to these changes was the emergence of what he terms Offline Brain Systems, brain functions that operate outside of real time that were made possible by the increase in *synaptic interactions* among different brain modalities. Specifically, they are "systems of neurons that can be activated *in absentia*: the individual does not have to see or hear an action for these neuronal systems to be activated. These Offline Brain Systems (OBS) are triggered by representations of events instead of the events themselves, and produce representations of events with no brain-external realization." (Bouchard 2013: 107) And he concludes that one of the major side effects of these developments would have been the ability to link percepts and concepts, the two essential sides of a linguistic sign, irrespective of any external stimuli.

The evolution of off-line brain systems is crucial to our appreciation of the referential capacity of linguistic signs, for it implies that there is nothing that suggests

they make reference to any particular elements of exogenous reality. They are free to operate in an entirely sui generis manner, creating contextualizations of their own essence without regard to anything that may exist in the environment at the time of their creation. As we shall see again in the next section, this capability was already present in a more primitive form with the signaling capacity of antecedent species, but it was brought to a much higher level with the evolution of the critically new brain structure that allowed the human mind to operate outside of real time.

From primate signals to human signs

The problem in much thinking about the origin of human signing behavior is not only due to the fallacy of looking for a functional origin, but to the very assumptions we make about what those functions are. One of the most insistent of these assumptions is that the primary function of the linguistic sign is one of *denotation*, of referring to events and things in external reality. This assumption is central, for example, to the Cartesian theory of language, where language and reality are considered separate realms, and our theories of reference, it is said, should satisfy a condition of truth that links the two in the mind. This view of the referential function of language is embedded in theories of formal, so-called truth-conditional semantics where, as John Saeed notes, "a successful match is called true: an unsuccessful match is false". (Saeed 1997: 269)

It is this view of reference as a matter of denotation which led Chomsky to claim that his now-famous sentence "Colorless green ideas sleep furiously" has no meaning, is false, because it does not correspond to anything we know about the real world. Roman Jakobson, one of the main proponents of the monosemic view described earlier, took Chomsky to task on this very point years ago, noting that the grammatical relations evident in this construction "create a meaningful sentence that can be submitted to a truth test: Do things like colorless green, green ideas, sleepy ideas, or a furious sleep exist or not?" And he went on to show exactly how they do. (Jakobson 1971: 494–5) As long as there is nothing that violates the grammatical structure of a language, lexical concatenation always has the *potential* to produce something meaningful in some context. Otherwise we could never write poetry, let alone joke or tell lies, which after all are exactly what the evolution of the language faculty allows us to do.

It is precisely this denotative view of reference that bedevils many attempts to explain the evolution of human language from primate signaling behavior, when primate signals are also assumed to be a matter of denotation, and one is looking for antecedents to human language in this form of reference. It is frequently assumed that primate signals refer to things in the environment which, for example, represent threats or danger to the species, and that the referential capacity of the signals is fixed in this manner. Thus the vervet monkey, whose signaling behavior has been studied extensively, is said to have a number of calls, each of which refers

to a different animal frequently encountered in its environment – a snake, an eagle, or a leopard – calls with which certain specific behaviors are associated, such as hiding in the tall grass or running for the trees. But the fact is that these same behaviors have also been observed to occur in the absence of the particular predatory stimulus with which it is assumed to be attached. (Wheeler and Fischer 2012) In one reported case (Leakey and Lewin 1992: 241–2), a vervet mother noticed an eagle descending on her young too late to use the so-called eagle call signaling hiding in the tall grass and used the so-called leopard call instead, recognizing that the safest thing to do under the circumstances was to run like hell for the trees. From this we ought to conclude, contrary to what Leakey and Lewin suggest, that the meaning of the calls does not refer externally to eagles, snakes, or leopards at all, but internally, to behaviors inherent in the consciousness of the organism itself that are necessitated by whatever circumstances may be relevant to their use. There is no Cartesian dualism in the referential capacity of these signals any more than there is in human language; there is only a categorizing ability inherent in the consciousness of the organism whereby certain behaviors that have proved crucial to the survival of the species are embodied in the signals themselves, regardless of what triggers them. Primate signaling behavior, therefore, should be seen not as denotative but as *connotative* in the strictest sense of the term, directed inward to the behavioral necessities of the organism rather than outward to any particular element in the environment. Primate signals are strictly connotative, expressing their inherent meaning according to the context of their use.

As Maturana and Varela have noted, our understanding of the evolutionary origin of natural languages is made impossible when language is considered a denotative symbolic system for the transmission of information. If that were the case, the search for origins would demand the pre-existence of the function of denotation, which is exactly the function whose origin needs to be explained. (Maturana and Varela 1980: 30–1) To explain the evolution of any capacity, as we have already noted, one must identify a biological function from which it could have originated; and in fact there is no function we know of that could have originated the function of denotation itself, of identifying events and things in external reality.

Recognizing that all reference is ultimately connotative is the proper way to understand how human signing behavior could have evolved from the signaling behavior of antecedent species. What makes primate signals appear to be fixed is not that they refer to particular elements in external reality, but that they are contingent upon the occurrence of events in real time for their elicitation. They are tied to the immediacy of the moment – to the circumstances that trigger their use – whatever those circumstances may be.

What ultimately contributed to the transformation from signals to signs, we may then assume, was the evolution of certain brain structures that gave *Homo*

sapiens the ability to build upon the connotative power already inherent in primate signals by freeing them from the contingency to which they are confined. With the emergence of Broca's and Wernicke's areas accompanied by the massive increase in reentrant connectivity or cross-modal transfer that occurred in the evolution of the primate brain, the resultant increase in memory capacity would have made it possible to hold on to the concept represented by a given signal beyond its use in a given type of situation, so that it could be applied in different, unrelated contexts. This monumental evolutionary change would have provided the basis for signals to be applied to a potentially infinite variety of experiential possibilities no longer evoked by the circumstances to which the signal was initially intended. At this point signals would have become signs, with the ability to expand their contextual potential in an essentially metaphorical manner, and in so doing extend the conceptual horizons of *Homo sapiens* indefinitely. It is the connotative function of signals and signs, then, that needs to be explored to determine how humans have capitalized on this fundamental means for making reference via language.

1.3

The concept of reference
in a self-organizing system

It should be clear from the previous discussion of the evolution of consciousness that what we are talking about here are what are called *self-organizing systems*. Such systems are not hard-wired, top-down, rule-governed structures but are dynamic somatic selection systems whose underlying function is to correlate new experience with old, thereby assuring that continuity and change proceed hand in hand in a relatively regulated manner. The regulatory mechanism in such systems was proposed some time ago by the eminent bio-anthropologist and systems theoretician Gregory Bateson, who introduced the concept of *stochastic process* to our understanding of how living systems operate to bring order out of potential chaos in such a dynamic structure. Bateson considered all mental process, from evolution to embryology, and anything that falls under the rubric of learning, to be fundamentally defined as a stochastic process. "Both genetic change and the process called learning (including the somatic changes induced by habit and environment) are stochastic processes. In such a case there is a stream of events that is random in certain aspects and in each case there is a nonrandom selective process which causes certain of the random components to 'survive' longer than others. Without the random, there can be no new thing." (Bateson 1980: 163)

This type of evolutionary process, involving both determinism and chance, is known as "order by fluctuation" in the physical sciences. When a complex physical system is subject to perturbations from the outside, the stress can cause the value of certain variables to move away from equilibrium to their threshold levels, at which point instability occurs and the least fluctuation can then cause the system to be driven into a new state. Such newly organized states are known as "dissipative structures" and have been confirmed in both chemical and biological reactions. As Allen and Sanglier describe this process in chemistry, it "contains both deterministic mechanisms (the chemical equations) and stochastic, random effects (the fluctuations) and it is these latter that are of particular importance when the system is near to points at which a new organization may emerge. These points are called bifurcation points." (Allen and Sanglier 1980: 111)

This view of how systems spontaneously evolve has been made popular with the notion of "tipping points" (Gladwell 2000), and it is crucial to our appreciation

of how living systems operate. In such systems the history of the organism deter-mines the "state of mind" in which it finds itself at any given moment. Then, with the addition of a random component, the internal dynamics of the system sponta-neously generates new structures, while at the same time the feedback mechanism of selection keeps the system in check. The existence of such a bi-directional process assumes special significance when it comes to our understanding of the contextualization process in language. Without the requisite feedback mechanism, the greatly increased memory capacity available to *Homo sapiens*, which allowed its signaling behavior to be activated offline, would have become utterly chaotic, given the open-ended choice of contexts available to a connotative system no longer constrained in real time. (Bouchard 2013: 153–4)

We shall propose just how such a process operates in the case of language in a moment, but first we need to take a closer look at the nature of reference that is being described here. Implicit in the connotative view of how signs generate meaning in a self-organizing system is the concept of *self- reference*, understood in the sense of how living systems develop and maintain their structure by spontane-ously producing contextualizations of their own components – the process known as *autopoiesis*. (Capra 1996; Maturana and Varela 1980; Luhmann 1990; Zeleny, ed. 1980; Sangster 1994) An autopoietic system is one that is energetically open but organizationally closed, that is, open to energy from the outside but closed to information and control. Such systems are physically or energetically open ones that require a continual flux of matter and energy from their environment to stay alive, but they are organizationally closed in the sense that they do not process any information in terms of discrete elements existing ready-made in the outside world to be picked up by the cognitive system, as the Cartesian view of language would suggest they do. Rather, they interact with their environment by continually modulating their own structure – that is, by establishing the "differences which make a difference" informationally to the organism in question. (Bateson 1972: 271–2) As Niklas Luhmann has phrased it, "Autopoietic systems, then, are sover-eign with respect to the constitution of identities and differences. They, of course, do not create a material world of their own. […] But whatever they use as identi-ties and differences is of their own making. In other words, they cannot import identities and differences from the outer world; these are forms about which they have to decide themselves." (Luhmann 1990: 3)

A frequently cited example of how such systems operate is provided by the manner in which termites build their nests. The process begins with a completely random phase in which deposits of mud are in no way correlated with one an-other, and culminates in the erection of regularly spaced walls and pillars. At some point in the random distribution of deposits a coordinated phase begins, "when by chance, a particular point exceeds a threshold size, after which it polarizes the

termites' activity, inhibiting deposits over a certain characteristic distance, and in consequence enhancing its own growth." (Allen and Sanglier 1980: 114–5) Most importantly, what triggers the second phase is the accumulation of a pheromone that the termites mix with the mud they carry. The termites' activity is thus governed by the recognition of a certain concentration of their own pheromone that eventually results in a selective feedback process controlling the termites' activity and producing a product in the outside world that they can then inhabit. The process is thus not only self-organizing, it is self-referential in the sense that tokens of their own bodily structure and the feedback from them are what produce the end result. While this behavior may be instinctual rather than intentional, the point remains that this is a form of non-verbal communication with essentially the same characteristics as far as the nature of reference is concerned.

It is in just this sense that we should understand the referential capacity of the linguistic sign. Since reference in language is connotative, as we have insisted, it does not point outward to events and things in external reality but inward, contextualizing the properties inherent in the sign itself. The actual vocalizations that we experience in speech, therefore, are properly viewed as tokens of the conceptual essence of a sign, contextualizations of the qualities already present in the sign's underlying meaning. *Contextualization* should be understood as a technical term here, as the property that allows humans to use signs to express aspects of their experience of reality that are *not* immediately evident in things themselves, bringing into awareness the potential inherent in the sign's own meaning. Where else do "colorless green ideas" come from if not from the ability, unique to humans, to contextualize three words like these in a single, virtually poetical string to create a reality that supersedes anything we may think we know about the real world? In this respect, poetical language itself represents nothing less than the quintessential application of the self-referential potential inherent in the very nature of the linguistic sign, which is precisely what allows humans to expand their experience of reality indefinitely. So-called "normal" language use, therefore, is simply the more common aspect of this capacity, the aspect that we experience in the course of our customary daily activities, and should not be the grounds upon which we determine whether or not a sentence is meaningful.

Given what we have just described, I propose that the stochastic process of human speech production and comprehension operates in the following manner. What we actually observe in the process of communication is that speakers spontaneously produce utterances by contextualizing the underlying meanings of the signs chosen. Hearers then react to the contextualizations presented in a selective manner, either by reinforcing and adopting them because of their experiential value or discounting them as not having any value beyond the given situation. Languages evolve in this way naturally, simply through the process of

social interaction. There is clearly a scale of probabilities involved, where some utterances, for example poetic ones, tend to be one-off contextualizations that rarely get reinforced only because they lack applicability, not because they aren't prime examples of the system at work. The majority of contextualizations do receive some degree of reinforcement, and some of these tend to get reinforced significantly more than others in certain contexts. This is precisely what produces our sense of polysemy, the sense of different meanings that exists at the alert end of the spectrum of consciousness. The greater the attention given to a sign in a particular frame of reference, the more likely we are to think of it as a separate meaning, one that expands our cognitive horizons.

So the question becomes: is this rational sense of difference ultimately governed by some pre-linguistic cognitive processes, or is there not a more profound, supra-rational sense of difference governed by the structure of the signs themselves and our ability to contextualize them in an essentially probabilistic manner that explains how cognitive categorization ultimately works? If the latter, then our cognitive categories of experience should more properly be looked upon as *emergent properties* of the actual use of signs. Emergence has been defined as "the arising of novel and coherent structures, patterns and properties during the process of self-organization in complex systems". (Goldstein 1999) Accordingly, we may say that the contextualization of sign relations in language, being a process that takes place offline, produces the metaphoric expansion of the meaning inherent in those relations, thereby spontaneously extending our cognitive awareness and creating new conceptual domains. We would then want to determine the ultimate nature of the system in higher-order consciousness that has such unique generative power. That is the subject to which we now turn, to justify the existence of a supra-rational or transpersonal level where the sign relations of language reside.

Higher-order consciousness reexamined

In his remarkable book on the origin of art and religion, David Lewis-Williams discusses in some detail Edelman's thesis on the evolution of higher-order consciousness, agreeing with his description of the neuro-biological process that underlies and explains it. But, he suggests, it does not go far enough. In his words, Edelman's view of higher-order consciousness "concentrates on the 'alert' end of the spectrum of consciousness and overlooks the autistic end." (Lewis-Williams 2002: 186) While the alert end is the province of rational thought, the autistic end, as he calls it, is vital to our appreciation of higher states of consciousness, for that is where our myths and dreams reside, as well as our need to express them in the form of art and religion. Briefly, his thesis is that the impulse to create art was spawned by the need of early *Homo sapiens* to express its newly acquired ability to remember its dreams in the form of vision quests realized deep inside the caves in places like Western Europe. This was made possible by the evolution of the brain functions Edelman describes, able to hold on to images *in absentia* at an autistic or supra-rational level of consciousness where the mind operates on its own internal states, bringing images from past experiences back into conscious awareness and recording them in the darkest recesses of those caves, far removed from any external stimuli.

We should think of higher-order consciousness in general, Lewis-Williams insists, not as a uniform state but as a continuum, a spectrum progressing from outward to inward states. At one end of the spectrum is our waking consciousness, which then gives way to problem-oriented, rational thought, and ultimately to supra-rational or altered states of consciousness. All parts of the spectrum, he insists, are "equally 'genuine' … generated by the neurology of the human nervous system … and wired into the brain". (Lewis-Williams 2002: 125–6) Most important of all, since the full spectrum of consciousness is integral to human brain morphology, we do not have the luxury of ignoring the supra-rational end that is farthest from its alert or waking states, either because we think we have not personally experienced altered states of consciousness or because we equate them with mysticism and treat them as unscientific. They are a biological reality which virtually all of us have indeed experienced in the form of dreams; and some of the less fortunate of us can also attest to, having been subjected to hallucinations

brought about by conditions such as visual migraines, Parkinsonian illusions, or various psychological traumas.

While we may think of dreaming as a normal activity of the human brain, whereas experiencing other altered states of consciousness like hallucinations may seem to represent aberrations in brain functioning, all of these experiences are in fact evidence of the brain reacting normally at the supra-rational level to the lack of sensory input. The reactions of the mind at this level are anything but pathologies; they give us a unique window into the brain operating on its own internal states, the evidence for which we have precisely because the evolution of consciousness in man has given us the capacity to remember and to converse about such images after the fact. (This is what distinguishes the dreaming activity of man from that of dogs, for example.) The physical symptoms that set hallucinations in motion may be abnormal, producing sensory deprivation, but the brain's activity when subjected to these conditions is functioning exactly as it should, creating images induced by the brain's own activity in the absence of any external stimuli. As Oliver Sacks noted in his book on hallucinations, the absence of stimuli from the outside can contribute significantly to the mind producing images involuntarily: "the deprivation of normal visual input can stimulate the inner eye instead, producing dreams, vivid imaginings, or hallucinations". (Sacks 2012: 34) Echoing Lewis-Williams, he notes that "Hallucinations have always had an important place in our mental lives and in our culture. Indeed, one must wonder to what extent hallucinatory experiences have given rise to our art, folklore, and even religion". (Sacks 2012: xii)

Indeed, there is a whole field of scientific investigation into phenomena at the supra-rational level of consciousness, known as transpersonal psychology. Since the psychological properties at such a level are by definition not accessible to immediate awareness, we have to look for evidence elsewhere than in conventional studies which investigate relatively more concrete and measurable cognitive phenomena and thereby keep our inquiry into the nature of consciousness prejudiced towards the alert side. One of the earliest researchers in the area of transpersonal psychology, Stanislav Grof, has documented in depth the transpersonal dimensions of human experience. (Grof 1985, 1993, 1998, 2000) What legitimizes these studies is the high degree of consistency with which subjects subsequently report on the experiences they have had when in an altered state of mind, and this consensual validation demonstrates that the phenomena reported must be ontologically real. Not only are these descriptions consistent from one subject to another, they are also highly abstract and metaphorical, transcending the constraints of ordinary logic. The very nature of these descriptions, therefore, provides further evidence of a higher order of consciousness whose properties differ in significant respects from those of rational thought.

So where does language fit into this picture? One obvious way this issue has been framed is to consider the relation between thought and language. Since other species certainly appear to have thoughts, it would seem logical to conclude that thought precedes language and that the language faculty would therefore be derivative. In this view, language would have originated as a vehicle for structuring thought and giving it communicable form. In his recent book, Ray Jackendoff (2012), channeling Kahneman (2011), considers human thought to be composed of two systems: System 1 represents unconscious and unstructured intuitive thought, while System 2 consists of conscious, rational thought. Language in this view is regarded specifically as a component of System 2, "riding on top of" System 1, creating "handles" and "tags" – communicable sound forms that give intuitive thought a rational structure.

There are two points that need to be challenged with respect to this interpretation, however. The first is obviously that language is relegated entirely to the alert or rational side of human consciousness (System 2), being the vehicle that gives intuitive thought a discrete and linear structure. (Jackendoff 2012: 214) System 1, for its part, is consequently not just unconscious, which it certainly is, but merely intuitive as well, devoid of any formal structure of its own.

What if, on the other hand, we were to assume that what is called System 1 is actually the supra-rational side of human consciousness where the signs of language possess a structure of their own? The system that signs comprise at this higher-order level would represent the ultimate source of our ability, via the contextualization process previously described, to establish the categories we operate with at the rational level of thought. Suppose, for example, that the evolution of the language faculty put the principle form-meaning relationship not at the rational but at the supra-rational level, where the relations between signs constitute a system where a difference in form actually does systematically constitute a difference in meaning. This would not be the kind of meaning that appeals to our rational sense of difference where signs appear to be polysemic, but a far more abstract, archetypal type of meaning, embodied in the relations between signs in their precontextual state at this more profound level.

This scenario assumes that once primate signals were freed from any necessary association with the immediate situation that triggered them, not only did percepts become associated with concepts outside of real time, but the signals themselves became associated offline with other signals, creating a far more efficient relational system for converting signals into signs. Let us consider how such a structure could have evolved, given the living conditions in which early hominids found themselves.

Having obtained bipedal posture would have put them at a significant disadvantage physically because it would have seriously limited their ability to stay out

of harm's way surrounded by animals bigger and faster than themselves and no longer protected by life in the trees. This physical disadvantage would have had to be overcome by a corresponding cerebral advantage if the species was to survive. In short, a tipping point would have been reached, and the hominid mind would have had to evolve into a new state or the species would cease to exist, as the fate of the Neanderthals suggests. Vastly improved communication skills would have been the key, both manual and oral. In the first instance, the freeing of the front limbs would have provided a unique opportunity for hand signaling, which could well have been a precursor to the eventual development of improved oral skills. These latter skills would have been greatly facilitated by the concomitant lowering of the laryngeal tract, allowing for a significantly larger repertory of sounds with which to distinguish one sign from another. At some subsequent point, however, the increased repertory of individual signs would have reached its own tipping point, a point at which simply adding more signs would overload the system. In order for it to continue to grow, the system would have to evolve into a new, more efficient state, one that was already predicated upon the inherent nature of the newly evolved sign itself.

Once primate signals had been taken offline and converted into signs, the system could easily expand by relating one sign to another at the higher-order level of consciousness that evolution had provided. It would no longer be the individual signs that ultimately generate meaning but the relations between them. A system composed of eight components, for example, can be structured in terms of just three binary relations ($2^3 = 8$); and if the essence of the system resides in the relations rather than the components themselves individually, the capacity of the system can increase exponentially. Moreover, the differences in meaning conceptualized in the relations between signs at this pre-contextual level would be of another order altogether than those differences we associate with individual signs once they are contextualized, once they appear as contextual variants at the rational level. They would necessarily be far more abstract, *conceptual archetypes* as we will call them here, embodied in the relations between signs at the supra-rational level of consciousness.

This is essentially the rationale that European structuralism utilized to investigate the structure of language at the levels of both sound and meaning. The Jakobsonian model of structural relations, however, raised a number of issues that have proven over the years to be controversial, and these issues are clarified and responded to in the next section.

1.5

The locus and function of monosemy
in human consciousness

One of the problems scholars have had accepting the monosemic principle stems from the way in which it is presumed to apply. It has been said, for example, that it is methodologically unsound: "It gives the impression of a circular argument: a particular 'general meaning' is usually established on the basis of generalizing (abstracting) from a set of ascertainable contextual meanings which in turn are all claimed to be derivable from precisely that general concept." (Birnbaum 1984: 414) This critique assumes, however, that monosemy is essentially a class-meaning concept, where the different meanings we perceive at the rational level possess an equally rational common denominator that can simply be extracted from them. Since these general meanings are necessarily abstract, they then get criticized for their lack of specificity. As Uriel Weinreich put it at the time, this "condemn[s] linguistic inquiry to perpetual informality" because it "empties the notion of class meaning of all content". (Weinreich 1966: 469) How, the argument goes, could one subsume, as Jakobson did in his analysis of the Russian case system, all of the variation associated with the genitive case in Russian under a single rubric, when the case is used to signify not only the 'of' relation common to many languages (e.g. English 'roof of the house') but also such seemingly disparate senses as the object of a negative verb; the object of a verb denoting wishing, striving for, and so forth; the case of a noun phrase with a number greater than one; and even the subject of an existential verb under negation? Still others have asserted that one cannot attribute all of the contextual variation associated with a given sign to purely contextual factors when many of the different uses appear to be context independent. As Tyler and Evans have noted with respect to the preposition 'over' in English, "It is difficult to see what kind of contextual knowledge would allow us to derive the spatial meaning of 'above', the non-spatial meaning of 'again', and the non-spatial sense of 'finished', all from a single abstract meaning". (Tyler and Evans 2003: 6) This critique assumes the cognitive linguistic position that the various contextual applications of a sign should be derivable by a logically transparent process of pragmatic inference. We will address each of these concerns, and others, in the course of this section.

One is certainly justified in criticizing the monosemic approach if all it is doing is applying the notion of class meaning, of a set and its members, and identifying a property or properties that are common to all the members. This assumes that the differences in meaning we perceive at the rational level of consciousness possess an equally rational common denominator from which they are derived. But the locus of monosemy does not reside at the rational level, where we identify and measure properties at the alert end of the spectrum of consciousness. Once the monosemic character of linguistic signs is more properly understood to be a function of the relations between signs at the supra-rational level, the seemingly polysemic nature of linguistic signs that appeals to our rational sense of meaning can be explained as a function of the contextualization process that converts these underlying relations into individual experiential entities.

Most importantly, this process is not a formal one where the differences in meaning associated with words in context would be derivable algorithmically. It is a highly fluid and probabilistic one that is both open-ended and fundamentally directionless. It is a two-way process, one where the speaker produces contextual possibilities in a completely spontaneous manner in accordance with his or her experience and the nature of the situation at hand, and hearers infer the intended meanings in an equally flexible and probabilistic way according to their experience and the context, both linguistic and situational, in which the message is received. Since hearers are by definition also speakers, their use of inductive inference is necessarily of the same order as that of speakers when producing utterances: not a formal or logical one but an equally spontaneous and fluid one that seeks to respond to the motivation or intent of the speaker in contextualizing the underlying meanings of the signs involved.

Members of the Columbia school, one of the proponents of the monosemic approach cited in the introduction to this volume, make much the same observation about the fluid character of the referential process. They start with the assumption that the underlying meanings of linguistic signs are by nature imprecise, being projected only in accordance with the contexts in which they may be used. The different senses we associate with the use of a sign in context, furthermore, are not themselves structured. They are possibilities that hearers infer from whatever context, linguistic and non-linguistic, in which the sign occurs. Consequently, we do not need to assume that linguistic signs are by nature polysemic nor that the process of inference is a logical one. Both the production of contextual meanings and the inferential process involved in interpreting messages are unstructured and essentially spontaneous. Based on these assumptions proponents of the Columbia school postulate general meanings based on an unprejudiced analysis of the range of contexts in which a given form occurs and the senses that are derived from those contexts. In a recent publication, Nadav Sabar has shown that not only

grammatical signs but also lexical ones can been seen to have a general meaning when their combinability with other signs is given a sophisticated statistical analysis. (Sabar 2018) To date, however, these studies have been limited to the analysis of individual grammatical and lexical items, and there is no suggestion that there may be a structure to the general meanings themselves. Thus there is nevertheless a significant difference between their approach and the one being presented here.

When Jakobson presented his analysis of the Russian case system, he was at pains to describe the monosemic essence of each case as a *Gesamtbedeutung*, a higher-order conceptual invariant that defines a case specifically in terms of its relation to the other cases in the conceptual system in which it participates. (Jakobson 1958) Jakobson was influenced at the time by the development of communication theory, the mathematical approach to the ways in which information is processed, the movement that introduced the concept of binary oppositions (bits of information) and gave birth to the era of computer science. (Jakobson 1961) His notion of general meaning was thus a properly relational construct, one which viewed the ultimate nature of linguistic signs in terms of a system of binary relations at a more profound level of consciousness, where one sign was marked for a given "feature" and it opposite member unmarked. Once we shift the concept of general meaning, of the monosemic essence of sign relations, from the rational to the supra-rational level, we will be able to identify conceptual features, genuine archetypes of meaning, that do account for the various seemingly disparate contextual applications of linguistic signs, and in so doing gain an entirely different perspective on the nature of human consciousness at this most profound level.

One cannot overestimate the importance of treating language as a system of relations, introduced by Ferdinand de Saussure at the turn of the previous century. The concept of relation remains vital to systems thinking in any number of disciplines today. Where it used to be commonplace to recognize that "the whole is more than the sum of its parts", we now realize what quantum physics has convincingly demonstrated, that ultimately we are not dealing with parts at all, since so much depends on the intervention of the observer. What we perceive as a part, an object at the rational level of consciousness, is actually part of a *pattern of probabilities* in an inseparable web of relations. The shift from objects to relations, from parts to patterns, is a fundamental principle of systems thinking. (Capra 1996) It is just such structures, we will argue, that underlie the human capacity for producing meaningful utterances utilizing the form-meaning bond inherent in linguistic signs and their relation to one another at the supra-rational level of consciousness.

Indeed, it could be quite enlightening to take a quantum view of how meaning is produced in language. Quantum theory tells us that our sense of reality consisting of particles, of objects that can be located and measured at the rational level, is actually the result of the collapse of the wave function induced by the conscious

intervention of an observer. Experiments demonstrate, moreover, that this process also operates in a stochastic manner, that what we can actually measure are probabilities, since the act of measuring itself has a bearing on the outcome of the measurement. Consider, then, the possibility that the relational structure of language that exists at the supra-rational level of consciousness is in some sense its wave function, and that the intervention of the speaker in choosing a sign on one or the other side of a conceptual relation and inserting it into a specific context is equivalent to the collapse of its wave function, a process which likewise occurs, as we have shown, in a stochastic, that is to say essentially probabilistic, manner. As the theoretical physicist Amit Goswami has asserted, what underlies the material manifestation of particles in the physical world is a higher-order domain of reality, one composed of Aristotelian *potentia* that should be understood as Platonic archetypes (Goswami 1993: 59 *et passim*) Could this be the same archetypal structure that we observe with the sign relations of language, which also represent potentialities at the supra-rational level of consciousness, as we have suggested?

There is no question that the concept of relation was a cornerstone of structuralist thinking in the twentieth century. It was Jakobson again and his Russian colleague Nikolaj Trubetzkoy, working initially in the area of phonology, who developed the theory that individual sounds in language constitute a structure where one sound is related to another by a system of "features", binary relations that defined the ultimate nature of the system. Thus a series of individual sounds like the consonants *p, t, k*, are related to their counterparts *b, d, g* by a single feature of voicing, the latter said to be "marked" and the former "unmarked" for that feature. These were genuine empirical observations based on measurable acoustic and articulatory parameters, thus validating the premise that the sounds of language were indeed related in terms of binary oppositions. Though the notion of binary relation was certainly inspired by work in other disciplines, it is demonstrably evident that it constitutes a measurable property intrinsic to the underlying structure of language as well.

The problem that investigators have had in accepting the binary principle stems in large part from the fact that linguistic signs rarely display a binary character at the level at which we observe their occurrence in individual acts of communication, where relations such as gradience and so-called fuzzy categories appear to be more evident. This problem is especially vexing when the principle is extended from the material side of the linguistic sign to the conceptual side, from the structure of sound to the structure of meaning. It is one thing to determine what physical properties speech sounds evince, measure them, and discover a set of physical constants that defines their relation to one another at a more profound level of consciousness; it is quite another to attempt this in the conceptual domain when what one is trying to define is not simply a common denominator or

prototype in the class-meaning sense but a properly relational construct at this higher-order level. Since any proposed features of this type must by definition be highly abstract if they are representing mental constructs (archetypes of meaning) at a supra-rational level of human consciousness, trying to define them in something other than impressionistic terms is to say the least a challenge. So the question becomes: can we find scientifically acceptable ways to define and verify the existence of archetypes of meaning at this more profound level, not only in the structure of linguistic signs but in other domains of the human mind operating at this level? Language would then more properly be understood as participating in an archetypal structure that underlies the nature of consciousness generally. That is the challenge we have accepted here.

Even those who might otherwise agree with the monosemic principle, however, have not always acknowledged its applicability as a theory of reference generally. It seems to apply best to the structure of signs at the end of the spectrum of consciousness farthest removed from our immediate awareness, in the realm of grammatical meaning where the signs involved appear to have little to do with how we perceive events and things in external reality. Grammatical categories seem to represent more abstract, meta-linguistic kinds of meaning to begin with. Gender assignment in languages, for example, has little to do with sexual identification, being applied equally to inanimate and animate phenomena; and tense categories do not necessarily correspond to our sense of physical time, as we will demonstrate in some detail shortly. Lexical signs, on the other hand, verbs and especially nouns, are more easily perceived to be making reference to specific aspects of reality, the differences among which strike us as too evident and convincing to be analyzable in terms of general meanings.

Indeed, Charles Ruhl in his treatise on monosemy articulated what he called a Vocabulary Principle, whereby closed minimal classes of signs, such as grammatical categories and functional words like prepositions, reflect primary, unconscious order remote from reality and therefore more likely to be subject to the monosemic principle. Open maximal classes like the lexicon, on the other hand, reflect secondary, conscious order related more directly to reality and therefore less likely to be monosemic. (Ruhl 1989: 21) None other than Roman Jakobson himself claimed that the grammatical pattern of language, which he studied repeatedly from the monosemic point of view, constituted a meta-linguistic phenomenon that was distinct from "the ontological problem of reference". (Jakobson 1971: 265, 577) He did not believe (personal communication) that the patterning found in grammatical systems could be extended to the study of lexical meaning.

Jakobson viewed language as having six distinct functions, each corresponding to one of six factors that constitute the totality of the act of communication. In this scheme, the referential function defined the informational context of the act,

whereas the grammatical or metalingual function operated with the code of language itself. While not arguing with the value of this typology, we take a broader view of the notion of context and therefore of the very concept of reference in this study. In this view, the linguistic sign can be shown to display a uniform and over-arching capacity for contextualizing its essence in higher-order consciousness regardless of the communicative function it is serving. Once we leave the realm of our rational existence and seek commonalities at the supra-rational level, meaningful properties can be seen to emerge that unite the grammatical and lexical spheres, displaying all the characteristics of archetypal constructs that give content to consciousness at this deeper level. Indeed, what we find is that metalingual constructs are by no means limited to that area alone but in fact, as the domain that references the code of language itself, ought to and do underlie the contextualization process writ large, ultimately determining how the essence of sign relations is contextualized as a fundamental mental process. And when this process is applied in the lexical sphere, our assumptions about the nature of lexicalization itself are necessarily raised to another level, lifting the very notion of reference and the concept of contextualization out of the realm of the sign-object relation and situating it where it should belong, at the more profound level where the ultimate archetypes of meaning reside.

Also at that time, when the concept of "linguistic relativity" was all the rage in anthropological linguistics, it was assumed that if meaning is inherent in the signs of language – if monosemy rather than polysemy is the rule – then the structure of signs in one language must lead to a different and irreconcilable world view from that of another. If true, this would certainly invalidate any concept of higher-order consciousness where universals of meaning reside. The example often cited was the Hopi language which, because it does not have signs that correspond to the Western concept of time expressed in terms of past, present, and future, must therefore lack a concept of time. The problem with this reasoning, however, is that the very "concept of time" which the Hopi were assumed to lack is only the linear sense of time that appeals to our rational take on reality. It does not reflect the way in which time might be conceived by both languages at the transpersonal level of consciousness. When one takes this critical step, then a more profound sense of time can be discerned, one that operates on the same principle in both Hopi and Western languages.

Consider, for example, the fact that the signs representing the past tense in English express past time as only one of their contextual meanings, the others being non-temporal hypothetical, conditional, and subjunctive senses – e.g., 'if he were a doctor', 'I would if I could', 'wish you were here'. It is not difficult to see that the true general meaning that can be inferred from this range of contextualization is an abstraction best defined as a distancing from the "now", one that may be expressed either temporally or not. That is exactly what the Hopi sense of "time"

expresses in its own way as well. The Hopi concept of time has been described as a distinction between the "manifested" or objective and the "unmanifested" or subjective modes of being (Molotki 1983), in keeping with the common understanding of time in indigenous cultures as a spatiotemporal relation between the "now" of the material world (the present) and the "not now" of the spiritual world, the latter encompassing both past and future time.

What we should conclude, therefore, is that although the signs of one language certainly differ from those of another, they are all devices for contextualizing one and the same inherent conceptual reality at the most profound level of consciousness, which in this case is nothing less than the time-consciousness of the species that evolution produced – the ability to conceive of a "not now" distinct from the "now", the neurological foundation for which we discussed at the outset of this study. This is the type of conceptual property we should be investigating if we are to understand the ultimate functioning of cognitive structures in the human mind and how they are embodied in the signs of language. We will have much more to say about the archetypes of time-consciousness and the way they are embodied in linguistic signs when we begin analyzing prepositions in Part 2.

One of the oldest arguments against the monosemic principle involves the existence of homonyms which, it is said, disproves any theory that a difference in sound form signifies a difference in conceptual content in any systematic way. The English language, for example, is fertile ground for jokes and puns precisely because there are so many words that have the same sound form but clearly distinct meanings. Some estimates put the existence of homonyms in English as high as thirty percent of the vocabulary. Once again, however, this argument fails to consider the role that signs play in higher-order consciousness. Once we acknowledge that the meaning of a sign ultimately depends on its relation to other signs in the system that pertains at the supra-rational level, we can appreciate that communication is rarely hindered by the existence of homonyms because they belong to different relational sets at this higher level of cognitive structure. Thus the pronoun 'I' in English participates in an obviously different set of structural relations and contextual applications than the noun 'eye'; the pronoun 'you' in a different set than 'ewe'; and so forth. In the end, what matters is only that communication not be impeded – that is, a language can tolerate a relatively high degree of homonymy so long as it does not create confusion. If it did, the system would reach its tipping point and have to evolve into a new state. Obviously, that has not happened even in a language with as fertile an array of homonyms as English. Even a word like 'bank', whose two uses – bank for savings and bank of a river – are conceptually relatively close, are normally contextualized in circumstances that make disambiguation evident. So while a situation could still be found that would permit a clever pun, it would immediately be recognized as such.

Finally, let us consider the position of usage-based grammar, whose proponents have argued specifically against a structuralist approach. Grammatical meaning cannot be explained with binary oppositions, it is claimed, but reflects the language users' experience with particular situations. (Bybee 2010) "Since our experience of the world is open-ended, the meaning of linguistic expressions cannot be adequately analyzed by means of a restricted set of semantic features; rather what is needed is a dynamic theory of meaning, in which the semantic features of linguistic expressions are determined by their use in different situations and contexts." (Diessel 2011: 837.) It should be clear from everything we have already said about the concept of contextualization in this study, however, that this is a false dichotomy. It is an either-or proposition that does not acknowledge the inherently dynamic nature of the semantic features that define sign relations in higher-order consciousness as conceptual potentialities capable of producing the open-ended expansion of contexts. We have insisted that the contextualization process must be a two-way street, a stochastic or somatic selection process that also includes the indispensable role of feedback from users. It is the frequency with which users respond to the contexts produced that gives certain ones significance over others, just as usage-based grammar suggests. The ultimate outcome of this process as we have described it is precisely to produce the conceptual categories we operate with, as emergent properties of the very use of signs. So we can only agree with the importance of the users' role as a vital ingredient in the process, so long as the equally fundamental role of sign relations as potentialities is also taken into account.

Let us consider in the next section what all this implies about the ultimate nature of meaning in language.

The ultimate nature of meaning

We have been insisting all along that the referential function of linguistic signs in a self-organizing system is connotative, not denotative. Aside from their relatively specialized iconic function (e.g., onomatopoiea), signs do not create a mirror image of elements in external reality; and only in their narrow indexical function (e.g., personal pronouns) do they actually point. Their essential function as symbols proper is to facilitate the way in which we experience reality, and in order to fulfill this function in a substantive way, their meaning must by its very nature be flexible and their contextual potential forward-looking, capable of creating new cognitive realities that respond to the continuing needs of the organism. Accordingly, our concept of what constitutes the underlying meaning of the linguistic sign in its primary symbolic aspect cannot be as a fixed or static construct. Its referential capacity must be open-ended.

The American philosopher and pragmatist, Charles Sanders Peirce, understood this well. (For an excellent expose of Peirce's thought in this regard, see Menand 2001: Part 5, Section 6.) He too based his philosophy, and ultimately his theory of signs, upon the conviction that the mind cannot be a mirror of external reality. Signs do not refer to things: the very notion of a thing is itself a sign, a mental representation that Peirce termed an "interpretant". To know something is to form a mental representation of it. To signify the act of knowing he coined the term *semiosis*, the process of producing meaning by the use of signs, from which has evolved the field we know today as semiotics, that encompasses not just language but the entire scope of meaning-making in the mind. In this view, sameness and difference are not things that exist in the world, they are what is created in the mind. And for this to be the case, what constitutes sameness and difference at any given moment must always necessarily be changing as a function of experience. The knowledge that is embodied in the use of signs cannot be fixed or static but must be capable of evolving in order for the organism to survive. Moreover, this form of evolution must be fundamentally probabilistic, establishing norms or habits, as Peirce called them, that fluctuate with the evolution of the species at the macro- and the social life of the individual at the micro-level. What this implies, in the final analysis, is nothing less than that the meanings embodied in the symbolic use of signs must by their very nature be open-ended, or in Peirce's

words, knowledge "swims in a continuum of uncertainty and of indeterminacy". (Peirce 1897: 1/171) This constantly fluctuating principle, which we have previously identified as a stochastic process, Peirce made into a universal law, a general law which by its very nature cannot be fully realized – a potentiality that depends on future experience for its continuing realization. Herein lies the essence of what we think of as the creative use of language.

Thus the underlying meaning of the linguistic sign must be in some sense indeterminate, capable of producing the metaphorical expansion of contextual possibilities inherent in its very nature. It is because general meanings are indeterminate that they are capable of projecting their essence onto whatever situation the speaker chooses, thereby assuring that the system will continue to evolve spontaneously. Once we recognize that it is the structure of linguistic signs themselves that is embodied, is an organic property of mind in its own right, then the fundamentally metaphoric nature of reference will follow naturally from the very contextualization process required for the system to remain alive, a process that constantly creates new cognitive domains for its expression. We will have more to say about indeterminacy and the role of metaphor in the next section, where we focus on the role that metaphor plays in cognitive linguistics.

It stands to reason, therefore, that a system with this kind of productive power does not, and should not, lend itself to predictability in the narrow sense of the term. While we should be able to account for the contexts in which a sign does occur, and explain why it does not occur in certain others, the very nature of the sign allows for the possibility that there may yet be contexts in which what seems to be unthinkable today may become commonplace tomorrow. It is the strictly probabilistic nature of the contextualization process that ultimately determines which contexts occur, have occurred or will occur. What we can do to address the issue of predictability is to demonstrate, as we will throughout this study, not only why certain combinations of signs do or do not occur at present, but also what is in the nature of the conceptual archetype underlying a given sign that makes it more or less likely to combine with certain others.

Provided that we maintain the integrity of the linguistic sign and its capacity to structure thought at the supra-rational level of consciousness, the categories we arrive at will inevitably constitute phenomena that lie beyond conventional cognitive analysis. They will be more in keeping with the Jungian concept of symbol, which Jung defined as "a term … that possesses specific connotations in addition to its conventional and obvious meaning. It implies something vague, unknown, or hidden from us". For Jung, a symbol "has a wider 'unconscious' aspect that is never precisely defined or fully explained. […] As the mind explores the symbol, it is led to ideas that lie beyond the grasp of reason". (Jung 1964: 21–1)

These supra-rational ideas are what Jung termed *archetypes*: universal images or patterns of thinking that constitute the "collective unconscious". They are not rational constructs, not something that can be associated as such with any particular aspect of experience. They are virtual images, symbols that create the possibility of a certain type of perception or action. They are potentialities that lie behind our ability to experience reality, often in Jung's view corresponding to the images that populate our myths, which are themselves clear indications of the human mind operating at the transpersonal level. The life of the individual, according to Jung, consists of relating such symbols with experience in the real world, of contextualizing them, to use the terms of this discussion, in the event-space where experience takes place. It is only through this contextualization process that the archetype enters our conscious awareness and becomes a creative force for behavior. Jung's own methodology for dealing with patients, therefore, consisted of learning as much as possible about the experiences an individual has had to determine how that individual has contextualized, in our terms again, an archetype or complex of archetypes. This process frequently involved exposing the images that occur in the dreams that populate a person's psyche at the supra-rational level of consciousness. Hence his extensive work with the symbolic import of dreams.

Jung arrived at his theory of archetypes in part because he became disenchanted with Freud's method of interpreting dreams. He considered Freud's use of symbols to be too superficial, interpreting things on the personal rather than the transpersonal level, especially when he would equate a dream image with a phallic symbol. In Jung's mind, Freud's emphasis on sexual imagery was too concrete, too tied to the mores of the times. Archetypes, on the other hand, represent qualities far more abstract that define the true nature of a symbol as a construct whose essence lies beyond its more evident meaning. We would be remiss, however, if we did not note that Jung also disparaged what he called a sign on much the same grounds. That was because he equated signs with visible images that denote nothing more than the objects they are intended to represent, like trademarks, badges, or insignia. For him "the sign is always less than the concept it represents, while the symbol stands for something more than its obvious or immediate meaning." (Jung 1964: 20, 55) Clearly, what we are calling a sign here is equivalent to Jung's use of the word symbol, and its general meaning akin to his notion of archetype.

The twin concepts of *archetype* and *potentiality* have been drawn together as well by the theoretical physicist Amit Goswami in his description of quantum reality referred to briefly above. Goswami espouses what he calls monistic idealism, a philosophy that merges Eastern thought with Western science and examines the place of consciousness in the universe. In the materialist or Newtonian view of matter, consciousness, to the extent that it is said to exist at all, is considered an epiphenomenon of matter, a by-product that by definition cannot therefore be the

source of our awareness of matter. In monistic idealism, on the other hand, objects are already in consciousness as "primordial, transcendent, archetypal possibility forms" (Goswami 1993: 84) and it is the collapse of their wave function by the act of observation that brings them into awareness.

Goswami asks us to reconsider the paradox of Schroedinger's cat, which may be either dead or alive inside the box. To the materialist, the status of the cat inside the box is unknowable; you have to open the box at the end of the experiment to see for yourself. In quantum theory, on the other hand, both outcomes are already in the box in what is equivalent to the cat's wave function – i.e. there is, as it were, a half-dead, half-alive cat in there, which in the technical language of quantum physics is called a "coherent superposition", a quantum condition that contains more than one state at the same time. The half-dead, half-alive cat is real in the sense that it exists as a potentiality in consciousness. And which aspect of the cat we observe in the end, upon the collapse of its wave function when the box is opened, is therefore a product of our own consciousness. As Goswami puts it, "In consciousness, coherent superpositions are transcendent objects. They are brought into immanence only when consciousness, by the process of observation, chooses one of the many facets of the coherent superposition." (Ibid.) Moreover, observing the cat upon the collapse of its wave function at the end of the experiment does not affect the status of the cat because "The collapse consists not of doing something to objects via observing but of choosing and recognizing the result of that choice." (Ibid)

If the example of Schroedinger's cat seems a bit too paradoxical, perhaps a simpler and more evident example will help. Consider the drawing below.
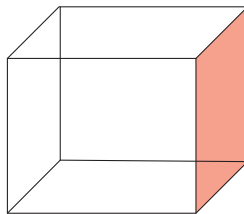
The object depicted here does not change, remains invariant, but how we perceive the object does. Concentrate on the lower of the two squares facing you and it will appear to be at the front of the cube while the upper one is at the back; but concentrate on the upper of the two and that will now appear to be at the front and the lower one at the back. To determine which of the two possibilities you perceive is therefore a matter of choice, just as is the selection of one or the other side of a sign relation for insertion into a context.

The monistic position being taken here requires us to distinguish between so-called strong and weak objectivity. Strong objectivity, the position of classical mechanics, insists that events are independent of any observer. Quantum mechanics on the other hand operates on the principle of weak objectivity, where the event still remains invariant but the act of observing affects the outcome of the observation. Observation, then, becomes a matter of probability, that over a very large number of individual observations the event will nevertheless remain invariant, and consciousness will still be primary. What this ultimately implies is that the consciousness of the universe must be in all of us, and if that is so, we ought to be able to find reflections of it at the most profound level of consciousness in man. What we must understand if we are to do so, moreover, is that the transcendent nature of the phenomena at this level is supra-rational, not supernatural, bearing in mind Lewis-Williams' insistence noted previously that so-called altered states of consciousness are wired into the biology of the brain at this most profound level. That being the case, then one obvious place to look for evidence would be in the archetypes of meaning inherent in the signs of languages at this vital, higher-order level. What we actually find there, as we shall see in due course, can be very enlightening.

Let us return now, as promised, to compare the role that metaphor plays in this and other cognitive theories.

1.7

The role of metaphor in higher-order consciousness

It used to be said that man was the tool-making animal, but we know better than that now. Instead, we should be saying that man is the metaphorical animal. The question then becomes, what is the nature and the ultimate source of our ability to use metaphor, which is central to the cognitive approach to meaning.

Cognitive linguists maintain that the different cognitive domains or conceptual spaces that are activated by the use of metaphor are not themselves inherently linguistic. "For the most part, domains exist independently of any particular expression. They are not specifically linguistic, but conceptual resources that can be exploited for linguistic purposes. A given domain can thus be recruited for any number of different expressions." (Langacker 2013: 53) The general idea is that the referential capacity of a sign originates in one of these domains, the core or source domain, and expands metaphorically from there, finding other target domains for its expression. The evolution of a word's referential capacity, then, is seen as proceeding in an essentially linear fashion away from the core sense to increasingly more abstract meanings using metaphor as a process of pragmatic inferencing from one conceptual domain to another. Furthermore, because the metaphorical process is grounded in this way, it represents a controlled use of metaphor, one not subject to indefiniteness as metaphor normally is. Concerned that a philosophy based on metaphor could be considered unsound, Lakoff and Johnson insist that "conceptual metaphors are anything but loci of indeterminateness and uncertainty. Metaphors are the very means by which we can understand abstract domains and extend our knowledge into new areas." As they describe it, "conceptual metaphors ground abstract concepts through cross-domain mappings using aspects of our bodily experience." (Lakoff and Johnson 1999: 543)

A frequently cited example of the grounded use of metaphor is the so-called spatial orientation metaphor represented by the prepositions 'up' and 'down', which may be summed up briefly in the following way. The core or source domain associated with these prepositions is verticality, the spatial dimension engendered by our bodily orientation in the world. This sense has since evolved through a process of metaphorical expansion, projecting itself onto other non-bodily domains such as verticality in other objects, and ultimately onto other more abstract non-spatial

domains like feelings, as in to 'perk up' or 'feel down'. The various domains comprise image schemas, so that in the end it is not only the words 'up' and 'down' but a variety of related expressions that convey the sense of the metaphor, as when one is in 'high spirits' as opposed to 'feeling low', or one's spirits 'rise' or 'sink'. It is in this manner that cognitive domains function as non-linguistic conceptual resources that are exploited by signs.

This example illustrates the major premises of the cognitive approach: polysemy as the principal characteristic of signs; the central role of metaphor in the process of conceptual categorization; the preeminence of cognitive domains in the way the process works; the linear nature of the pragmatic inferencing that defines its operation; and the primacy of spatial orientation in the way the process is embodied. We will have more to say about how these principles have been applied when we discuss in detail the structure of these and a number of other prepositions in Part 2.

For now, let us compare this view of metaphor with that of the present study. In the first place, there is no question that metaphor plays a central role in both approaches. It is, after all, one of the principal characteristics that sets the mind of man apart from that of other species. But the way in which metaphor is presumed to operate differs significantly in the two approaches. We have been at some pains to show how the linguistic sign evolved from the signaling behavior of antecedent species, and how that development would have given the sign itself a central role in the process of conceptual categorization. Once signals were no longer dependent on the immediacy of the moment for their elicitation and became signs, they were free to operate off-line and be used in contexts unrelated to the stimulus that originated them, in an open-ended process of contextualization.

This very process, then, would have become metaphorical by definition, seeking ever new cognitive spaces for the newly acquired signing ability to express itself. In this view, these cognitive spaces are not independent domains, conceptual resources waiting to be exploited for linguistic purposes. They are a consequence of the metaphorical capabilities inherent in the nature of the sign itself, made manifest through the process of contextualization. Metaphor in this view is therefore not something that proceeds from one pre-established domain to another. Nor is it one that necessarily proceeds in a linear fashion from relatively concrete to more abstract senses. That may be the impression we get at the rational level of consciousness, where original meanings are perceived as literal and subsequent ones as relatively more abstract. But that is due only to the fact that the process has to start somewhere and consequently has nowhere else to go than farther and farther afield from its initial instantiation. At the level of consciousness where the contextualization process originates, it is an entirely spontaneous and fluid one that proceeds without direction or boundaries, a strictly probabilistic one based

on the fundamentally indeterminate nature of sign relations as potentialities in the mind of the speaker. The boundaries that are created, the sense of difference we equate with polysemy, is the result of the feedback from the speech community that establishes which contexts are vital enough to be conceived as distinct conceptual categories.

Finally, let us look at the concept of embodiment that also lies at the heart of both approaches. In cognitive studies the "metaphors we live by" are considered to be embodied in the manner in which humans conceptualize their physical relation to the environment. This type of relation gives spatial orientation the primary role in determining the core or source domain from which the metaphorical process is said to proceed. When, on the other hand, time-consciousness is understood as the principal factor distinguishing humans from other species, as we have been stressing all along, that suggests at the very least that we should not prejudice the study of meaning towards either the spatial or the temporal side. In fact, as we will demonstrate in the detailed analyses provided in Part 2, the spatial connotations of prepositions like 'up' and 'down' are highly limited compared to their temporal ones; and a greater degree of predictability can be achieved in accounting for their contextual applications when their spatial senses are considered only the most immediate and primitive variants of the more profound sense of time-consciousness that ultimately defines their capacity to contextualize. In the final analysis, what is embodied in the structural approach being outlined here are the sign relations themselves, which constitute organic properties of mind at the most profound, supra-rational level of consciousness – the ultimate source of the metaphoric power of human language.

The contextualization process that we are defining here, therefore, is itself a process of *metaphorization*, of extending the meanings inherent in sign relations to an ever broadening scope of potential uses. The issue of what motivates a metaphor thus becomes one of investigating the general meanings inherent in sign relations to determine what sort of conceptual archetypes allow speakers to create the contexts signs do become associated with. Thus the contextual meanings we experience at the rational level of consciousness are grounded in the conceptual archetypes that structure sign relations at the supra-rational level. It is these conceptual archetypes that we will be identifying and defining in this study.

The place of sign theory in neurolinguistics

This overview of general concepts would not be complete without considering how the present approach relates to current research in the fast-growing field of cognitive neuroscience and neurolinguistics. Up to this point, we have been drawing evidence about the neurological basis for a sign-theoretical approach from sources indirectly related to the study of language per se, such as Edelman's neural Darwinism, Lewis-Williams' expansion on that theory, Bouchard's concept of off-line brain systems, and the movement known as biogenetic structuralism. Since we have been primarily concerned with the place of language in the structure of consciousness viewed from an evolutionary perspective, a good place to start this chapter would be with Merlin Donald's neurological study of language with these same goals in mind. (Donald 2001, 2004)

Donald argues strenuously against solipsistic approaches to the origin of language, which assume that a language module evolved inside the human brain, from which our cultural heritage derives. He replaces this inside-out approach, as he calls it, with an outside-in one, which situates the origin of language in the emergence of what he terms cognitive communities, "the interconnected and distributed activity of many brains." "The evolutionary origins of language are tied to the early emergence of knowledge networks, feeling networks, and memory networks, all of which form the cognitive heart of culture." "Symbolic cognition could not spontaneously self-generate until those communities were a reality." (Donald 2001: 252, 253, 254) From this major thesis he proposes three stages or transitions in the evolution of human consciousness: mimetic, mythic, and theoretic. It is the first two of these stages that concern us here.

In Donald's view, the first and critical stage, mimetic culture, had to have evolved before the changes in brain structure and vocal tract configuration that produced the possibility of language. It is this stage that set the conditions for the eventual appearance of language. Early, pre-linguistic mimetic culture was created by the evolution of four uniquely human capabilities, which were "offshoots of the expansion of the human executive brain system": mime, imitation, skill, and gesture. (Donald 2001: 263) These abilities necessarily involved a substantive increase in the degree and type of interaction among individuals in a given social group

that would have set the stage for the socio-cultural component that is essential for the eventual evolution of a language capacity.

We can certainly agree with this proposal as an evolutionary stage in the development of the contextualization process as we have outlined it here. Language is anything but solipsistic; it requires the legislative activity of a speech community to keep a system of sign relations alive. That an enlarged capacity for social interaction would have evolved prior to, and set the stage for, such a reciprocal process is certainly consonant with what we have been insisting on here. So is the notion that language would have had mimetic roots, and may even have been preceded by hand gestures (signing) once the hands had been freed by the onset of bipedal posture. Hand gestures would have constituted early instances of symbolic activity, iconic representations of meaningful intentions that are still evident in language today. Recall Peirce's tripartite division of signs into icons, indexes, and symbols. Icons – signs that have characteristics in common with the things they signify in extra-linguistic reality – are a major feature of sign language, and would, as Derek Bickerton also insists, have represented an essential intermediate stage from what he deems the indexical nature of animal communication to symbols proper in human language. (Bickerton 2009)

Our understanding of both icons and indexes, however, needs to be understood in a sense that is not commonly recognized in conceptualizations of this type. We have already made the point that primate signals are not denotative any more than human signs are. They are not indexical in the usual sense of the term: they do not point to specific elements in the environment in which they are used. So that can't be the characteristic from which linguistic symbols evolved. Human signing behavior, as we have insisted, built upon the connotative essence of primate signals, creating a self-referential system of contextualization. That is how the evolutionary continuity from signals to signs needs to be understood.

Even what are called indexes in human language need to be understood in this same self-referential way. So-called deictic categories are said to be indexical in the sense that they refer directly to the circumstances in which an utterance occurs. They are said to point to the time, place, and participants involved in the actual utterance situation. They include words like 'here', 'there', 'now', 'then', the personal and demonstrative pronouns, and even the category of tense. But that is not their ultimate defining characteristic. They may in certain circumstances have that function as one contextual possibility, but their underlying meaning derives from their relation to other signs in the self-referential system in which they participate. Thus the second person pronoun 'you' may refer to the person being spoken to in the given moment, or it may, as in a phrase like 'you never know', refer to a generalized anyone. Second person pronouns have this generalized sense in other languages as well. In Russian, for example, the second person singular is commonly used

in proverbs, maxims and the like: e.g., *segodnja naboltaeš', a zavtra raskaivaešsja* 'today you blabber away, but tomorrow you repent'. The general meaning of any pronoun must be understood in terms of the system of pronouns as a whole. Similarly, the adverb 'here' may refer to the place in which an utterance actually occurs, or it may have the generalized sense of in one place or another, as in the phrase 'here and there', or in the sense of having no importance or relevance as in 'neither here nor there'. By the same token, the English past tense may refer to the time prior to the actual moment of speaking, but it is also commonly used, as we noted previously, with non-temporal hypothetical, conditional, and subjunctive senses. Its meaning, its capacity for reference, as we will demonstrate in greater detail in Part 2 of this monograph, must be understood in terms of the general system of conceptual relations that define the English verbal grammatical system.

The same is true of the intriguing array of iconic representations in human language, which also must be understood in a properly self-referential manner. Onomatopoeia is a form of sound symbolism where linguistic sounds are said to mimic the sound of the things they are supposed to represent. But even this type of sound symbolism is internally motivated, structured according to the sound system of a given language. This is evident from the fact that different languages employ different sounds for one and the same phenomenon, proving that the way sounds are perceived and mimicked is governed by the structure of the linguistic system rather than anything external to it. Scholars have noted, for example, that the sound that scissors make is expressed as 'snip-snip' in English, but it is *cri-cri* in Italian, *riqui-riqui* in Spanish, *terre-terre* in Portuguese, *krits-krits* in Greek, *katr-katr* in Hindi, etc. The 'toot-toot' of a car's horn in English is *fom-fom* in Portuguese, *pu-pu* in Japanese, *bim-bim* in Vietnamese, and so forth. The differences in these examples can only be explained by the internal structure of the cognitive system producing them.

Sound symbolism also plays a role in the iconic appreciation of linguistic forms. It is well documented, for example, that certain vowel qualities, regardless of the language in which they occur, are associated with specific sense modalities: high pitched sounds frequently elicit impressions of brightness or lightness, whereas low pitched sounds are felt as dark or heavy. Even when the sounds of language mimic such phenomena as size, as when high pitched sounds are associated with smallness and low pitched ones with largeness – e.g. a 'chink' is a small indentation but a 'chunk' is a big one – these qualities are subjective judgments keyed to the cognitive system. Other types of iconic relations include those at the sub-morphemic level where, for example, the referential capacity of an initial consonant cluster like 'fl-' in English includes a whole range of senses having to do with sudden movement: e.g. 'flap', 'flare', 'flee', 'flick', 'fling', 'flip', 'flit', 'flow', 'flutter', 'fly'. Similarly, the initial cluster 'gl-' occurs with senses involving visual perception

or production: 'glance', 'glare', 'gleam', 'glitter', 'glimmer', 'glimpse', 'gloom', 'glow', 'glower'. Here again, recurring properties of language are associated with particular modalities according to which the brain structures consciousness, in this case the motor and the visual.

There is a rather vast literature about these and other types of iconicity in language today, documenting the associations between certain types of sounds and the internal structure of the human cognitive system itself. (Two general treatments are Simone, ed. 1995 and Landsberg, ed. 1995.) These relationships demonstrate the extent to which this mimetic stage in the transition from primate signals to human signs remains an important feature of language today, underscoring the essentially self-referential function of signs, even those that are not related specifically to the symbolic role itself.

It is in the second stage of transition, as Donald proposes, where language first appears. But it does not, in his interpretation, constitute an evolution sui generis. Rather, the origin of symbolic representation lies in the evolution of thought: "In their creative origins, symbols are a product of thought, not vice versa, and in their interpretation, symbols get their meaning from thought, not vice versa." "Words and sentences define and clarify knowledge that resides elsewhere, in foundational semantic processes that we share with other primates and where the motive force for the evolution of language must have originated." (Donald 2001: 276, 277)

There are two ways to interpret this position. The first is the common one that thought precedes language and language gives a logical structure to thought. (Recall Jackendoff's System 1 and System 2 discussed previously.) Another way is to assume that what Donald calls the "foundational semantic processes" which motivated the evolution of language are embodied in the very archetypes of meaning that define the sign relations of language today. We are suggesting that it was the space-consciousness that antecedent species obviously possess which was built upon by the evolution of higher order consciousness, creating a second layer of time-consciousness once the human mind was freed from the "tyranny of the present" in which our primate ancestors live. This would have created the hierarchical structure we now know as the space-time continuum, the structure we find enshrined in the signs relations of language at the most profound, supra-rational level of consciousness. Thus the evolution of language and of thought would have proceeded hand in hand as a simultaneous development, one that we find not only in language but in other domains of consciousness at the transpersonal level as well, such as in the structure of man's myths. This interpretation would give further substance to Donald's definition of the second stage, one where the evolution of language was coterminous with that of "mythic culture", the process by which "mimetic culture came under the governance of narrative thought and ultimately, integrative myth". (Donald 2004: 49) We will be providing evidence

of this archetypal structure in the signs of language throughout the remainder of this volume. Further evidence for its existence in the structure of creation myths worldwide was provided in a previous publication. (Sangster 2013: 145–51)

A number of researchers in neuroscience have also pointed out, as we have, the central role that memory plays in the evolution of language and consciousness generally. We have cited Edelman's theory that it was the massive increase in re-entrant connectivity between modalities in the human brain which permitted recall of experiences in the absence of any immediate stimuli. We have also noted Bouchard's theory of offline brain systems, which specifically allows for the processing of experience in abstraction from its actual performance. To this list we can add both Merlin Donald and Steven Rose, both of whom stress the importance of memory control in providing the grounds for the evolution of symbolic structures. (Donald 2004; Rose 1992) Donald speaks of "autocueing" as the device that frees the human mind from dependence on the present, allowing for voluntary control over the process of recall that is indispensible if vocalizations are to be more than signals tied to experience in real time. Rose identifies three different types of memory that distinguish humans from our primate cousins: verbal memory based on spoken language, artificial memory that is the hallmark of written language, and collective memory that builds upon the socialized aspect of language both by broadening and limiting or reshaping the scope of individual experience at the same time. This latter type is exactly what defines the feedback role of hearers in determining which contextualizations do or do not receive reinforcement.

Perhaps the most important contribution that recent research in neurolinguistics has made to our understanding of speech production and comprehension is in studies demonstrating how linguistic activity is mapped throughout the various regions of the brain. These studies show that the traditional modular view, where speech production was thought to be governed by the motor speech area (Broca's area) in the frontal lobe and speech perception by the auditory association area (Wernicke's area) in the temporal lobe, is no longer valid, despite the fact that these two areas are hard-wired together by means of a fiber tract known as the arcuate fasciculus. Modern imaging technologies have shown conclusively that language activity is in fact widely dispersed throughout the brain, a conclusion that was already implicit in Edelman's theory of neuronal group selection as early as the 1980s, which highlights the central role of re-entrant connectivity between modalities in the human brain in the evolution of higher-order consciousness. It is precisely this realization that brings the evolution of memory control and of language together as necessary tenets of any model mapping language in the brain. In her comprehensive presentation of neurolinguistic research, Edna Andrews cites a number of recent studies that have made this point. (Andrews 2014; Calvin and Ojemann 1994; Poeppel and Hickok 2004; Lieberman 2006; among others)

The shift from a modular view of language to the concept of multimodality has also been espoused in cognitive linguistic circles, notably in the work of Gallese and Lakoff (2005). In their view, conceptual knowledge and human language are together embodied in the multimodality of the sensory-motor system, where all of the various modalities are essential to the proper functioning of language: the motor system for speech production, audio perception for speech comprehension, sight and touch for conceptual processing, and so forth.

All of these studies and their conclusions support the proposals we have been making here. But as far as I have been able to determine, little consideration has been given to the nature of the relations between signs as organic properties of mind at the supra-rational level of consciousness, the level that Lewis-Williams insists is "hard wired" into the human brain. This may well have to do with the reluctance of researchers in this field to entertain the possibility of a transpersonal level where the evidence may be of a qualitatively different sort. One of the victims of this reluctance has been the binary principle, the principle that describes the relations between signs at this higher-order level. As we indicated earlier, it is rare that signs evince a binary character at the level of our immediate awareness, the level where everything occurs in a context and variability is therefore the rule. But that does not address the possibility that there is another, more profound type of difference that also deserves attention.

In fact, some attention has been paid to finding neurological evidence for the concept of the phoneme, which is based on the principle that the variations in sound that occur in context do have a higher-order, relational structure that is the basis upon which semantic distinctions between words are recognized. Work in the field of biogenetic structuralism has suggested that the existence of the hard-wired connection (the arcuate fasciculus) between Broca's and Wernicke's areas could be considered a necessary, if not sufficient, condition for the eventual recognition and production of phonemic distinctions. This does not imply a modular view of language, only that the hard-wiring between these two areas may in its own way be significant. "Phonemic identification of a linguistic signal is decided by the listener in terms of the articulatory controls by which he would repeat the signal when acting as a speaker. Thus phonemic identification requires both the auditory association area and the motor speech area to be directly connected." (Laughlin and d'Aquili 1974: 57)

The relatively recent specialized field of neuropsychoanalysis also provides some promising avenues to follow. Since memory creation is acknowledged as a vital aspect of the language capacity in neurolinguistic research, it behooves us to look at how memory is created by unconscious mental processing as a way to get at the kind of evidence we seek. Work in this field distinguishes between conscious or explicit memory and unconscious or implicit memory. In the latter

type, previous experiences are invoked in the performance of a given task without the individual being consciously aware of them. The psychologist Drew Westen has proposed that there are actually two kinds of implicit memory: *procedural* and *associative*. (Westen 1999) Procedural memory is what drives our ability to perform every-day tasks like tying ones shoes, throwing a ball, riding a bicycle, and so forth. It is associative memory that is of particular interest to us here. In this type, the mind creates unconscious relational networks that guide the process by which we associate one thing with another entirely outside of our conscious awareness. This applies especially to word associations, which have been studied in controlled experiments that meet the conditions of cognitive linguistic research. Westen describes a number of experiments demonstrating the existence of such relational networks. In one, subjects are shown a series of words in which the word 'dog' may or may not appear, and are then asked to press a button as soon as they sense whether a subsequent series of letters flashed on a screen forms a real word. Subjects who have been primed in advance by mention of the word 'dog' press the button faster when sequences of letters like 'terrier' or 'poodle' appear than if they have not, demonstrating that there is an associative network relating such words quite apart from any conscious awareness or logical assumption of the connection. (Westen 1999: 1066; repeated in Mayer 2007: 219)

In fact, one can witness such associative networks at work under certain circumstances in everyday life. The wife of a colleague of mine, who has unfortunately had a series of debilitating strokes, has difficulty finding the correct word for what she is trying to express. Her husband has documented a series of instances where the word uttered is not the one intended but is an example of an underlying category that contains the correct one. For example, when talking about her shoes she said 'socks' instead. When commenting on lunch, she used the word 'supper'. She called the napkin at the dining table a 'handkerchief'. At other times she referred to a basket as a 'cage'; a bottle as a 'box'; a celebration as an 'inauguration'; and her computer as a 'dotter'. Getting out of the shower, she said she had 'dirt' on her back when she meant her back was still wet. When asking for the TV to be turned on, she said it needed to be 'put back together'. She even mistook 'down' for 'up'. From this evidence we may surmise that there is a disconnect between the underlying category to which a word belongs and the ability to select the correct exemplar of that category. The category, the associative network, is still intact at a deeper cognitive level where the implicit memory resides, while the ability to select from that category has been compromised.

This type of evidence suggests that there are associative networks underlying sets of lexical items like this, but it still doesn't tell us much about the underlying structure itself. What we should be trying to ascertain is the ultimate nature of the associative networks that underlie the lexicon generally, deep inside the

unconscious at the transpersonal level. That is where the concept of archetypes that we will be identifying in the course of this study come into play. We will pursue this investigation later, in the chapter devoted to the lexicon.

Hopefully the analyses presented in the rest of this monograph will demonstrate the need for this kind of investigation in the future. In the meantime, it is important to realize that there is nothing in the theory being put forth here that contradicts the principles underlying work in neurolinguistics. Rather, what we are proposing is intended to complement that work in significant ways.

Archetypes of meaning

The archetypes of time-consciousness

We have already hinted at what archetypes of meaning might look like in the grammatical sphere when discussing the past tense in English above. As that discussion suggested, the general meaning of a form like the English past tense needs to be understood in a more profound sense that recognizes its capacity for reference not only to past time per se but also to hypothetical, conditional, and subjunctive situations. Since English does not have separate forms for these non-temporal senses, we need to explain what it is about the past tense form that it has subsumed these meanings as contextual variants of some deeper conceptualization of time. This leads naturally to consideration of how time is represented in human consciousness generally, a subject that should be of special importance given that the conceptualization of time was central to the evolution of the linguistic sign from the signaling behavior of antecedent species. Once the use of signals was no longer constrained by experience in real time, the species was able to conceptualize a "not now" distinct from the "now", creating a far more profound and abstract relation with enormous consequences for the development of language and the survival of the species generally.

In her insightful book on the concept of time, K. M. Jaszczolt presents her view of how time is ultimately conceived in the mind. She asks the question, "Is time a primitive concept or do humans conceptualize time in terms of something else more basic?" In her terms, what we perceive as the flow of time "is best explained as detachment from certainty, and hence as modality". "Humans conceptualize time in terms of certainty and possibility. In other words, the concept of time supervenes on a more basic concept of modality". Time, at this more profound level of consciousness, is "a conceptual category of modal detachment", specifically "of degrees of detachment from the certainty of *now*". (Jaszczolt 2009: 31–38) In this view, the "now" has the privileged status: "It is the privileged status of the *now* that forces us to conceptualize the *not now* not as an experience but as an anticipation or a memory of an experience". (Jaszczolt 2009: 49)

This understanding of the concept of time is not unique. It is shared also by Laughlin & Throop (2008); and it is essentially what Antonio Damasio implies with his distinction between the "core" and the "autobiographical" self. (Damasio 2010) As I interpret his thesis, the core self derives evolutionarily from the protoself in

antecedent species when interaction with the "now" produces consciousness of the present. Then, as brain structures continue to evolve, the consciousness of the present develops into a "remembered present", which in our hominid ancestors, for example, establishes an autobiographical self that can operate over a certain limited length of time. Ultimately, with the evolution of *Homo sapiens*, the autobiographical self is no longer constrained by activity in the present, but can be conjured up at a distance, both temporally and spatially. Consciousness at this level has become, in a word, non-local – a condition, by the way, that suggests some kind of affinity with non-locality in quantum physics.

What all of these interpretations of the conceptualization of time imply is that evolution has preserved the centrality of the "now" that governs our primate ancestors' ability to conceptualize, and has built upon it with the evolution of higher-order consciousness. This process has enabled us to conceive of a "not now" with its own unique trajectory: first to exploit the potential of the "remembered present" by conceptualizing memory itself as a distinct category in higher-order consciousness (the past), and ultimately to utilize the potentiality inherent in the very nature of signs to conceive of events as anticipations or possibilities for experience in the future. Thus the past is one step removed from the "now" either temporally or non-temporally, presenting events in terms of how they did happen or might, could, or should have happened, while the future is one step further removed, potentially maximally distant from the "now", expressed as an intention or an expectation.

It is instructive to consider how this concept of time is embodied in the signs that represent tense and mood in English. Formally speaking, the entire English verbal grammatical system is structured around the single opposition between past and non-past forms. This includes not only the simple but all of the compound tenses as well: 'was/is coming', 'had/has come (been coming)', 'did/does come', 'would/will (have) come', 'should/shall (have) come', 'could/can (have) come'. We use the term non-past rather than present here because the present tense in English is actually an unmarked form, capable of referring to events in any time frame at all. In addition to present time, it can refer to past time, as in a newspaper headline like 'President goes to Paris' when the article makes it clear that he has already gone; or to future time, as in 'He goes/is going to Paris tomorrow'; or even to timeless expressions, like 'Planes go faster than trains'. This distinction is especially important because the future in English is represented lexically by the modals 'will' and 'shall' as non-past forms in precisely this generalized sense. Their counterparts 'would' and 'should' are themselves genuine past tense forms, expressing conditional or hypothetical senses just like the other past tense forms. It is in this manner that the tri-partite hierarchy of present, past, and future inherent in the archetypes of time-consciousness is expressed systematically in English

in terms of a binary grammatical relation augmented by a lexical distinction that itself participates in one and the same binary grammatical one.

Now the category of tense, as we noted previously, is usually considered a deictic category, one that is said to be defined on the time of the utterance itself, the actual moment of speaking. We have explicitly challenged this notion, based on the fact that linguistic signs are not denotative in this sense, but are connotative, expressing their meaning self-referentially in terms of the events being described in the utterance itself, in terms of the relations that adhere with the other signs that constitute an utterance. To the extent that a given tense form does refer to the moment of speaking, that sense should be understood as a contextual variant of the more general, archetypal meaning of the form in higher-order consciousness.

This is an especially important point when considering what forms actually do carry the archetype of the present in English. We have just demonstrated that what we call the present tense in English is actually unmarked, contextualizing its meaning in any and all possible time frames, including timeless ones. The form that does represent the present in the self-referential sense we have insisted upon here is the '-ing' form, the form that expresses an activity which totally encompasses the period of time, the "now", being expressed in the given utterance. This is the form of the progressive tenses, so-called because they indicate an action that is on-going at the time of the events being described, no matter in what tense those events themselves may be expressed: e.g. 'He is/was/will be going to Europe'. This is also the form of the gerund, which likewise expresses an activity coterminous with the events being described in the utterance: e.g. 'He met her going to town'. This gerundive sense of the '-ing' form extends to verbal roots being used as nouns indicating how that activity manifests itself in the given utterance: e.g. 'buildings', 'drawings', 'savings', 'blessings', and so forth. Finally, this is the form of the present participle, which creates adjectives from verbs describing a phenomenon specifically in terms of the way it appears in the given narrated situation: e.g. 'a charming guy' is one whose ability to charm defines the manner in which he is being presented in the "now" of the given utterance.

Understanding the proper functioning of the "now" and the "not now" as archetypes whose essence is defined not on anything necessarily to do with events in the real world but on the reality being described in the utterance itself is especially important when considering how the archetypes of time-consciousness serve to structure the use of signs that have no specific reference to time per se. For example, appreciating the role of verbal objects in the construction of sentences from a sign-theoretical rather than a predicational perspective opens up an entire avenue of inquiry into the time-conscious nature of sign relations. The fact that direct and indirect objects in English are expressed syntactically necessitates the development of a framework for analyzing word order as a specific kind of sign

relation, so we must delay that discussion until Part 3 of this monograph. But the Russian language does provide an immediate illustration of how the archetypes of time-consciousness operate to distinguish different kinds of verbal objects, since they do so by means of the case endings that are tied directly to the nouns representing the objects involved. Let us turn to that discussion now.

Objects in Russian may be expressed in one of three different cases: accusative, instrumental, or genitive. These three cases distinguish one type of object from another precisely by its involvement in or degree of detachment from the "now" of the utterance situation. An object in the accusative is completely involved in the "now" of the action described by the verb, one in the instrumental is only marginally involved, and one in the genitive is no more than remotely involved. These differences exactly parallel the tri-partite hierarchy of archetypes we have been describing here with respect to the "now" and the "not now", understood in the properly self-referential sense as referring to the relations between the signs by which the utterance itself is composed. They are also consistent from case to case in Russian no matter whether they characterize verbal objects or any other use of a noun or noun phrase in the language. Thus the archetypes of time-consciousness constitute the principal structuring device for the Russian case system as a whole. Treating the form-meaning nexus inherent in linguistic signs seriously like this, therefore, allows us to gain insights into the ultimate nature of consciousness that are otherwise ignored when case is considered a purely syntactic or predicational phenomenon.

Let us look at some representative examples of how the Russian language structures the relations between the cases that lead us to this conclusion. (A more elaborate presentation of this evidence was given in Sangster 2013: Chapter 5) Not only does this evidence demonstrate that the signs of language are anything but surface variables detached from their ultimate meaning, exposing the limitations of a syntactic theory being imposed on a morphological language like Russian; it also shows that even the most seemingly disparate senses associated with a given case all point to the same underlying archetypes of meaning defining the essence of the signs in human consciousness.

It is often said, for example, that the objects of verbs expressing some form of domination in Russian take the instrumental case because they tend naturally to be marginalized by the very act of domination. Such verbs, it is claimed, "govern" objects in the instrumental, and syntactic rules are written to produce the instrumental in the context of these verbs. But there are plenty of instances where the accusative case also occurs with these very same verbs, and a filter therefore needs to be inserted in such a mechanistic framework to switch the case form to the accusative. From a sign-theoretical point of view, this is nothing but a statistical phenomenon, and positing rules of this kind only obscures the systematic difference in meaning between the cases that occurs throughout the language. More

importantly, it denies the speaker's inalienable right to choose between the cases and produce the difference in meaning that the forms provide.

So, for example, the verb *pravit'* means to govern or control in a wide variety of different ways. (Separate glosses will be provided in parentheses when the phrase structure is not obvious, when the Russian words and their order are not identical to the English.) When used with the instrumental (I) *pravit' gosudarstvom(I)* means 'to rule [a] country' and *pravit' avtomobilem(I)* means 'to drive [a] car'; but when used with the accusative (A), *pravit' britvu(A)* means 'to adjust [a] razor' and *pravit' korrekturu(A)* means 'to correct proofs'. Clearly, when the instrumental is used nothing specific happens to the country or the car. They are, as the nomenclature used to identify the case suggests, mere instruments of the process. But with the accusative something definitely happens to the razor and the proofs: their status changes as a result of their being completely affected by – fully involved in the "now" of – the action expressed by the verb. Exactly the same distinction occurs regardless of whether there is a verb of domination or not. When you 'slam [a] door' in Russian – *xlopat' dverju(I)* – the object is in the instrumental because you are more interested in the effect of the slamming than you are in the status of the door. Likewise, when someone 'spill[s] medicine on [their] skirt' – *nakapat' lekarstvom(I) na jubku* – the object is again in the instrumental because the spilling is an unintentional act that happens to involve medicine but has consequences for the skirt. But when you 'pour medicine into [a] glass' – *nakapat' lekarstvo(A) v rjumku* – the object is in the accusative, underscoring the change in status of the medicine as a result of performing the verbal process.

Exactly the same distinction occurs again when these two cases are used in time expressions. The instrumental is consistently used when the time is given only as a point of reference – *guljat' večerami* 'take a walk in the evenings' – whereas the accusative occurs when the time indicates how long it takes to perform the verbal action – *guljat' ves' den'* 'go for a walk all day'. The same distinction occurs in the context of verbs of location as opposed to verbs of motion, where the instrumental is used when the location is given only as a point of reference – *xodit' lesom* 'walk in the forest' – but the accusative occurs when the place identifies where one ends up as a result of performing the action of the verb – *idti v les* 'walk into the forest'. While the latter type may appear to represent a case of syntactic government, the absolute consistency with which the one case differs from the other everywhere else in the language belies such an interpretation.

In all of these instances, therefore, the accusative signifies a phenomenon (object, time, place) that is directly affected by its involvement in the "now" of the given utterance, whereas the instrumental remains one step removed, presenting an object as a means rather than an end, a point in time rather than a span of time, and a place rather than a goal – that is to say, one degree of detachment from being

totally consumed by the action being described in the "now" of the utterance. If the phenomenon is fully engaged, as an accusative object is, then it completely validated by its occurrence in the "now" of the utterance situation; if it is only minimally involved, as with the instrumental, then its use must be derived from its existence in another frame of reference distinct from the "now", which is to say the "not now". So here we see that the fundamental distinction between the "now" and the "not now" is functioning in a case system in much the same manner as it does in a tense system, where it is the utterance situation itself that determines the status of the "now". This, then, is the crux of the matter: that the evolution of the linguistic sign from the signaling behavior of antecedent species has put the conceptualization of the "now" and the "not now" squarely in the frames of reference provided by the signs of language themselves.

We may use this same reasoning to explain the referential function of the genitive case in Russian. If the instrumental represents a "not now" that is one step removed from the "now" of the utterance situation, then the genitive is clearly one step further removed, indicating an object that is even less engaged in the process denoted by the verb, invoked as a phenomenon with an existence of its own in another conceptual space no longer participating in the utterance as such. While the Russian genitive has quite a number of seemingly distinct uses, as we noted earlier, they all point to this same general meaning. Objects of negative verbs normally occur in the genitive, denying their participation in the utterance altogether – *ne videl svoevo otsa* 'didn't see his father'. The genitive is used with verbs that express avoidance of the object or failure to achieve the object in one way or another – *izbegali novostei* 'avoided the news'. The genitive is also used when counting objects, indicating that only a certain quantifiable amount of the object has anything to do with the situation being described – *dva doma* 'two houses'. This is also the way we should understand the common use of the genitive in so-called adnominal constructions like *kryša doma* ' roof of [the] house', where the house itself is not involved in the verbal process; it is invoked only insofar as it identifies which roof is involved. The genitive also regularly occurs with the object of verbs expressing a wish or a desire, where the object is given as a potentiality rather than something actually attained – *xotet' mira, vnimanija* 'want peace, attention'. Perhaps most significant of all, the subject of an existential verb under negation in Russian is expressed in the genitive rather than the nominative, the quintessential example of absence from the situation described – e.g. *deneg net* 'there is no money' (of money [is] not). This proves that case usage conceived as a sign function of language has nothing to do with the types of functions normally associated with the category of case in traditional grammar, where a subject is assumed to be expressed in the nominative case. Nor is such a usage an "exception" to the presumptive rules of grammar: it is entirely a function of the signifying

capacity of the case itself at the level of consciousness where signs themselves structure meaning.

This last example is especially significant because it suggests that the way in which our sense of predicational logic operates at the rational level of consciousness is something quite different from the way the signs of language themselves structure predication at the supra-rational level. This fact is nowhere more evident than in Russian, which contains a host of subjectless sentences where a predicate complement in the dative case has to be artificially transposed into a so-called "logical subject" in order to satisfy the requirements of universal grammar – a process that obscures the actual functioning of the signs themselves and their role in determining the way in which experience is categorized in a speech event. There is a whole set of predicate words, called *kategorija sostojanija* or state of being, that do not modify a subject in the nominative case (N) but occur with a dative (D) complement instead. These states of being are not attributable to a subject because they do not express a quality that can be acquired by the subject. Saying 'I am sorry' in Russian is not something that makes you a "sorry person"; hence *mne (D) žal'* (to me [is] sorry). Likewise, 'must' and 'need' cannot be predicated of an individual the way they are in English because neither describes a quality of the individual who 'must' or 'needs': e.g. *mne (D) nužno idti* 'I have to go' (to me must go); or *mne (D) nužna kniga (N)* 'I need the book' (to me is needed [the] book), where the book has to be the subject. 'Ought', on the other hand, does identify a property of the person who should, since this is a quality that rests with the individual rather than one derived from the situation: e.g. *ja (N) dolžen idti* 'I ought to/ should go'. An especially clear example of the subtle yet significant difference being described here involves the act of 'liking': a sentence like 'I really like to swim' says something about me – hence *ja (N) očen' ljublju plavat'*. But if I really liked the play I saw last night, the likeability becomes a quality of the play – hence *mne (D) očen' ponravilas' p'esa (N)* (to me very was pleasing the play).

Clearly, the dative in these cases is playing its own unique role in the utterance situation, one that recapitulates its role as an indirect object: a phenomenon that is both fully involved in the situation described but at the same time playing a reduced or secondary role. In our terms, therefore, we may say that the dative is defined by its importance in the "now" of the utterance situation while at the same time being one step removed from the "now", just as the conventional terminology of *indirect* versus direct object would suggest. Which is to say that the dative would be marked for two of the features of time-consciousness we have described, the "now" and the first stage of the "not now".

At this point we need to give names to the three stages of time-consciousness that we have been illustrating here. To represent the archetype that defines the "now" we will henceforth use the term *validation*, underscoring the fact that the

"now" of higher-order consciousness is represented in the signs of language as a phenomenon whose role is fully validated in the situation being described: it is either completely involved, directly affected, or otherwise totally coexistent with the events being described in the "now" of the given utterance. The archetype of *validation* is therefore a feature of time-consciousness that conceptualizes the "now" as a modality, as a higher-order linguistic property with both temporal and non-temporal connotations. To represent the archetype that defines the first stage of detachment from the "now" we will use the term *dissociation*, indicating a phenomenon that is only a step (a memory) away from the "now", again whether or not time per se is indicated. To represent the archetype that defines the final stage we will use the term *potentiality*, describing phenomena whose ultimate existence transcends the events described in the utterance situation, those that are remote from the situation described, potentially maximally distant in terms of either time or space. The reason for choosing *potentiality* to represent the final stage will take on added significance later when we consider the complete hierarchy of archetypes and its implications.

Thus based on what we have analyzed so far, the English progressive tenses and the Russian accusative case would be marked for *validation*; the English past tense and the Russian instrumental would be marked for *dissociation*; while the English future modals and the Russian genitive would be marked for *potentiality*. The Russian dative would be marked for both *validation* and *dissociation*, indicating a more complex amalgamation of features as described above.

We will consider the structure of the English verbal system more comprehensively in Chapter 3.3. For a more complete picture of the Russian cases as a system of signs using this methodology, albeit in previous incarnations, see Jakobson 1958, van Schooneveld 1978, Sangster 2013, among others.

Moving on now from grammatical categories proper, let us consider next how the archetypes of time-consciousness account for the referential capacity of lexico-grammatical or so-called function words like prepositions.

Evidence of time-consciousness in prepositions

In a previous chapter we used the prepositions 'up' and 'down' to illustrate the difference between the cognitive linguists' approach and the one being outlined here with respect to the operation of metaphor. Let us pursue that discussion more fully now.

In analyzing the structure of prepositions in English from the perspective of cognitive linguistics, Tyler and Evans stipulate that the polysemy associated with a given preposition is the result of pragmatic inferencing from an original primary sense or proto-scene from which the expansion of meaning proceeds. This process is realized by "conceptual reanalysis and concomitant conventionalization of the inference as a new meaning component associated with the linguistic form". This in turn "results in the development of a semantic network" that relates the various contextual meanings of a form. (Tyler and Evans 2003: 4) A set of five criteria are provided for determining what constitutes the proto-scene for a given preposition. (Tyler and Evans 2003: 47) Of these five criteria, three are structural, having to do with relations beyond the preposition in question with the language generally, but the two apparently most important ones, because they are listed first, are not. These are the earliest attested meaning (as recorded, for example, in the OED) and the proto-typical usage. Both of these criteria put the source of the process in one of the preposition's many uses.

From the point of view of the present study, these two criteria are already context-dependent phenomena, meanings that are the result rather than the source of the contextualization process as we have defined it here. When on the other hand the source of the process is sought at the pre-contextual level and its function is understood as deriving from the very nature of the sign itself as a potentiality, then a significantly different picture emerges. The potentiality that defines the conceptual archetypes underlying the general meaning of signs at this higher-order level of consciousness constitute a natural source of the metaphorical process by which new contextual meanings derive. And they do so in the entirely spontaneous and probabilistic manner that we have described previously, where feedback from hearers as speakers themselves establishes which contexts get reinforced and are consequently perceived as different meanings, different aspects of cognitive reality.

In addition to the criteria for determining the source domain, spatial orientation is taken to be the guiding principle upon which the proto-scene and the ensuing semantic network are based in cognitive grammar. As Tyler and Evans put it, "conceptual structure is a product of how we as human beings experience and interact with the spatio-physical world we inhabit". "Our basic assumption is, then, that as humans, we segment our perceptions of the world and the way in which we experience it into spatial scenes." (Tyler and Evans 2003: 3, 27) In their analysis of prepositions, Tyler and Evans adopt Langacker's model for representing spatial configurations in terms of landmarks (LM) and trajectors (TR). These principles are in keeping with much of the work in current cognitive studies.

Let us look once more at the prepositions 'up' and 'down' to observe the implications of these two approaches. When spatial orientation is taken to be fundamental to the conceptualization process, the vertical meaning associated with these prepositions naturally takes precedence in establishing that as the source domain from which the process develops. This conclusion is supported in the case of 'up' and 'down' by the fact that this physical sense was the first to be recorded and is documented in the OED. But what if the sense of verticality itself supervenes on a more profound sense at the pre-contextual level where the archetypes of meaning ultimately reside, just as we saw earlier with the concept of time. After all, the sense of verticality associated with these prepositions is relatively limited compared with all their other possibilities for contextualization, especially when one considers their adverbial as well as their prepositional usages.

Let us presume instead that the ultimate origin of the sense of verticality does not derive so much from our bodily awareness but from the faculty of perception itself, from the act of looking up and looking down. What would then be conceived would not be the sense of verticality per se but the relation between two realities: the reality above the head and the one at the ground. This would be consonant with what we talked about earlier, that evolution provided humans with the ability to distinguish reality from actuality and structure its conceptual domains in terms of different realities, the reality of the "not now" from that of the "now". In this respect the reality at the ground would represent the "here and now", and what was above the head the "there and then". Such a distinction would constitute a spatio-temporal relation with great conceptual potential of its own, where temporal connotations are at least as important as spatial ones. The sense of verticality, then, would be derivable from this underlying opposition as one of its more evident by-products, since the very act of looking up or down induces the bodily sense of motion, something that is actually realized over time.

Tyler and Evans make some telling observations about the importance of the ground as the source of our sense of the here and now, though they do it to highlight

the centrality of spatial orientation rather than the more general spatio-temporal sense that the ground implies.

> …in many ways the most salient elements in our environment are those that we are close to or in potential contact with. These are accordingly the entities we are most likely to interact with and have first-hand knowledge of. For the young child learning about the world and learning how his or her language labels entities, actions and relations in the world, the here and now, that is the immediately perceivable, is what is crucial. Moreover, the primary spatial domain for humans (i.e. the spatial domain with which we interact most frequently) is the ground.
> (Tyler and Evans 2003: 115)

When we take the more general spatio-temporal sense of this relationship seriously and apply it to the analysis of the full range of reference associated with the words 'up' and 'down', what we will find is that it is actually the temporal aspects that predominate, making this relation essentially one of time- rather than space-consciousness. In pursuing this analysis, however, we must continually bear in mind that the meanings we are describing are properly self-referential, referring specifically to the nature of the situation being described in the utterance itself. Thus the "now" associated with 'down' is temporal in the sense of being coterminous with the situation in the given utterance, and 'up' is futuristic in the sense of being beyond that situation.

We must also guard against jumping to conclusions about where our appreciation of the meaning of words comes from. Far too often we make assumptions about differences in the meaning of a word that are not actually in the word itself but in the contribution that is made by the context in which it is situated. So for example, if we think we see verticality in phrases like 'up the ladder' or 'down the stairs', we must ask ourselves where that sense of verticality is actually coming from; and the answer ought to be from the context of how we perceive what we do with ladders and stairs, not necessarily from the inherent meaning of the words 'up' and 'down' themselves. The way we analyze constructions like this, therefore, has everything to do with the way we understand how the self-referential process of contextualization actually functions.

For example, the expression 'go up to the front of the room' does not by itself imply any verticality; rather, a sense of leaving here to go beyond here to there. But we can also say 'go down to the front of the room' in a circumstance where one is in an amphitheater, say, and to get to the front of the room requires going down stairs. In such a situation it would again be the stairs that induced the sense of verticality. When we ask someone to 'run down to the store', there is no implication of verticality, but there is the inference that going to the store is a frequent and normal thing we do. The concept of "here" in such a case is being applied self-referentially

to something that is normal and therefore still within the purview, in the "now" of the situation being described. On the other hand, when we ask someone to go 'up to the store', that conveys a different kind of reality, a destination that is not here but further away in terms of either distance or habit or both. This distinction is quite common in daily life, whether we realize it or not. For example, Trader Joe's is close by my house and we go there frequently, but Costco is farther away and we go there only when there is something particular that we know they have. It is therefore no accident that we regularly say 'Let's go down to TJs' but 'Let's go up to Costco'. To paraphrase Tyler and Evans in the quotation above, the ground (what is 'down') represents the here and now, what is closest to us, what we are "most likely to interact with". 'Up', on the other hand, is beyond this sense of the here and now, one that is essentially futuristic in its implications.

Consider now the following minimal pair: to go 'up the river' vs. to go 'down the river'. While there may be a sense of verticality here, since rivers do flow in response to the rules of gravity, there is again something more fundamental involved. When you go up the river you are going against the current and, more importantly, away from here, anticipating something "there" at the end of the journey. But when you go down the river, you are going with the current and the sense that is produced is one of being "here" on the river, again in the properly self-referential sense of being consonant with the "now" of the river. And any destination that may be entailed would be implicit in the larger context of the utterance. By the same token, 'downstream' implies going with the river; 'upstream' implies going somewhere else. Other uses of these words as prefixes display the same characteristics. 'Downtown' implies being in the center of things, whereas 'uptown' is the place beyond the center. Interestingly, British English reverses this relation: the 'uptrain' goes to the city whereas the 'downtrain' is the one that goes away from the city. This distinction is due to the historical fact that in British rural society "here" implies being at home in the country while the big city is "there", where one goes to work or otherwise engage in activities beyond the home. This type of situation also exists in rural America where "here" is where the home is and the expression used is 'down home'. 'Downstage' as a noun is the part of the stage nearest the audience where attention is centered, whereas 'upstage' is the part farthest from the audience. Furthermore, 'upstage' as a verb can mean either to move towards the back of the stage to make another actor face away from the audience, in theater parlance, or in more common usage, to divert attention away from one person to another. Similarly, 'upwind', commonly used in the sense of from something, implies that one is beyond the influence of the wind, whereas 'downwind' implies being within the purview of the wind, which is why you don't want to be downwind from a wild animal on a safari because you'd be within his olfactory space. The 'downbeat' is the accented beat in music, the one that sets

the rhythm for the piece, while the 'upbeat' is the unaccented beat that precedes or anticipates the accented one. It is also the upward stroke made by a conductor to indicate the last beat in a measure that signals a new measure. Colloquially, to be 'upbeat' means to be cheerful in the sense of optimistic, promising, hopeful, or forward-looking. Conversely, to feel 'downbeat' implies to be stuck in the moment, not able to get out, as in to be 'down on your luck'. Thus the negative sense of 'down' often associated with psychological states is not necessarily a logical inference deriving from the notion of 'down' as inferior or worse, as Tyler and Evans suggest, but of being in the moment of whatever is being expressed. In fact, the opposite, positive psychological state is also often associated with 'down', as in 'to be down with that', meaning in agreement with whatever is being expressed.

It is vital to understand that the concept of "here" that defines the use of 'down' is not fixed but relative; it is not based on any particular time or place but rather on the *focus of the speaker's intent.* Consider the following situation involving American football. When the quarterback has no one else 'downfield' to throw the ball to because those receivers are all covered, he has no choice but to 'check down' to the open receiver nearest to him. A superficial analysis of these two expressions would lead one to think of them as oppositions: whereas checking down may involve the receiver nearer the quarterback, downfield is the position farther away. However, in 'checking down', the focus of the "now" that establishes the *validation point* for the use of 'down', is the quarterback's own position at the line of scrimmage and the receiver nearest to him; whereas in the case of 'downfield', the focus is the goal line and the receivers nearest to the target, the locus of the quarterback's original intention in order to complete the play. In both instances, therefore, the use of 'down' implies something in the context of the utterance itself that establishes the frame of reference for the archetype that represents the here and now of the situation being described.

There are other superficial interpretations that need to be dispelled when analyzing meanings in this way. For example, the dictionary will tell you that one of the meanings of both 'up' and 'down' is "along", implying that phrases like 'walked up the road' and 'walked down the road' therefore are synonymous. But once again, we are not talking about what our immediate sense of awareness tells us about sameness and difference in meaning, which leads us to believe that words are synonyms of one another when used in similar contexts. Lexicographers deal in polysemy as a profession, listing all possible differences in usage, some of which will naturally tend to overlap in specific situations. But we must take the longer view and recognize that the concepts we are describing here with regard to these two words are the ones that systematically distinguish them from one another at the most profound level of consciousness where the intent of the speaker prevails.

From this initial evidence, therefore, and the conclusions we have drawn so far regarding the archetypes of time-consciousness, it is not difficult to see that the sense of "here" that is associated with the use of 'down' should properly be conceived as a spatial variant of the "now" embodied in the archetype of *validation*; and the sense of "there" associated with the use of 'up' should be understood as a spatial variant of the "not now" embodied in the archetype of *potentiality* that refers to phenomena beyond, potentially maximally distant from, the "now". That is to say, *validation* defines the *hic et nunc*, both the "here" and the "now", as being circumscribed within the purview of the situation being described, while *potentiality* conceptualizes the notion of beyond the "here" and "now" of the given narration, again in either spatial or temporal terms.

To investigate this issue further, let us look next at the use of both 'up' and 'down' as adverbs, where by modifying the nature of a verbal activity, the temporal aspect of these archetypes comes into play in an even more evident way. The word 'up', for example, is especially fertile ground for producing a variety of "different" kinds of meanings, clusters of senses that appeal to our rational take on meaning, all of which ultimately point to the same underlying general meaning embodied in the archetype of *potentiality*, of looking beyond the given situation. One can ascertain, for example, a group of senses that constitute what Tyler and Evans term a quantity cluster. (Tyler and Evans 2003: 138–140) These include the "more" sense: e.g. 'turn up the volume', 'fatten up the calf', 'plump up the cushion'; the "improvement" sense: e.g. 'brush up your German', 'read up on British history', 'get dressed up'; and the "completion" sense: e.g. 'gas up the car', 'drink up the wine', 'close up the shop', 'time is up'. It is not difficult to see that all of these senses in one way or another point beyond the given situation to a potentially new one. You either have more of something, a better instance of something, or it is finished and you're necessarily in another situation.

We can apply the same reasoning with 'down', which is also said to contain a quantity cluster. This includes a "less" sense: e.g. 'slim down', 'water down', 'prices are down', 'turn the music down'; a "worse/inferior sense": e.g. 'be down on fad diets', 'down on your luck'; and a 'completion" sense: e.g. 'battery's run down', 'down to the last moment/drop', 'two down and one to go'. All of these types point to an underlying meaning signifying that there is something of the given situation still involved, no matter how small or negative. Note that the sense of completion here is not the same as with 'up': the "now" of the situation still remains as a focal point of the activity.

What we need to do here, therefore, is ascertain how the conceptual archetypes associated with both 'up' and 'down' as adverbs allow us to predict why they occur with certain types of verbs and not others. Accordingly, we will analyze in what follows the meanings of verbs they combine with to determine what is motivating

the choice. In doing so, however, we must continually bear in mind that we are talking about the intent of the speaker in choosing one or the other combination, not the immediate physical situation that may be evoked, since that may seem to be the same in either case (as with the completion senses above). When treated properly in this manner, it should become evident that the archetypes involved do allow us to make predictions as to their manner of contextualization, in the sense that they tell us not what combinations will or won't occur, which we can never actually predict, but what ones are likely or unlikely to occur, for that is what the nature of the sign as a potentiality ultimately implies.

The evidence below is sorted into three groups: first verbs that can occur with both 'up' and 'down', to get a better sense of the contrast; then those that occur only with 'up'; and finally those that occur only with 'down'. Examples with obvious verticality are not included.

Verbs with both 'up' and 'down'

'burn up/down', 'tear up/down', 'break up/down'. Each of these verbs indicates a type of disintegration. When used with 'up', the disintegration is total and the focus is elsewhere, beyond the action of the verb. When used with 'down', on the other hand, the effect of the action remains as a vestige of its occurrence. When your house burns up or you tear up an agreement or you break up with your girlfriend, you are focused on the fact that the house is gone, the agreement is no longer in effect, and you and your girlfriend are no longer an item. On the other hand, when the barn burns down, a building is torn down, or your car breaks down, the objects may no longer physically be of any use but that is not the point; the effect of the action remains in consciousness as something burned, torn, or broken. When Reagan told Gorbachev to "tear down this wall", the phrase had lasting effect because it created a mental picture of the wall in pieces, and people avidly collected them as souvenirs.

'wind up/down', 'tie up/down', 'pack up/down', 'settle up/down', 'sit up/down', 'write up/down'. When a party winds up it is over, finished, and you move on; but when a party winds down, you picture it still going on and only beginning to terminate. When you tie something up, you are focusing on the product or the situation produced and what you may do with it anon, but when you tie something down, you focus attention rather on how successfully the tying was done. When you pack things up, you're ready to go, but when you pack something down you're concentrating on getting it well packed. When you settle up with someone, you've done what needs to be done and can move on, but to settle down means to get settled. When you tell someone to sit up, you want them to get into a different

position, whereas to tell someone to sit down means to tell them to assume a sitting position. To write something up or write it down are very close in meaning, but with 'up' there is more of a sense of getting it in a form suitable for something else. And of course to write someone up has little at all to do with the writing itself.

'close up/down', 'shut up/down'. Here the two possibilities are virtually indistinguishable because the verbs themselves indicate an action with finality no matter which way they are interpreted. In cases like this, the intention of the speaker means everything. Usually, when you close up or shut up the shop, you intend to finish the day and go home, whereas when you close down or shut down the shop, it is more likely that the shop will remain closed for an indefinite length of time, and to indicate that it will reopen one adds expressions like 'for the day' or 'and went home'.

Verbs only with 'up'

'start up', 'end up', 'fill up', 'use up', 'stir up', 'eat up', 'wake up', 'save up', 'think up', 'act up'. In all of these cases the action of the verb is presented as being over and the focus is on its aftermath. These combinations all have a sense of completion, and the effect produced by 'up' is to point to the outcome, the future situation that is created, that it anticipates. There is virtually no scenario one could think of where 'down' could have a meaning with these verbs, because there is no sense in which performing these particular activities could leave evidence of that kind of activity on which to focus attention; there is nothing reminiscent of these types of actions to focus on. What traces could acting, eating, using, or thinking in and of themselves leave that one could focus on? This, then, is just the sense in which the underlying, archetypal meanings of words like these allow us to predict which combinations are likely to occur and which not, without prejudicing the outcome in any specific direction.

Verbs only with 'down'

'calm down', 'water down', 'boil down', 'copy down'. In each of these cases the verbal process creates, as it were, an exemplar of its own activity: to calm down means to become calm; to water or boil down leaves evidence of what the watering or the boiling itself produces; and to copy down, of course, produces a copy. In each of these cases, moreover, it is virtually impossible to conceive of a situation where the action denoted by the verb could produce a situation beyond itself on which to focus attention. While the verb 'copy' may appear to be closely akin to the verb

'write', for example, writing *has* led to the possibility of an effect beyond its own activity, as in the expression 'write someone up'. But who could have predicted that? So far at least, there does not seem to be any sense in which 'up' could create a meaningful utterance when combined with the verb 'copy', but there is always the possibility that some situation could be found.

While the examples cited here constitute a relatively comprehensive sampling, they are by no means exhaustive; and there are no doubt potential counter-examples that aren't considered here, that would need explaining. One way of addressing this issue on a larger scale than is possible here was provided by Nadav Sabar in his demonstration of how a quantitative methodology can be applied to confirm monosemic analyses of this type. (Sabar 2018) Using the massive on-line Corpus of Contemporary English, he has successfully demonstrated how certain overarching distributional tendencies can be observed that confirm such an analysis, and that even the apparent counter-examples can be shown to support a general meaning in their specific contexts. Not having the space to provide such an analysis here, we rely on the fact that, while archetypes of meaning may constitute abstract concepts at the supra-rational level of consciousness, and are indeterminate in the sense of possessing a necessarily open-ended potentiality, they nevertheless are, and will be as we pursue this study further, defined in terms of space-time coordinates that have quite explicit definitions. It would remain, then, to determine what the contextual factors are that explain how any apparent counter-example conforms to the general meaning proposed.

Comparing time- and space-consciousness in prepositions

As we have just seen with the relation between the prepositions 'up' and 'down', the archetypes that set the conditions for the expansion of meaning, that best explain the paths taken in the contextualization of these signs over time, are in this case not archetypes of space- but of time-consciousness. Given that time-consciousness constitutes one of the cardinal achievements of human evolution, it is only logical that its existence in the form of archetypes of meaning would permeate the entire structure of language at the transpersonal level of consciousness where the process of conceptualization ultimately resides. In analyzing the general meanings of forms, however, we must consider the effects of both space- and time-consciousness on the structure of signs at this level, and not make assumptions in either direction. That is what we begin to do in this section.

To this end, let us consider next the uses associated with the English prepositions 'over' and 'above'. Both contain a sense of verticality, but again there is much more to their underlying meaning than spatial orientation. In both cases the sense of verticality supervenes on the same sense of beyond that we saw with 'up', but with an important difference in the case of 'above'. The archetype of *potentiality* is evident in both the tangible and intangible uses of 'over'. When you 'climb over' or 'fly over' something, you may be on or above it for a time, but the point is to get beyond it, a usage that the dictionary defines as "above and across so as to clear". Similarly, a bridge 'over the river' gets you to the other side, beyond the river. When you 'get over a cold' the spatial orientation disappears but the sense of beyond prevails – i.e., you get past it. When one is 'over 18' one is beyond the category represented by the number. To 'go over the plans' implies that you need to come to some conclusion. Utterances like to 'laugh over a good joke' or to 'fall asleep over the newspaper' carry a resultative sense of beyond – what happens once you've heard the joke or read at least some of the newspaper. In utterances like a 'victory over the enemy' or to 'reign over a kingdom', the sense of beyond is expressed in terms of superiority. This same sense of beyond is evident in the adverbial uses of 'over'. When you 'hand over the papers', you no longer have them. When 'the party's over', it has ended and you move on. When one 'goes over to the

enemy', one has changed places. The non-prepositional uses of 'over' also carry the sense of getting beyond something by re-doing it or doing it to excess: when you 'paint over' something you repaint it; when you 'think something over' you rethink it. When used as a verbal prefix, to 'overwhelm', 'overdo', or 'overreact' imply going beyond that activity by performing the activity to excess. The 'leftovers' are what remain beyond the meal itself. Less obvious, perhaps, but still explainable in terms of *potentiality* are examples like putting a cloth 'over the table', where the purpose of the activity is to cover the table so you don't see its surface anymore, and there most likely will be some 'overhang'. When you put a hat 'over your eyes', the hat extends out beyond the eyes to shield them from the sun. Finally, expressions like 'the party takes place over the weekend' or 'to stay over Saturday night' describe the time involved in more than merely durational terms; they provide the sense of boundaries, the limits beyond which the party or the staying will no longer be in effect.

The preposition 'above', while it certainly has connotations of verticality in certain contexts, has much the same overarching sense of beyond. A picture that hangs 'above the table' is clearly beyond the purview of the table; 'the floor above' is the one further on from this one; a 'head above water' is beyond the surface of the water; and so forth. The same sense of beyond is evident in the less tangible uses of 'above', where there is no verticality implied, where the relative position of objects is no longer relevant: e.g. 'above suspicion', 'above the noise', 'above all', 'not above cheating at cards', 'above average', 'above his pay grade', and so forth. While it is tempting to consider the less tangible uses of 'above' as metaphorical extensions of the notion "higher than" understood in a hierarchical rather than a strictly vertical sense, one does not need to invoke such an additional cognitive process to explain what is already inherent in the time-conscious general meaning of the preposition.

'Above' is systematically distinguished from 'over', however, by the fact that 'above' consistently expresses separation between the entities related by the preposition, something that 'over' does not do. This is where the first example of a genuine archetype of space-consciousness enters the picture, that of *separation*. There is never any contact between entities with the use of 'above', whereas with 'over' there may or may not be. If someone asks you to hang your coat 'over the chair', the first thing you think of is to put it on the chair, but if you were asked to hang it 'above' the chair, you would look to see if there was a hook or something on the wall. The sense of *separation* is equally evident in the less tangible uses of 'above' that we saw previously. The archetype of *separation* is what allows us to conceptualize the perception of independent entities, of one entity being distinct from another. It is this archetype, as we will discuss later, that establishes the third dimension in our spatial experience of reality.

This same archetype of *separation* is what distinguishes the preposition 'below' from 'under'. When something is located 'under the bridge', it is in some sense within the orbit of the bridge, in its shadow, sheltered, hidden, or in some other way connected with the bridge. But to say that something is 'below the bridge' indicates rather a spatial relation of relative positioning between objects, which could be at some distance apart. When you remark that someone has a mole 'under his eye', you associate the mole with the eye as an ancillary feature, whereas if someone has a mole 'below his eye', you perceive the two as relatively separate and equal features. If you have something 'under your coat', that something is within the purview of the coat and somehow influenced by it, hidden or protected in some way. By contrast if, as the tailor might suggest, your hands should extend 'below your coat', this is rather a statement of relative position vis-à-vis the bottom of the coat. If you live in 'the apartment below', that says nothing more than what floor you are on with relation to the one above; but if you live in the apartment 'under the neighbors', that conjures up the image of being affected by it, by noise or some other circumstance.

The meaning of an intimate relation that distinguishes 'under' from 'below' is itself not a spatial one. It is what we have previously described as a matter of time-consciousness, expressing various ways of being within the purview of the "now" that is being described in the given situation. This meaning is particularly evident in the less tangible uses of 'under', where it takes a number of different forms. It may imply being subject or liable to, controlled or bound by: e.g. 'under the influence', 'under the weather', 'under the knife', 'under arms', 'under fire', 'under one's breath', 'born under the sign of Saturn', and so forth. There is often a sense of being subsumed within something: when you're trying to locate a book, you may find it 'under biology'; someone can go 'under more than one name', etc. There is likewise the sense of belonging to a category (age, money, rank) but in a lesser capacity: e.g. to be 'under 18'; to cost 'under $20'; the rank of captain is 'under that of major'. And finally, a car can be 'under repair', signifying an ongoing action with regard to a car that is being subjected to repair. Examples like these make it clear that in contrast to 'below', 'under' is marked for the time-conscious archetype of *validation*.

Another preposition marked for the space-conscious archetype of *separation* is 'off'. If something is 'off the table', it is simply separate from it. When something are 'off pitch', 'off center', 'off color', 'off key', 'off limits', 'off duty', or when you are 'off your diet', 'off your game', giving testimony 'off the record', or a store is located 'off First Avenue', it is merely a matter of being in another unspecified space. Consider the difference between 'off' and 'up' used as adverbs. When you 'finish something up' (*potentiality*) you are poised to do something else, whereas when you 'finish something off' you are simply done with it, no longer associated with

it (*separation*). Similarly, when you 'clear something up' you are contemplating moving on now that it's clear, but when you 'clear off the table' you're simply in a space where you no longer need to be concerned with the table. There is, of course, the possibility when using 'off' that you could be thinking of what comes next, but that is not inherent in the meaning of the form, as it is with 'up'. When you 'take your coat off', you could be thinking of what you will do now that you no longer have it on, or you might simply be too warm and need to be away from it. When someone 'drives off', they are obviously going somewhere but 'off' itself simply implies putting distance between here and there. When something is 'three miles off', it is just in another place; when you 'sleep it off', you separate yourself from the previous condition; your 'day off' is the day away from work; and so forth. There is no implied anticipation unless given by the context, only a statement of dislocation, of *separation* pure and simple. So here again we have an archetype of genuine space-consciousness distinguishing 'off' from 'on', just as we saw with the prepositions 'above' and 'below' vis-à-vis 'over' and 'under'.

If 'off' indicates separation, 'on' is the counterpart that indicates what 'off' is separate from. Although 'on' is commonly used to indicate the vertical sense of "on top of", that sense represents only one relatively limited contextual variant, one generated by its occurrence in the context of a certain kind of surface. As soon as the nature of the object changes, we can immediately see that the relation established by the preposition encompasses a broader and more significant meaning, one which the dictionary describes variously as "supported by", "attached to", "covering", or "enclosing", depending on the type of object involved: e.g. 'sat on the chair', 'hung on the wall', 'ring on her finger', 'leaned on his elbow', and so forth. Indeed, one could find numerous adjectives to describe the relation, all of them pointing to the generalized sense of coextension with whatever phenomenon is established by the "now" of the utterance situation. A house that is 'on the sea' or 'on the main road' is not physically located on the sea or the road, it is rather coterminous with the sea or the road in a generalized sense. When you are 'on the train', you may be inside the train but the preposition doesn't specify that the way 'in' itself does, as we will see in the next section. It only indicates in a general sense where the activity given in the "now" of the utterance takes place. If you have 'a pen on you', it could be in any number of different locations, just somewhere connected with you as the subject of the given utterance. If the 'drinks are on you', it is a matter of responsibility that defines your relation to the events being described since there is no physical activity expressed. The sense of location disappears completely once the object of the preposition is no longer a person or a thing. Temporal expressions bring out particularly clearly the general meaning of concurrence with the moment set by the events in the given situation: e.g. 'on time', 'on schedule', 'on the hour', 'on May 29', 'on Tuesday'. 'On' may also express

the relation to whatever phenomenon – thing, attitude, motivation, etc. – constitutes the essence of the situation being described: e.g. work 'on a transmission', arrest someone 'on suspicion', do something 'on purpose'. The adverbial uses of 'on' actually represent or substitute for the situation or activity being expressed in the given utterance: e.g. 'the light is on', 'the chase was on', 'the party is still on', and most obviously, 'what is going on?' Or it may reinforce the progressive sense of an activity: e.g. 'move on', 'keep on complaining', 'get on in years', 'happen later on', etc. It seems fairly evident, therefore, that what underlies 'on' in all of its various manifestations is the archetype of *validation* that signifies concurrence with the events or things being expressed in the "here and now" of the utterance situation.

2.4

Further evidence of space-consciousness in prepositions

To this point we have considered only one archetype of space-consciousness, that of *separation*. We have suggested that this is the archetype which establishes the conceptual conditions underlying the human experience of perspective in a three-dimensional world, one which necessarily entails recognizing the relation between separate, independent entities. *Separation* is an archetype of spatial consciousness because all it does is create distance between two phenomena such that they can be identified as separate and distinct entities. The relation between phenomena inherent in the archetype, furthermore, is not by any means necessarily physical, but once again supervenes on a more profound sense of distinctness at the supra-rational level, one where space is conceived as a truly abstract construct, the result of the image-making property that allows us to conceive of a relation in a potentially infinite number of ways. It is this archetype that also describes, for example, the relation between the conjunctions 'and' and 'but' in English, as we shall see in the next section.

If *separation* represents the conceptualization of the third dimension of space-consciousness, it remains to consider how the other two dimensions are realized, the second and the first dimension. The preposition 'in' clearly indicates a significantly different type of spatial relation, a generalized sense of containment, specifically of a boundary or limits that define a phenomenon with respect to its participation in an utterance. Again, the relation itself is not necessarily physical; it can be of any kind: of space, time, or circumstance. In concrete situations one can be 'in the house', 'in bed', 'in the rain', etc., clearly contained within the limits set by the object of the preposition. In temporal situations something can happen 'in the night', 'in 2016', or someone can be back 'in two hours'. If you 'come in time', the limit set by the time establishes when you came. More generally, any circumstance can be conceived as having boundaries: 'blind in one eye', 'written in French', 'symphony in C', 'something in what you say', 'dressed in blue', 'in reality', 'broken in two', and so forth. As an adverb, 'in' simply establishes the boundary that defines the situation itself: 'join in', 'rub it in', 'short skirts are in', etc.

The archetype that governs the range of reference associated with the preposition 'in' in all of its contextualizations, therefore, constitutes a framing quality. It establishes the boundary or limit that sets a phenomenon off not by creating distance but by giving it outlines. Here, then, we have another potent image of the relation between phenomena, one that corresponds to the classic *two-dimensional* concept of figure/ground, where there is no separation, only an outline that creates a profile distinguishing a phenomenon from its background. The term we will use to identify this archetype therefore will be *delineation*, the feature or marking that frames the phenomenon being described by focusing on its outlines.

Consider next the preposition 'at'. What is remarkable about this preposition is its utter lack of any systematic characteristic that would define the nature of the relationship it establishes with its object. Dictionary headings for its various uses include such disparate notions as expressing position or motion toward ('at the corner', 'at school', 'arrive at the station', 'aim at the target'), a point in time ('at three o'clock', 'at dawn'), a point on a scale or range ('at boiling point', 'at one's best'), engagement ('at war', 'at work'), concern ('at odds'), a value or rate ('at $10 each'), with reference to ('at a disadvantage'), in terms of ('sick at heart'), and on and on. There is an utter lack of specificity with 'at' that distinguishes it, for example, from 'on', which we previously described as also relating to its object in a general way but with a definable sense of *validation*, of cohesion with the events being described that is lacking in 'at'. This explains why 'on' and 'at' hardly ever occur in the same situations. The rare instances where they do seem to involve location, where the use of 'on' produces a much more intimate relation than 'at'. To meet someone 'on the train' implies that the meeting took place specifically with respect to the train, whereas to meet someone 'at the train' could be anywhere in the vicinity, on the platform, in the station, or in the parking lot. The train in the case of 'at' is simply given as a vague or generalized reference point.

Now the utter lack of specificity associated with 'at' might lead one to conclude that it is the unmarked preposition in the system of English prepositions, much like the English present tense we described earlier. On the other hand, as Tyler and Evans note in a very telling manner, 'at' creates a *one-dimensional* relation where the object of the preposition is presented as simply a point without any further specification. (Tyler and Evans 2003: 179–80) We may enlarge upon this definition of a one-dimensional relation by noting that it is not necessarily the point but the lack of specificity that best defines the dimension. One dimensional images include, in addition to a point or dot, a line or, even more significantly, a surface with unlimited extension, one with neither boundaries nor separation. Within the class of one-dimensional images, therefore, a point or dot merely represents the minimal case. Taken as a whole, therefore, we may say that the multiplicity of possibilities (of points, if you will) and their lack of specificity constitute the

defining characteristic of the dimension. From this perspective, one dimensionality should be seen as the source of potentiality for further extension, a plurality of possibilities for eventual realization that remain unspecified. For this reason, we will call the archetype that defines the undefined multiplicity inherent in a one dimensional relation *plurality*. We choose this term specifically because of its implications for how the plural in languages ultimately needs to be understood, as we will demonstrate in the next section.

2.5

Plurality as the defining characteristic of one-dimensional phenomena

In order to properly understand the essence of *plurality* as an archetype of space-consciousness in language, we must first dispense with the notion that the plural as a linguistic category has anything necessarily to do with the rational process of counting. Here again we must distinguish between what appeals to our awareness of meaning at the alert end of the spectrum of consciousness, even (or especially in this case) the predominant or prototypical sense of counting, and the conceptual property, the archetype from which such senses are derived at the supra-rational level. As we have shown with respect to other linguistic categories, the plural as a grammatical category supervenes on a more profound conceptual construct, one of *plurality* conceived as undifferentiated and unspecified complexity in higher-order consciousness. When conceived in this manner as a one-dimensional construct, *plurality* explains much more than the plural alone in the way meaning is embodied in linguistic signs.

At the rational level of consciousness, where our linear sense of logic prevails, the plural would naturally seem to derive from the singular as a matter of counting objects in the real world, much as time is perceived as a linear flow from past to present to future. Number theory itself, however, tells us a different story. In number theory, counting is only one operation, indeed the lowest level one in the hierarchy of operations involving numbers, the one that relates to the way objects present themselves to our immediate awareness. As soon as we move beyond the positive numbers to negative numbers, this association begins to weaken. When we get to irrational numbers and ultimately to imaginary or complex numbers – e.g. the square root of a negative number – we are in an entirely different realm of consciousness altogether. This demonstrates that the quantitative aspect of number, which is grounded in the experience of sequential ordering, is a product of linear thinking that appeals to our conscious awareness, whereas number as a truly abstract phenomenon at the transpersonal level is ultimately a qualitative construct. As Charles Muses has put it, "numbers are…powers of transformation of which change in magnitude is merely the most elementary one. The essence of number is *qualitative*, not quantitative. Higher kinds of number are distinguished

from each other by their *nature*, their unique properties, and not by their magnitude. (Muses and Young 1972: 111, 125)

The hierarchy in number theory thus constitutes a virtual journey through levels of consciousness, where counting is the most primitive contextual variant of the qualitative construct that ultimately defines the concept of number at the supra-rational level. Viewed from this perspective, *plurality* as an archetype of higher-order consciousness would not be derived from singularity, from counting entities, but the reverse would be true: singularity would be derived from *plurality* by the isolation (*delineation*) of a particular entity from a background of unspecified complexity, of an undefined multiplicity of possibilities. *Plurality*, in other words, is the one-dimensional ground from which the two-dimensional image of figure/ground ultimately derives, a conclusion we will enlarge upon in Part 2.7.

If this is the way *plurality* is conceptualized at the supra-rational level, then we ought to find it operating in precisely this way in language, given the role that signs play in structuring consciousness at this more profound level. This is indeed what we do find when we look at the opposition between singular and plural from the point of view of what the signs themselves are telling us, as self-referential properties of the human mind.

One of the conundrums linguists have faced when the plural is assumed to signify more than one object in external reality, as it so often is, is how to explain those instances where this does not appear to be the case. From the perspective of sign theory, this should not even be a question because linguistic signs do not refer to objects in the real world; they operate self-referentially to contextualize aspects of their own meaning. The instances where this issue is said to arise include, for example, the first person plural pronoun being used to refer to a single individual, as with the so-called editorial or royal 'we', or when the doctor asks you, 'How are we feeling today?'. While these usages could be explained as the speaker including him- or herself deferentially with the addressee(s), such is decidedly not the case with the so-called polite use of the second person plural pronoun to refer to a single individual. This is a common form of address that occurs in French and Russian, for example, where one uses the plural form of the pronoun when addressing a person older or otherwise deserving of respect. We see this same phenomenon again when gender-neutral subjects in the singular are referred to with the third person plural pronoun: e.g. 'Someone phoned but they didn't leave their name'; 'If someone sees something suspicious, they should report it'. So these uses of the plural to refer to a single individual are common to all three personal pronouns. This same phenomenon also occurs when the plural form of the verb 'to be' is used in conditional and subjunctive sentences like 'If he were a doctor', 'Wish you were here', and so forth. We can extricate ourselves from this conundrum quite

straightforwardly provided we redefine the concept of plurality as a qualitative rather than a quantitative construct in higher-order consciousness.

There is a remarkable passage by Vladimir Nabokov in his autobiography *Speak Memory* that captures the qualitative sense of the so-called polite or formal use of the second person plural pronoun to refer to a single individual. One of the most astute observers of human language, he was recalling the occasions when his mother addressed him as a little boy, not with the expected second person singular pronoun *ty*, the familiar form that is normal in Russian when speaking to a child, but with the unexpected plural pronoun *vy*. His explanation is priceless, observing that this is something "my mother would do in moments of intense tenderness, when my temperature had gone up or I had lost a tiny [toy]", and then adding parenthetically, "as if the singular were too thin to bear the load of her love." (Nabokov 1989: 28)

What the signs of language are telling us in these instances is that *plurality* as an archetype of language is a truly abstract category capable of expressing not only quantity but also a variety of other qualities that add to the way in which a phenomenon is to be perceived. So in the above examples, the doctor wants the patient not to feel alone in the first person usage. An older person is addressed with the added quality of politeness or respect (or a child with added tenderness) in the second person usage. The subjects in the third person usages could be any one of either gender. And finally, the distancing from the "now" expressed by the past tense in the conditional and subjunctive uses is further accentuated by the plural form of the verb 'to be'. When *plurality* is understood in this higher-order sense, we are not adding apples and oranges because it is not a matter of counting, of referring to anything in the real world, but of expressing self-referentially the multifaceted nature of phenomena in whatever guise they may appear. This is therefore the proper way in which we should understand the plural generally as a grammatical category and *plurality* as an archetype of consciousness at the super-rational level.

If it is not enough to suggest how *plurality* understood in this more abstract sense operates in structuring a grammatical category like number, think of all the words in the English lexicon – the so-called collectives – that are defined by just this concept of *plurality*. Collectives constitute a subset of the lexicon whereby an unspecified plurality of constituents comprises a single, unified whole. They include such common English words as 'bundle', 'bunch', 'batch', 'cluster', 'group(ing)', 'assemblage', 'assembly', 'collection', 'set', 'assortment', 'series', 'gathering', 'congregation', 'company', 'crowd', 'alliance', 'union', 'association', 'family', 'society', and so on. The essence of a set of words like this is accurately captured by the archetype of *plurality*, signifying an unspecified number of components, in conjunction with that of *delineation*, providing the framing quality that identifies them as a unified whole.

The archetype of *plurality* occurs in conjunction with the other spatial archetypes in significant ways in other grammatical categories as well. Within the category of number, many languages contain not only forms for singular and plural but also for the so-called dual. The dual number creates the image of two distinct entities, and is therefore obviously marked for *separation* in addition to *plurality*. The category of conjunctions, as we noted previously, displays the same spatial relations as with number. English distinguishes between 'and' and 'but'. 'And' is marked for *plurality* in the sense we have defined it because it merely amalgamates. It simply conjoins two propositions, and any further specification of what or how is given by the context. 'But', on the other hand, expresses a contrast between two distinct propositions and is therefore obviously marked for *separation*.

The Russian language contains no fewer than four different conjunctions that illustrate particularly well the spatial relations described here: *i, da, a*, and *no*. The conjunction *i* expresses mere *plurality*, comparable to English 'and'. The conjunction *da* in Russian is a different kind of 'and', one that is not only additive but with the sense of amplifying what has just been expressed. The sense implied by the conjunction *da* is closer to English 'moreover', 'and furthermore', 'and besides': e.g. *šel on odin, da eščë v temnote* (walked he alone, and still in [the] dark) 'He was walking alone, and what's more, in the dark – and in the dark no less'. There is a well known Russian saying *bog znaet, da ne skoro skažet* (God knows, and not soon will tell) 'God knows, and he isn't about to tell'. You can't, in other words, add just anything with this kind of 'and'; it conjoins two clauses as a circumscribed whole, another two-dimensional image. The difference in Russian between *on i ja* and *on da ja*, both translating as 'he and I' in English, is precisely that in the latter case the two individuals are presented as if one. And of course *da* is also the word for 'yes' in Russian, the quintessential confirming additive. The conjunction *da* is therefore marked for both *plurality* and *delineation*. The remaining two conjunctions are both contrastive but once again with a consistent difference between them. The conjunction *a* is purely contrastive, distinguishing between two opposing clauses, marked for *separation* much like English 'but'. The conjunction *no* is not only contrastive but also unifying, contrasting (*separation*) while at the same time qualifying the contrast by creating a unity (*delineation*) out of the combination: e.g. *oni byli tam, no on ix ne videl* (they were there, but he them not saw) 'They were there but he didn't see them'; *oni pridut, no tol'ko esli on pridët* 'They will come, but only if he comes'; *èto vozmožno, no edva- li verojatno* 'It is possible but hardly probable'. These four conjunctions, therefore, utilize all three of the fundamental archetypes of space-consciousness, where *plurality* and *separation* are each in turn combined with *delineation* to form a well-ordered set.

There is yet another cardinal feature of language that demonstrates the role that *plurality* plays aside from the category of number, namely transitivity. A

transitive verb is one that directs its action onto an object. Many verbs in English, for example, can be either transitive or intransitive, depending on the context in which they are used: e.g. 'speak', which is intransitive in an expression like 'I spoke with him yesterday', but transitive in phrases like 'speak the truth', 'speak French', etc. Some verbs are inherently intransitive in that they do not take an object: 'fall', 'kneel', 'lie', etc. Others are inherently transitive because their very meaning implies the existence of an object in the context of the utterance, whether overtly expressed or not: 'need', 'tell', 'lift', 'bat', 'taste', 'touch', and so forth. It is this latter set that interests us here because inherent in the meaning of these verbs is the additional information about an object onto which the verb will be directed. Since the object need not necessarily be expressed in the context of the utterance, its existence must therefore already be implicit in the type of verb, constituting an additive element whose explicit nature is left unspecified, surfacing only when made manifest in the context of an utterance. This, then, is another form of *plurality* as we have been defining the archetype here, an unspecified complex of possibilities inherent in the meaning of a verb that can be realized with respect to any number of different objects depending on the context. While it is far from commonplace to think of transitivity as having something to do with plurality, it is precisely by defining *plurality* in the higher-order sense we have given it here that we are able to make such an observation, one that will become increasingly important as we pursue this investigation further.

Further evidence of space-consciousness in grammatical relations

Aspect in Russian

One of the common ways in which verbal grammatical systems are understood distinguishes between two kinds of meaning regarding how the action of the verb is presented, temporal and aspectual. In this view, categories of tense are said to relate in one way or another to the time that the action is perceived to take place, while aspect is generally considered to describe the *manner* in which the action is conceived. We have already seen how time-consciousness operates at the supra-rational level to structure categories of tense, so let us look now at aspect. We will demonstrate that, in languages where aspect is embodied in a formal relation between signs, it is grounded in an archetype of space-consciousness.

Conventional treatments of tense and aspect often conflate the two in structurally undisciplined ways. For example, the passé simple and the imparfait in French are traditionally called tenses, but the difference between them is also sometimes treated as one of aspect, where the passé simple is said to signify a single, completed act and the imparfait an extended one. In aspectual terms, the former is considered to be perfective and the latter imperfective. In much the same way, the '-ing' ending on verbs in English is sometimes considered to represent an imperfective aspect when used to create the progressive tenses. There is also the tendency to treat aspect as a universal property of language whether or not there is any systematic formal representation of it in the structure of the signs in a given language.

When aspect does exist as a systematic formal relation between signs in a given language, as it does for example in Russian, scholars generally agree that the distinction between perfective and imperfective verb forms constitutes a binary opposition where the perfective is marked and the imperfective unmarked. Our goal here will be to determine the precise nature of that marking and identify the archetype that defines that relation. To that end, the perfective is often said to present an action as "completed", but that emphasizes only one characteristic of the relation, what it says about the duration of an action. Bernard Comrie was correct when he proposed instead, following the work of the Russian linguist and aspectologist Yury Maslov, that the perfective presents the action as "complete",

as an indivisible or circumscribed whole, while the imperfective can describe an action in any number of different ways depending on how it is performed: as a continuous, habitual, progressive, or other type of action. (Comrie 1976: 18) It is the mark of the perfective that we will be concerned with here, for it represents a consistent and definable quality of verbs that is distinct from all the other ways in which a verbal action may be conceived. We will be able to show, through strict observation of the specific senses associated with each side of the aspect relation, that the archetype which systematically distinguishes perfective forms from imperfective ones is *delineation*, the conceptual property that frames a phenomenon as an indivisible whole by giving it outlines.

As with any archetypal property like this, the way it is manifested at the rational level requires careful scrutiny, for our immediate take on the contextual meanings that signs appear to represent, as we have already seen, may not accurately capture their underlying essence. For example, when the perfective is used with the present tense in Russian, it is considered to be one of the ways in which Russian expresses future time. But that is an unfortunately superficial way of viewing what the combination of perfective aspect and present tense actually conveys when considered at a more profound level of consciousness, as we shall see.

The basic structure of Russian tense and aspect forms may be illustrated by the following diagram, using the verb *pisat'* 'to write' in the first person singular present tense and masculine singular past tense forms. (Though not all aspectual relations are paired in this manner, this is the most general type that will suffice for our present purposes, to demonstrate that there is a consistent formal relation for the expression of the aspect correlation in Russian.)

	Imperfecive	Perfective
Present	*pišu*	*napišu*
Past	*pisal*	*napisal*
Future	*budu pisat'*	

Most perfective verb forms in Russian are derived from their respective imperfective counterpart by the addition of verbal prefixes, which are often the same as prepositions, here the preposition/prefix *na-*. Russian verbs are conjugated only in the present tense, the past tense being a participial form in *-l* which declines for gender and number. Of particular importance here is the fact that there is no separate form for the future tense in the perfective aspect. The only formal representation of future time is given by the compound construction with the future form of the verb 'to be' and the imperfective infinitive (*budu pisat'*). Nevertheless, because the combination of the perfective aspect with the present tense often produces the sense of future time, the perfective present (*napišu*) is often referred to as the "simple future".

Assuming that the Russian language has two future tenses, a compound one and a simple one, is from a structural point of view comparing apples and oranges. While future time is expressed consistently by the future tense of the verb 'to be' combined with an imperfective verb, the expression of future time is at best one of the contextual variants of the perfective present form of verbs, the sense that is derived from our rational take on reality that does not capture the essence of the form itself in consciousness at the supra-rational level. The sense we get that the perfective present represents future time derives from the fact that an action that is framed as an indivisible whole without any specification as to its method of performance cannot be on-going at the present time. What the perfective present does ultimately signify, therefore, is a single, circumscribed action which, from the perspective of the present, has not yet occurred.

For example, when one says *ja napišu emu pis'mo* 'I will write him [a] letter' using the perfective present tense, it may be taken as an expression of future time, but in fact what it implies is that I intend to or need to write that letter, something I haven't done yet, presented as a single, indivisible act. If, on the other hand, I wish to specify that I will in fact be engaged in that activity at a future time, one would use the imperfective future and say *ja budu pisat' emu pis'mo* 'I will write him [a] letter'.

The subtle but important distinction between a genuine future activity and one that is intended but not yet realized can be seen in the following examples where the perfective present is used instead of the imperfective future. In these examples an English translation with 'will' or 'shall' is less appropriate because the action is being perceived as provisional, conditional, or otherwise unrealized. (The following literary examples are from Forsyth 1970. Literal translations are in parentheses, followed by the English glosses.)

> *Ja eščë ne obedala. Zdes' i poobedaem.* (I still not have eaten [imperf. past]. Here and we eat [perf. pres.]) 'I haven't had lunch yet. We <u>can eat</u> right here.'
> *Budet očen' neploxo, esli kto-nibud' iz vas vystupit cejčas po ètomu voprosu.* (Will be [imperf. fut.] very not bad, if someone of you addresses [perf.pres.] now about this question.) 'It would be rather good if one of you <u>were to make a speech</u> now about this problem'.
> *Skol'ko vremeni on sjuda poedet?* (How much time he here comes [perf. pres.]?) 'How long <u>until he gets</u> here?'
> *Mne budet legče, kogda skažu emu.* (To me will be better [imperf. fut.], when I tell [perf. pres.] him.) 'I'll feel better when I'<u>ve told</u> him.'
> *Ona ždala, poka on ne pridët.* (She waited [imperf. past], while he not come [perf. pres.]) 'She waited for him <u>to come</u>.'
> *Durakami budem, esli ne pojmaem* (Fools we will be [imperf. fut.], if not we catch [perf. pres.]) 'We'd be fools if we <u>didn't catch</u> [him].'

Even an everyday expression like *sejčas pridu* (right now I come [perf. pres.]) could be translated into English as 'I'll be right there', but the forms themselves in Russian indicate rather something more like the English 'Hang on, I'm coming', where the present tense in English mirrors the use of the present tense in Russian, coming closer to the ultimate meaning inherent in the perfective present, which is of an intention to do something. In general, therefore, we can agree with J. Forsyth and other Slavists, that "the perfective presentation of an action as a total event is incompatible with the expression of contemporaneous action: an action expressed as a total event must either have taken place before the moment of speech [in our terms, before the "now" of the utterance situation] (when it will be expressed by means of the past tense) or its completion must still be in the future." (Forsyth 1970: 149; and references cited therein.)

Because the perfective aspect represents a single, circumscribed action, it can also be perceived at the rational level as producing (or not producing when used negatively) a result. Such a sense could surface, for example, when the perfective is used with the present tense in a negative construction, such as the last example above where the result of not catching the individual would make fools of us. Emphasis on the outcome of an action is in fact one of the primary contextual meanings of the perfective aspect when used with the past tense. The sense of result or effect in such cases is a natural consequence of the fact that the past tense removes an action one step from the "now" of the utterance situation and when coupled with the perfective aspect naturally focuses attention on its accomplishment.

The use of the perfective aspect with the past tense can therefore imply that its outcome remains in force when viewed from the vantage point of the speaker. A sentence like *Ja vzjal knigu iz biblioteki* 'I took [the] book out of [the] library' implies that I have it. In fact, a number of common expressions in Russian are appropriately rendered in English by the present tense when it is a matter of a state that remains in force because a perfective action took place in the past. This type of usage parallels the use of the present perfect in English (e.g. 'have gone') which also signifies an action that is still valid in the present. The glosses below use the English present perfect or the past tense with 'get' to approximate the actual Russian. (Examples and English translations again from Forsyth 1970)

> *my opozdali* 'We're too late.' (we got late)
> *ja očen' ustal* 'I'm very tired.' (I very got tired)
> *ja prevyk k ètomu* 'I'm used to this.' (I have gotten used to this)
> *èto mne nadojelo* 'I'm sick of it' (this to me has sickened)
> *on postarel* 'He looks older' (he's gotten old)
> *on s uma sošël* 'He's crazy' (he from his mind has gone)
> *reka zamërzla* 'The river's frozen' (the river has frozen)
> *on poljubil eë* 'He's in love with her' (he has fallen in love [with] her)

The perfective past tense is also used whenever it is a matter of one complete action following upon another, even if that action is something that had been performed repeatedly, which would otherwise trigger the imperfective. The perfective in such cases overrides iterativity, presenting the action as a circumscribed whole no matter how it was performed: e.g. *dokladčik vstal, kašlyanul pjat' raz, i skazal…* '[The] lecturer stood (perf. past), coughed five times (perf. past), and said (perf. past)…' (Comrie 1976: 27)

Finally, it is commonly observed that the perfective aspect is normal when giving commands – i.e., when used with the imperative in Russian. This, too, is entirely in keeping with the meaning of the perfective, presenting an action as a circumscribed whole without further specification as to its manner of performance. Normally a command asks someone to do something, not how to do it. Nevertheless, the choice always remains as the prerogative of the speaker to use the imperfective in commands, whenever one focuses on the manner of performance itself. For example, if a teacher asks the students to read some text as homework, s/he will normally use the perfective imperative: *pročitaete ètot rasskaz doma* 'Read this story at home'; but if the request is to read something aloud in class, the imperfective would be used since the teacher is interested in the students pronunciation: *čitaete, požaluysta* 'Read, please'. One could even phrase the homework request with the imperfective – *čitaete ètot rasskaz doma* – if the purpose is to spend time at home reading, rather than getting something done. The imperfective also normally occurs in negative commands, where the purpose is to tell someone not to engage in performing the process. But the perfective can also occur in negative commands when there is some urgency or concern that accomplishing the process would incur an unwanted result: *ne skažite emu ob ètom* 'Don't tell him about that'.

The whole idea of what is normal, therefore, should be considered as a statistical observation whose value is only to ascertain in what contexts a given sign is more or less likely to occur. It is then up to the investigator to determine what it is about the underlying meanings of the forms involved that would allow us to predict such an outcome. In the final analysis, the prerogative of the speaker to choose between one or the other pole of a sign relation in an entirely spontaneous manner can never be taken away by any formal rule of grammar. It is in the very nature of the sign relation as a potentiality in higher-order consciousness to provide such choices. In the case of aspect in Russian, the evidence certainly suggests that it is the spatial archetype of *delineation* – presenting an action as a single, unified whole by giving it outlines that distinguish it from a background of other possible ways of depicting an action – that best explains the choice the speaker makes between perfective and imperfective forms, and the implications of that choice.

2.7

The space-time continuum
in human consciousness

We have now identified three archetypes representing the three dimensions of space-consciousness, which we have labeled *plurality, delineation*, and *separation*; and three archetypes representing the three dimensions of time-consciousness, to which we have given the names *validation, dissociation*, and *potentiality*. Let us look more closely now at the nature of the hierarchy that they comprise.

As we have insisted throughout this study, the fact that we are dealing with archetypes conceived at the supra-rational and not the rational level of consciousness requires that we view the relations among them, the hierarchy that they comprise, in non-linear terms. Thus, as we have shown, the hierarchy that exists between the three archetypes of time-consciousness does not proceed in the normal linear fashion from past to present to future, but has the "now" (*validation*), both conceptually and evolutionarily, as the base from which the other two archetypes derive; and they in turn are related to one another by the degrees of detachment from the "now", *dissociation* being one step removed and *potentiality* being farther removed, potentially maximally distant. In a similar fashion, the archetypes of space-consciousness do not proceed in the linear fashion where *plurality* would be derived from singularity, according to our rational sense of counting and sequential order, but in the supra-rational sense of how the dimensions of space derive from one another. In this view, *plurality* represents the one-dimensional source from which an individual entity emerges by creating outlines (*delineation*) that distinguish it from its background. This in turn provides the condition upon which a second entity can be conceived by *separation* from the initial one.

Since we are ultimately talking about an image-making process here, perhaps it would be useful to invoke an image from everyday life that allows us to picture the progression of these spatial dimensions as we are presenting it here. Imagine that you are looking at the ocean, the surface of which appears to extend forever. The ocean is not only the ultimate source of water in nature, it is representative of a one-dimensional phenomenon, in this case a surface that appears formless yet contains within it an unspecified number of possibilities for what it eventually will produce: tide pools, clouds, rain, and snow. The next thing you notice looking at the ocean is the formation of a wave, an individual object or form that is

recognizable because of its shape, its outlines but which is not yet separated from its background, the ocean – the quintessential two-dimensional image of figure/ ground. Then as the wave approaches the shore and begins to break, it releases a plethora of individually recognizable droplets of spray that eventually evaporate or fall back into the ocean – a moment of three-dimensional existence where the droplets of water are now separated from the ocean and each other.

Finally, let us note that there is a very good reason why the hierarchy of archetypes identified by this type of analysis appears to be limited to just the three spatial and the three temporal ones. Its very structure suggests that it should constitute a closed but cyclical system, one that originates in the concept of *plurality* where the potential inherent in sign relations remains unspecified, and culminates with the realization of *potentiality* itself as the ultimate expression of the sign function. The structure of consciousness at the most profound, transpersonal level, therefore, utilizes all the dimensions of space and time on the path to its ultimate goal, the realization of the very potential that defines the essence of the linguistic sign. Thus the system is complete in and of itself.

This, then, is the kind of image-making structure that is embodied in the signs of language in the form of archetypes of meaning at the most profound, supra-rational level of consciousness. That such a hierarchical structure should mirror the space-time continuum in quantum physics, as we have mentioned on several occasions already, is surely no accident. Quantum physics tells us that as rational human beings we live in a Newtonian middle ground between the macro- and micro-worlds, between cosmic and sub-atomic reality. Our rational world is a linear one of cause and effect, where the independence of space and time prevail, and measuring and counting are facts of life. This is the level of consciousness where the signs of language appear in their context-dependent state, where polysemy dominates our thinking about differences in meaning. By seeking the ultimate correlates of meaning in the relations between signs in their pre-contextual state at a supra-rational level, we in effect enter into a quantum realm of meaning. We will continue this discussion in the Epilogue.

PART 3

Syntactic structure

The syntactic structure of sign relations

We have insisted throughout this study that the ultimate source of meaning in language resides in the relations between signs as organic properties of mind at the supra-rational level of consciousness. It is in this monosemic structure that the ultimate invariants of meaning are found. The differences we experience at the alert end of the spectrum of consciousness are produced by the contextualization of these relations, which brings them into awareness at the rational level where they are interpreted according to the context in which they occur. This process is one where the speaker chooses a sign on one or the other side of a sign relation – a sign marked or unmarked for one or more of the archetypes of meaning we have identified – and inserts it in a context. The sign relation itself, therefore, is an organic property that exists *in absentia* in the mind of the speaker, but is made manifest *in praesentia* by the process of contextualization.

The relation between a sign *in praesentia* (the one chosen) and its counterpart *in absentia* (the one not chosen) is what is called as a paradigmatic relation. A paradigmatic relation is one of substitution, a fundamental principle of structure in which the choice of one sign over its counterpart necessarily creates a difference in meaning. We have observed this process operating in the domain of grammatical meaning, where the choice of either the past tense or the present, the perfective aspect or the imperfective, the plural or the singular, or one case in place of another in a language with overt case forms, all necessarily produce a difference in meaning, one that is consistent throughout the language. We have also observed it in the case of prepositions, where the choice of one preposition as opposed to another likewise produces a consistent difference in meaning.

A paradigmatic relation may be diagrammed as [A::B], where A is the marked member and B the unmarked, which is to say non-A. Thus when using a verb, the speaker of English chooses between [A] the marked past tense or [B] the unmarked present, the relation defined by *dissociation*. Likewise, the Russian speaker chooses between [A] the marked perfective or [B] the unmarked imperfective, the relation defined by *delineation*. When using prepositions, the English speaker chooses between [A] 'above', marked for *separation*, or [B] its unmarked counterpart 'over'. In a paradigmatic relation, therefore, the sign chosen necessarily depends on the simultaneous existence of its counterpart in the mind of the speaker for

its meaning. It is in this sense that no sign has meaning apart from the relation that underlies it.

The difference between functional words like prepositions and grammatical categories proper is that while prepositions also constitute a closed category with limited membership, they act like lexemes in that the decision to use or not to use one is clearly optional. One does not have to choose a preposition to construct a grammatical sentence. But when one does, the archetypal structure of the system of prepositions underlies the choice. A grammatical category, on the other hand, is a highly restrictive one defined by the *obligatory* nature of the paradigmatic choice. One cannot use a verb in English without deciding which side of the tense relation to select (past or non-past), use a verb in Russian without deciding which member of the aspect relation to choose (perfective or imperfective), or use a noun in Russian without choosing among the various case relations defined by the archetypes we have described.

It is in just this obligatory sense that the relation between signs on the syntagmatic axis represents in its own manner a properly grammatical relation. Once one leaves the realm of morphology and enters the syntactic realm, however, it is commonly taken for granted that paradigmatic relations are replaced by syntagmatic ones, the sequential nature of sentence formation seemingly constituting a structure of an entirely different sort. Moreover, this structure is generally presumed to be governed by the logical rules of predication, where something is predicated of a subject, and attribution, where things are presumed to have qualities or attributes. Clearly, the logic being applied here is once again representative of the mind operating at the rational level of consciousness, the same level where time is perceived as a linear flow, number a matter of counting, and so forth.

Since the syntactic structure of sentences necessarily involves the order of signs in a linear string, explaining this structure from a sign theoretical point of view must eventually account for why one sign does or does not follow another. What we should be seeking, therefore, is a higher-order structure ultimately based on the nature of the sign relations themselves. Our assumption here is once again that our rational sense of predication and attribution must supervene on a more profound concept of sign relations as self-organizing and self-referential properties of language at the supra-rational level of consciousness.

By this reasoning, the order in which signs appear relative to one another on the syntagmatic axis ought to constitute a sign relation in and of itself. Since predication is ultimately a matter of a predicate or verbal complement modifying a subject, and attribution one where adjectives and adverbs modify nouns and verbs respectively, then the concept of modification should constitute a sign relation in its own right. Consequently, we define *modification* as a sign relation consisting of a modifier and a modified, where the order in which the modifier and the

modified occur defines the relation. The contextualization of such a relation, then, would assume the same paradigmatic character as in morphology: a relation of substitution where a syntagm consisting of one sign modifying another in a particular order *in praesentia* necessarily implies the existence of its counterpart *in absentia* in the mind of the speaker, where the modifier and the modified are in the reverse order. As a genuine sign relation, moreover, one of the orders must be marked and the other unmarked by the archetype that ultimately defines the relation as a supra-rational structure.

Referring back to the previous diagram of a paradigmatic relation at the morphological level, the *modification relation* may now be defined as a sign relation with the parallel structure [XY::YX], where XY = A, the marked member, and YX = B, the unmarked member (i.e., non-A). It is this basic relation, moreover, that governs the concatenation of signs at every level of structure in a language, from the level of immediate juxtaposition, where modification creates a larger conceptual whole, which itself then partakes in the same relation at the next level of sentence structure, and so on.

When we analyze the structure of sentences in a given language in this manner, what we actually find is not only that the juxtaposition of modifiers and modifieds consistently displays the characteristics of an opposition between a marked and an unmarked order, but that the marking itself is governed by one of the archetypes of meaning that we have previously identified. It is that archetype that defines the modification relation for the language in question. Furthermore, the fact that speakers must necessarily choose between the marked or the unmarked member of the modification relation in order to construct an utterance demonstrates that the modification relation is a genuine grammatical relation in the same obligatory sense as those at the morphological level. The choice, moreover, is anything but a purely formal one governed by the existence of some fixed rule as in theories of universal grammar. It is a properly semantic one governed by an archetype of meaning contextualizing the essence of a properly paradigmatic sign relation in a completely self-organizing and self-referential manner just as in morphology.

In order to justify the claim that syntactic structure is based on the same fundamental paradigmatic principle as in morphology, we must also be able to demonstrate that the elements in the juxtaposition of modifier and modified do not, in the mathematical sense, commute – that is, that they are not interchangeable without a systematic difference in meaning. The non-commutability of the elements in a modification relation is fundamental to the concept of language as a self-organizing system and represents another significant point of departure of the present approach from conventional approaches to syntax. It is often assumed, for example, that because there is no immediately evident difference in reference between phrases like 'John came out' versus 'Out came John', that the order of signs

in an utterance does not necessarily carry any systematic difference in meaning, only at best a stylistic one. But in a sign-based theory of meaning, judgments about where the ultimate locus of sameness and difference lies cannot be based on subjective impressions that appeal to our sense of difference (or lack thereof) at the alert end of the spectrum of consciousness. They must reside in the higher-order distinctions created by the sign relations themselves, where the order of elements always has the *potential* to make a difference.

We can use number theory again to support this view of non-commutability as a fundamental principle of paradigmatic structure. Ordinary numbers, those that correspond to our immediate awareness of things in material reality, do commute. It makes no difference what order the numbers are in when an operation like multiplication or addition is performed. Either sequence will produce the same result. Thus $2 \times 3 = 3 \times 2$, just as $2 + 3 = 3 + 2$, and so forth. In the defining case, with ordinary numbers, $(2 \times 3) - (3 \times 2)$ always equals zero. Sign relations, on the other hand, occurring as they do at a higher order of consciousness, have properties more like those of matrices in algebra, which do not always commute (have the same value in either direction). In matrix algebra, $(A \times B) - (B \times A)$ may not always be zero because $A \times B$ can give a different solution from $B \times A$.

It is this property of numbers that has made matrix algebra the natural language of quantum physics. Matrices have proven indispensable to the understanding of phenomena in the quantum realm, where the observer cannot be separated from the observation, and it makes a difference in which order measuring operations are performed. Thus, for example, if one first measures the velocity of a quantum particle and then measures its position, the result obtained will be different from what it would be if the measurements were performed in the reverse order. (Peat 1990: 35–40). Likewise, when the conceptual properties of human language are treated as sign relations, we, like the physicist, enter a different phenomenological order, the quantum realm of meaning. In this higher-order realm of existence, the sequence in which operations are performed does make a difference, and the myriad constructions like 'meat and potatoes', 'black and white', 'the king and the queen', 'up and down', whose elements are not interchangeable without a recognizable difference in meaning, however inconsequential we may deem them to be, expose the fundamentally matrix-like character of syntagmatic concatenation. The higher-order logic of sign relations thus obliges us to acknowledge non-commutability as a latent characteristic of the juxtaposition of signs generally, and an essential condition of modification as a fundamental linguistic process.

Ultimately, by viewing linguistic activity as a process of sign formation, we can appreciate the capacity inherent in the organic logic of signs themselves to structure all facets of their contextualization. Sentence structure can then be understood as a complex of sign relations built hierarchically from the basic unit of

modification, itself conceived so as not to interfere with the autonomous capacity of individual signs for contextualization but to enhance their creative potential, their freedom to concatenate and therefore signify in any mode of being. This essential freedom is what permits sentences like "Colorless green ideas sleep furiously" to be meaningful, to be constructive of a reality that only signs themselves can generate, as long as they obey the general principles underlying the structure of the modification relation inherent in a language.

As we shall see in the analyses that follow, it is the archetype of meaning which defines the modification relation in a given language. Now it is important to understand exactly what this implies about the concept of contextualization that lies at the heart of how signs generate meaning. Up to this point we have been at pains to stress the freedom inherent in the speaker's ability to use the power inherent in sign relations to create contexts without regard to any perceived relation to real world properties. We have also insisted that since the sign relation is by definition a potentiality, and the contextualization process a matter of probability, one cannot predict in what contexts it will or will not occur. But the freedom inherent in the concept of sign relation cannot be completely open-ended or the resulting contextualizations would risk becoming utterly chaotic and incomprehensible. So there must be some constraints on the system, and this is precisely where the modification relation plays the crucial role.

As we shall see in the analyses that follow, it is the archetype of meaning not that defines the modification relation in a given language that sets the terms for contextualization in an orderly and self-sufficient manner. This is a prime example of the self-referential property of signs at work, where one type of sign, the modification relation, regulates the contextualization of signs generally in a language. As a sign relation itself, moreover, the modification relation is not a static rule either. It is an organic property of mind that evolves along with the overall ecology of the language.

Once we have recast the approach to syntactic phenomena in this manner, moreover, we can begin to understand the proper place of predication, and its corollary attribution, in the larger context of sign formation as a conceptual process. It is the properties of the underlying sign relations that create the conditions which permit the expression of concepts such as predication and attribution at a level where the mind can consciously manipulate them. Thus all forms of linear thinking, be they the Western conceptualization of time, the materialist notion of number, or the logician's preoccupation with predication, ultimately supervene on a higher-order process of sign formation.

Let us apply these principles, now, to the analysis of word order in English.

The modification relation in English

It is commonplace for linguists to note that English is an SVO language, since the predominant order of elements in an English sentence is subject, verb, object. Moreover, speakers of English tend to identify which is the subject and which the object in actual speech situations by this statistically preponderant positioning of noun phrases vis-à-vis verb phrases in an utterance. In terms of modification relations, it is evident that the word order associated with predication in English represents a relatively consistent positioning of the modifier after the element it modifies, where the predicate phrase (verb + complements) modifies the subject, and the complements in turn modify the verb. This word order is opposed, also relatively consistently, to the word order at the level of attribution in English, where in a noun phrase, for example, adjectival modifiers normally precede the noun they modify. From this evidence, therefore, one might logically conclude that predicate modifiers follow the element they modify whereas attributive modifiers precede the modified, both in a relatively fixed manner that can be represented fairly straightforwardly in a purely formal, rule-governed approach. Any instances of the opposing word order in each case can then be (and often are) treated as exceptions to the rule.

Once again, however, we must challenge the assumption that the grammatical pattern of a language is subject to such hard-wired rules and treat the opposing word orders, no matter how infrequently they may occur, not as exceptional but rather as evidence of the speaker's prerogative to choose one or the other pole of the modification relation. Then we can investigate what consistent conceptual property could account for the difference as the probabilistic outcome of the contextualization process. We cannot stress enough the importance of this fact in appreciating the view of language being put forth here, for this is precisely the point at which the potentiality inherent in the modification relation asserts itself. While one word order may be statistically predominant in attribution and the other in predication, there must be something more significant at work here that establishes the *probability* that predicate modifiers will tend to occur in post-position and attributive ones in pre-position, something that specifically has to do with the nature of the underlying modification relation that governs the order of signs in an English sentence.

Note that this is the same reasoning that we followed in the case of so-called verbs of domination in Russian, which tend overwhelmingly to occur with objects in the instrumental rather than the accusative case. There we concluded that the statistical skewing was due to the probability that the instrumental is more likely to occur given the general meaning of the instrumental, but the accusative would also occur whenever the conditions meet the general meaning of the accusative. So we conclude here as well that the speaker's right to choose one word order over another in both predication and attribution must ultimately be governed by the invariant conceptual property that defines the marking relation between the two possible word orders. The issue then becomes, what is the nature of this sign relation such that it produces the probability of one word order or the other occurring more frequently in attribution versus predication?

Some years ago, the Harvard linguist Dwight Bolinger made one of his many astute observations, challenging the prevailing view that there is no significant difference in meaning between active and passive sentences, despite their generally referring to the same factual situation. (Bolinger 1977: 9–10) He noted a whole series of circumstances in which an active sentence does not normally have a passive counterpart, and he sought the reason why. One can say, for example, 'This bridge has been walked under by generations of lovers', but it would be strange at best to say 'This bridge has been walked under by the dog'. Likewise, we would say 'The pages were turned by George' but hardly 'The corner was turned by George'; or 'I was approached by a stranger' but not 'I was approached by a storm'. The difference, Bolinger concluded, lies in the fact that the situation – that is to say, the predication – has to represent "something actually DONE TO something. The speaker has to be thinking of a patient that is somehow directly affected by the action." In other words, passivization "demands access to the speaker's intentions, to the meaning of whether or not an effect is produced" in the given situation. Thus the storm doesn't affect the subject like the stranger does; George doesn't do anything to the corner but he does to the page; and generations of lovers have defined the bridge as a place where lovers go, but a particular dog – 'the dog' – would not likely have any such relation to the bridge.

Bolinger's conclusion about an effect needing to be produced in the given utterance situation is particularly significant because it is not by any means limited to passive constructions. It explains a whole range of syntactic phenomena in English regarding the way in which modification operates. Take, for example, those instances where an attributive adjective occurs after the noun it modifies rather than in the normal pre-posed position. Something must be motivating the switch, and that is due precisely to an effect being produced that is unique in the given utterance situation. We typically say, in a manner that would be true of any such situation, 'They conferred behind *closed doors*'; but if we say 'They conferred

with the *doors closed*', we are thinking about an unusual situation where the doors being closed says something that makes the situation unique. The more situation-specific the modifier appears – that is, the more it produces an effect unique to the situation described – the less likely it is to occur in the usual pre-posed position where its meaning is more generically descriptive. Thus the adjective would not be pre-posed in an utterance like 'He walked into the room with his *fly open*' because the effect of having one's fly open would definitely be unique in such a situation. To pre-pose the adjective in such a case would require a more expected circumstance: if, for example, his fly being open had already been established in the larger context of the utterance. Similarly, 'They found the *cat dead*' clearly suggests an effect uniquely created in the given situation, while 'They found the *dead cat*' suggests that they were looking for a cat already established as dead. Substituting the indefinite for the definite article in this case changes the meaning of both, but still leaves the distinction signaled by the position of the adjective invariant: 'They found a *dead cat*' describes the type of cat they found (cf. 'They found a black cat'), whereas 'They found a *cat dead*' invites one to inquire about the circumstances involved (e.g. 'They found a *cat dead* by the side of the road'). Likewise, 'They painted the *barn red*' describes what happened to the barn in the specific utterance situation, whereas 'They painted the *red barn*' provides only enough information to identify which barn they painted.

Since post-posed attributive adjectives seem to have some sort of predicative flavor, one might still be tempted to derive them from predication as a purely formal matter, as scholars have done; but there is clearly something semantically more significant going on here. An utterance like 'A *man unhappy* can be hard to please' seems perfectly normal, while one like 'A *man unhappy* spoke with me yesterday' sounds strange at best. An adjective like 'unhappy' will seem appropriate in postposition when its meaning has an effect that is consonant with the specific conditions being expressed in the utterance. Since being hard to please can very well be a property predicated of someone who is unhappy, the first example appears normal. But merely speaking with someone bears no conceivable cause and effect relation to being unhappy, and the second sentence sounds peculiar at best.

It is also significant that adjectives which are themselves qualified by an additional phrase normally occur in post-position: e.g.. 'a complexion *white as snow*', 'a person *young at heart* ', 'a glass *broken beyond repair*', 'his shirt *covered with mud*'. Such compound modifiers express conditions that uniquely qualify the nature of the given situation.

Bolinger also noted another peculiarity of English adjective placement, that despite the prevalence of attributive adjectives to occur before the noun they modify, there is an apparent prohibition on pre-posing attributive adjectives that begin with the separable prefix 'a-': e.g. 'asleep', 'awake', 'alone', 'away', 'around',

'agleam', 'across', 'aghast', 'aware', and so forth. (Bolinger 1971) The 'a-' in these adjectives is separable in the sense that the roots of these adjectives also exist as independent words ('sleep', 'lone', 'round', 'gleam', etc.) or else form other words without the initial 'a-' ('ghastly', 'beware'). Utterances like *'the asleep child', *'the away boss', or *'the ajar door' do not normally occur; whereas other adjectives where the initial 'a-' is not a separable prefix readily do so: e.g. 'the astute observer', 'the above example', 'the ardent fan', etc. This observation has since been extended by other scholars, most recently by Charles Yang, who provides a comprehensive list of these adjectives, complementing one previously enumerated by Larson and Marušič (Yang 2015: 940; Larson and Marušič 2004: 270.)

Yang notes that the separable prefix 'a-' in these adjectives resists attributive usage in the same way that so-called locative particles like 'present', 'out', 'over', 'on/off', 'up', and 'here/there' do. One can say 'the cat is out' but not *'the out cat', 'the game is over' but not *'the over game', 'the light is on/off' but not *'the on/off light', and so forth. So the question becomes, what do words with the separable prefix 'a-' and locative particles have in common semantically that makes them resist pre-posed attributive modification? The answer is essentially the same as that initially suggested by Bolinger, that an effect is produced by these words that is unique in the given situation, which is precisely what we are proposing as the meaning inherent in post-posed as opposed to pre-posed attributive modifiers in English generally. To use these particular words as generic descriptive devices, as they would be if used in pre-posed position, would be to create a situation that is semantically dubious.

But like any adjective, they could occur in pre-position if the modification had already been established in the larger context of the utterance, making the reference anaphoric and therefore more descriptive. So if one had already established that a certain batter is 'up' in a baseball game, one can subsequently refer to him as the 'up batter' as opposed to the one on deck. Likewise, if there are two cats, one of which has been established as asleep and the other awake, there is nothing keeping us from referring to them as the 'asleep versus the awake cat'. Anaphora, as we shall see in greater detail when we consider predicative modification, is a common device for pre-posing predicative modifiers as well. Furthermore, any one of these words can comprise a purely descriptive and therefore legitimately pre-posed attributive modifier when combined with another descriptive modifier: e.g. 'a frequently away parent', 'the ever present advisor', 'an up and coming star', 'the once and future king'. (Yang 2015: 940) In other words, anaphora on the one hand or combination with additional modifiers on the other reduces, if not eliminates, the effect produced by these words that normally defines them specifically with respect to the given situation, making them more purely descriptive and therefore legitimate candidates for pre- as well as post-position.

Given the consistent marking associated with post-posed modifiers of pro-
ducing an effect unique to the given situation, it is not at all surprising that we
should therefore find predicate modifiers themselves overwhelmingly occupying
the position after the subject they modify, for they tend naturally to express the
production of a result unique to the given utterance situation. But predication
itself does not by any means necessarily entail producing an effect, and we do
find predicate modifiers occurring in pre-position as well. That these cases are
relatively rare does not, again, imply that they are exceptions to some fixed rule of
grammar. Rather, as with any sign relation, their occurrence needs to be explained
in terms of the speaker's motivation in choosing one or the other side of a sign
relation, according to the difference in meaning inherent in the relation.

For example, virtually any *intransitive* predicational construction has the
potential of occurring before the subject: e.g. 'Out came John with a gun in his
hand', 'Up the river sped a boat', 'On the chair lay his favorite dog', 'Over the mantle
hung a portrait of his father'. One might be tempted to explain such occurrences
as merely stylistic, but that only keeps us from appreciating in what way the power
inherent in the modification relation itself is being exploited. Pre-posing predicate
modifiers in situations like this attenuates the uniqueness of the effect that is
normally produced by post-position in one way or another, in this case again by
describing a situation the grounds for which has already been established in the
larger context of the utterance. In these examples we presumably already know
something about John, have already been concerned with the river and the chair,
or have already begun learning what the room looked like. Once a predication is
embedded in a larger context like this, it loses its uniqueness. Thus pre-posing
predicate modifiers in situations like this produces the same outcome as pre-posed
attributive modifiers.

It is true that pre-posing predicate modifiers is rather rare and more often
than not occurs in literary texts. But that in itself says something about the na-
ture of the modification relation in English, that it can be exploited for stylistic
purposes like this. Such situations are not "merely stylistic"; they are the result of
writers' taking advantage of the systemic conceptual property embodied in the
modification relation that governs word order in English at the most profound
level of consciousness.

Below are examples of pre-posed predicate modifiers, arranged according
to the manner in which they exploit what is clearly the unmarked side of the
modification relation, where producing an effect unique in the given utterance
situation is attenuated or even neutralized. There are probably other ways in which
these examples could be organized, but grouping them according to whether they
are either generically descriptive or anaphoric underscores the parallel between
predicative and attributive modification in this respect.

Primarily descriptive, or in some cases generalized beyond the given situation:

'A mighty fortress is our God.'   (Church hymn)
'Pleasant was the decreasing weight of the English collapsible tub.'
                                                   (Nabokov, *Speak Memory*)
'I can only explain my behavior then by the mechanism of that dream vacuum
wherein revolves a deranged mind.'   (Nabokov, *Lolita*)
'With fear come the lies and the justifications that …lower our self-esteem.'
                                            (Azar Nafisi, *Lolita in Tehran*)
'…and forever shall I see…the compulsory sign in black letters: RELIGIOUS
MINORITY.'   (Azar Nafisi, *Lolita in Tehran*)
'He pondered his options, were he forced to leave the police force.'
                                   (Henning Mankell, *The Man Who Smiled*)

Anaphoric, referring back to a previously established situation or individual:

'Had it not been for the war…'   (Azar Nafisi, *Lolita in Tehran*)
'Very ancient, too, were the beautiful sideboard panels…in the dining room.'
                                                       (Nabokov, *Pnin*)
'And now comes that bicycle act…or at least my version of it.'
                                                   (Nabokov, *Speak Memory*)
'…the mail received at our St. Petersburg address; among it was that letter
from Tamara.'   (Nabokov, *Speak Memory*)
'She it was to whom ads were dedicated.'   (Nabokov, *Lolita*)
'Both doomed were we.'   (Nabokov, *Lolita*)
'I am not a courageous man, he thought. Least of all am I a police officer with
a disregard for death.'   (Henning Mankell, *The Dogs of Riga*)
'Nor was he to get the chance to try it now.'   (Donna Leon, *Dressed for Death*)
'This is in part because of his own timidity; eager he may have been to pursue
a figure of speech to its unnatural conclusion.'
                     (Anthony Lane, "Go Ask Alice", *The New Yorker*, June, 2015)
'He had another ten year run, did Fournette.'
                                       (Sports broadcast, September 2015)

Anaphora is frequently expressed by the deictic adverbs 'so', 'here', 'there', 'then',
when they refer back to a previous situation:

'There but for the grace of God go I.'   (Popular saying)
'There goes my baby'   (Popular song)

'And there came an afternoon in November when…'

<div align="right">(Alan Furst, Mission to Paris)</div>

'She continued to laugh, had to lean back against the arm of the sofa, so help-less did her mirth render her.'   (Donna Leon, Death in a Strange Country)

'…so monstrous was my appetite for that miserable nymphette.'

<div align="right">(Nabokov, Lolita)</div>

'It was then that began our extensive travels all over the states.'

<div align="right">(Nabokov, Lolita)</div>

'Here shall John always stumble; there shall Jane's heart always break'

<div align="right">(Nabokov, Lolita)</div>

Reported speech, word order commonly used after quotations:

'Quoth the Raven, "never more"'   (Edgar Allen Poe)

We can conclude from these examples, therefore, that pre-position of the modifier in both attribution and predication alike is indeed the neutral or unmarked word order, and post-position the marked. Moreover, the nature of the marking, that of producing an effect that is unique and therefore fully validated in the "now" of the situation being described certainly suggests that it is the archetype of *validation* that defines the modification relation in English.

Let us look at other types of modifiers now to appreciate the systematic function of this relation. For example, negative adverbs and adverbial phrases occur in pre-position when they emphatically deny the effect being produced in the utterance situation.

'Never *have I* seen such a sight'
'Not once/only once *did he* offer to help'
'Nowhere *was that* made clear'
'Rarely/seldom *does he* show any emotion'
'Not even something as tiny as that *could he* have.'

<div align="right">(Gillian Flynn, Dark Places)</div>

'Not for a moment *did she* doubt that they'd drop the pressure in the room'

<div align="right">(Jussi Adler, Keeper of Lost Causes)</div>

It is significant in these cases that when the adverbial element is fronted, the lexical form of the verb remains in its normal marked position modifying the subject, and a so-called auxiliary or modal verb form is inserted. The lexical form has to be in its usual place to identify the nature of the action whose effect is being restricted or denied; and the added auxiliary is needed in order for the adverb to have a verbal

element to modify once inversion takes place. The same is true for 'wh-' questions in English: e.g. 'He went' vs. 'Where/when did he go?'; 'He said' vs. 'What did he say?'; etc. The lexical form of the verb remains in post-position as the predicate modifier of the subject, identifying the type of action being questioned, while the verb 'do' acts as a proxy for the verb now that inversion has taken place. The verb 'do' also acts as a proxy in yes/no questions: e.g. 'He came' vs. 'Did he come?'. Yes/no questions cannot be created by simply inverting subject and verb, since that would neutralize any effect the predication could have and leave a semantically empty sentence. The verb describing the action has to remain in its normal post-position modifying the subject to establish the relation.

We can observe the same phenomena occurring with adverbial modification generally in English. Manner adverbs, for example, because they normally qualify how an action is performed in the given situation, tend to be post-posed: e.g. 'He acted suddenly', 'He spoke loudly', 'He did the job well'. The same is true for temporal or spatial adverbs with inherently deictic connotations, which makes them natural candidates for post-position: e.g. 'He came here', 'He went there', 'He woke early', 'He arrived late', and so forth. By contrast, other temporal adverbs like 'always', 'never', 'rarely', 'usually', tend to appear immediately preceding the main verb in the unmarked position, since they are not situation specific. They merely describe the frequency with which an action normally occurs: 'He rarely went there', 'He always arrives late', 'He never lies', 'He usually takes the bus'. There are of course "exceptions" to such tendencies, confirming again the speaker's prerogative to choose, but these still follow the marking of the relation. Thus the less specifically manner-oriented an adverb is, the more likely it will occur in the position before the verb. Expression like 'He suddenly opened the door' or 'He loudly proclaimed his innocence' say as much about the disposition of the subject as the manner in which the action of the verb was carried out.

One final note regarding the position of post-posed modifiers in English, that of direct and indirect objects as complements of the verbs they modify within the verb phrase. Since English no longer has a case system to express the degree of involvement of an object with its verb, as we saw in Russian, it has only the modification relation, the relative placement of objects vis-à-vis the verb, to make the distinction. Consequently, there can only be two types of objects, direct and indirect, both marked for *validation* by their position as modifiers following the verb, but in differing degrees. The object further to the right – the more post-posed one – carries the heavier semantic value and is identified as the direct object, while the one less post-posed becomes the indirect object: e.g. 'gave him the book'. Then, in questions like 'What did you give him?', the direct object is pre-posed because its validity in the given situation is the one being questioned, and the indirect object then is the one left to follow the verb.

This same relative relationship can be seen in the case where a post-posed adjective is modified by an additional phrase, as in the examples previously cited: 'a complexion white as snow', 'a window broken beyond repair', and so forth. Here again both post-posed modifiers are marked for *validation*, but the additional phrasal complement is even more specific to the situation described than the initial adjective. The converse also holds true for multiple pre-posed attributive adjectives, in phrases like 'old run-down garden furniture', 'handsome blond young man', and the like. Since pre-posed adjectives are merely descriptive, the farther from the noun the more generic the relation posed by the adjective.

3.3

The structure of the English predicate

Having established the role of the modification relation in structuring predication and attribution in English generally, we are in a position now to consider the implications of this approach as it pertains to the internal structure of the predicate itself. The predicate structure of English provides an excellent laboratory for examining the mechanism of modification, especially in view of the fact that English verbal categories already constitute a predominantly syntactic structure composed of compound verb forms. Aside from the sole morphological opposition between past and non-past tense that we have previously described, all the other tense relations are expressed by the concatenation of signs that necessarily involve the modification relation. In order to appreciate how the signs that comprise compound verb forms actually function, however, we will need to re-examine many of the traditional notions regarding the structure of the English verb phrase and operate with a different set of assumptions. In particular, we will need to question the common notion that a compound verb is composed of a so-called "auxiliary" and a "main" verb, the one that carries the lexical meaning. We must instead analyze the signs and the modification relations involved strictly in terms of their own phenomenal structure, as evidence of the self-referential process of contextualization at work.

The observation that we made earlier about the past/non-past tense relation lying at the core of all the other tense categories is crucial here. In every English sentence there is only one verb that invariably carries not only this primary tense opposition but also the other essential grammatical relations of person and number. This verb is always the initial constituent of the verb phrase, and it makes no difference whether it appears alone, acting as its own main verb ('he comes/came') or as the so-called auxiliary ('he is/was coming', 'he has/had come', and so forth). Henceforth, we will call this initial verb the primary lexico-grammatical one, and it invariably occupies the position immediately adjacent to the subject (except for the occasional intervening adverbial modifier), even in cases of subject-verb inversion. As such, its placement is crucial to the establishment of the principal modification relation that defines the nature of English predication. This critical verbal element therefore constitutes the key modifier of the ultimate modified in an English sentence, the primary verbal modifier of the subject.

This being the case, we need to operate with the principle that the head constituent is in fact the one that carries the primary grammatical relations and establishes it as the principal modifier of the subject. Then the remaining constituents, including the conventional main verb, would in turn be properly identified as post-posed modifiers of the grammatically crucial initial one. Even more importantly, viewing the way in which the signs themselves structure the succession of elements in the verb phrase like this will allow us to see how the modification relation governs the succession of signs in the predicate as a whole, not just the verbal but the nominal and other elements as well, in one overall process of contextualization.

Consider the simple sentence 'He was dressed', which can have either of two interpretations depending on how the word 'dressed' is contextualized. In a sentence like 'He was dressed by his valet', the word 'dress' is in the position of what would traditionally be called the main verb, and 'was' the auxiliary. But in another context like 'He was dressed when she walked in', the so-called main verb is now the verb 'be', and 'dressed' is a predicate adjective. The fact that the passive sense in the first sentence can be derived from an active construction by a formal rule of grammar is from the standpoint of the signs involved irrelevant. What gives the sentence a passive sense is the use of 'dressed' in the context of the 'by' phrase. Positing different phrase structures for sentences like these and attributing the difference to some deep structure in the mind obscures the actual functioning of the signs being used. The type of difference that is perceived in context, which determines how a verb with the '-ed' ending is interpreted in a given utterance situation, must be distinguished from the type of difference embodied in the relation between signs in their pre-contextual state in higher-order consciousness. It is the indeterminate nature of the sign that is built into the structure of higher-order consciousness, not the disambiguation of messages. Disambiguation is what occurs at the rational level when the hearer uses contextual information, both linguistic and extra-linguistic, to distinguish the intended meaning from all the possible senses that could be signified by the sign in question, due to its fundamentally indeterminate nature.

Once we conceive of the contextualization process in this manner, we can appreciate how the marking of the modification relation ultimately operates to produce meaning in the English predicate. Given the marking associated with the post-position of modifiers, that of *validation*, each time a modifier is added in the string of modifiers following the initial lexico-grammatical element of the verb phrase, it further specifies the meaning of the preceding element (which has now become its modified) with respect to the situation being described in the given utterance. It is in this manner that the archetype of *validation* contributes naturally to the disambiguation of the otherwise inherently indeterminate meaning of the individual signs involved. Most importantly, this holds true no matter what type of

modifier is involved in the structure of the predicate. Thus the same marking that identifies nouns as direct or indirect objects because of their position as modifiers following the verb they modify, as we saw previously, also functions to establish the contextual meaning associated with any other part of speech acting as a post-posed modifier, including within the verb phrase itself. Let us look more closely now at the structure of compound verb phrases with this in mind.

There are three verbs in English that regularly occur as so-called auxiliary verbs, what we are labeling the lexico-grammatical head in a compound verb phrase: the verbs 'be', 'have', and 'do'. These are undoubtedly the three most basic verbs in the language, and it is therefore no accident that they should function as the pivotal verb in a compound verb phrase, the constituent modified by all the other components post-posed to it in the predicate, including the traditional, so-called main verb. As such, therefore, the lexical meaning of each of these verbs is even more important to the construction of the compound verb phrase as is the lexical meaning of what is traditionally considered the main verb. Let us look now at the inherent meaning in each of these verbs and its role in the construction of verbal predicates.

It seems fairly evident that 'be' is the unmarked verb in the English verbal lexicon, indicating nothing but existence in the situation described. The sense of mere existence may be expressed directly with the infinitive form of the verb ('to be or not to be', 'the bride to be'), or with a conjugated form ('I think, therefore I am'). In its conjugated form, the verb 'be' may express the existence or occurrence of something given as a predicate attribute ('there is a house on the corner', 'dinner is at eight'). Most commonly the conjugated form of the verb serves to connect or attribute various kinds of qualities to the subject without adding any specific meaning of its own. These attributes may be of virtually any kind: an identity ('to-day is Thursday'), a quality ('he is kind'), an opinion ('I am against war'), a location ('he is in the garage'), a condition ('he is ill', 'he is confused'), and so forth. Most importantly for the present discussion, it is precisely this process that provides the grounds for the verbal connotations represented by the passive voice and the progressive tenses – the compound verbs formed with the verb 'be' and the past participle with '-ed' in passive constructions or the present participle with '-ing' in progressive ones. The only difference between these and any other potential predicate modifiers of the verb 'be' is that passive and progressive constructions are formed by verbal rather than other types of modifiers. In other words, the manner in which the signs involved contextualize their inherent meanings simply follows the process by which the modification relation operates in English. It is this structure that establishes the grounds upon which we interpret messages in terms of real world experience at the rational level.

Turning now to the verb 'have', the first thing to note is that it is a transitive verb, marked therefore, as we indicated previously, by the archetype of *plurality*, signifying the existence of an object as an added element inherent in the underlying meaning of the verb. Since the verb 'have' does not produce any action of its own, does not cause anything to happen, we conclude that it is simply the transitive counterpart of the verb 'be'. Unlike 'be', where the predicate modifier is presented as a quality *attributed to* the subject or an entity *equated with* the subject, the verb 'have', being transitive and marked for *plurality*, projects its inherent predicate modifier as an entity *in addition to* the subject. Thus 'have' can connect any kind of entity with the subject without making it a quality of the subject. It can express possession ('have a book'), a relationship ('have a brother'), a state ('have a bad cold'), an activity ('have an argument'), a feeling ('have a grudge against'), and so forth. Even when the predicate complement is a quality ('she has red hair', 'he has a broken leg'), that quality is not equated with the subject the way it would be if the verb 'be' were used, which would imply that the red hair or the broken leg actually defines the subject in a metonymical sense, as in a sentence like 'she was all red hair and lipstick'. The verb 'have' can also connect another action with the subject, as in so-called causative constructions ('have your hair cut', 'have a copy made'). This latter type is quite revealing, since it can produce passive meaning without the addition of a 'by' phrase, something that is required, either explicitly or implicitly, in order to create passive senses with the verb 'be'. This is because the transitivity inherent in 'have' already distances the predicate complement from being an intrinsic quality of the subject, obviating the necessity for the additional 'by' phrase to create the distance.

This last type is also of particular interest because it is the word order from which the current compound tense forms with 'have', the so-called perfect and pluperfect tenses, were historically derived. What is now the past participle that forms these two tenses originally functioned as a verbal adjective post-posed to the direct object it modified, the type of construction that is still reflected in modern German. As Otto Jespersen explained it some years ago,

> The use of *have* and *had* as an auxiliary for the perfect and the pluperfect began in the Old English period, but it was then chiefly found with transitive verbs, and the real perfect-signification had scarcely yet been completely evolved from the original meaning of the connexion: *ic hoebbe pone fisc gefangenne* meant at first 'I have the fish (as) caught' (note the accusative ending in the participle). By and by a distinction was made between 'I had mended the table' and 'I had the table mended', 'He had left nothing' and 'He had nothing left'.
>
> (Jespersen 1938: Section 217)

With this evolution, the marking associated with word order could now do double duty: the verb 'have' could now be directly modified either by a noun phrase or a verbal adjective. Furthermore, though we may assert that the verb 'have' was made into an auxiliary by this change, its underlying meaning has not changed, nor has its function as the primary lexico-grammatical element in the English predicate. Equally important, the meaning and the function of the participle itself has not changed. It remains a verbal adjective just as it was and still is today when post-posed to the direct object as an adjectival modifier: e.g. 'have the house painted', 'with the doors closed'. It is in this sense, then, that there is no essential difference in the way the modification relation structures the English predicate between a post-posed noun phrase modifying the verb 'have' ('He has/had a cold'), and a post-posed verbal adjective doing so ('He has/had gone'). In both cases, the essential meaning of the verb 'have' is to project the existence of something, whether it be a thing or an activity, in relation to the subject without its defining the nature of the subject itself directly. So the distinction between 'He has/had gone' and 'He is/was gone' is essentially one where the fact of being gone is presented in two different ways, one (with 'be') describing the subject definitively as gone, and the other (with 'have') indicating only an action the subject took.

This evidence demonstrates that the verbs 'be' and 'have' do not by themselves signify any action. They require predicate modifiers to specify whether an action, a thing, or some quality is being attributed to the subject. The verb 'do', on the other hand, carries precisely this meaning. The verb 'do' can be either transitive or intransitive. In its intransitive function it can mean to act or behave ('do as I do', 'you would do well to keep quiet'), to perform ('you could do better'), to be in progress ('what's doing'), to fare ('he did badly on the test'), and so forth. In its transitive function, it can also mean to perform something ('do one's homework', 'there's a lot to do'), to work at, be occupied with something ('what does your father do?'), to deal with something ('the garden needs doing'), etc. Most significantly, in what is conventionally called its auxiliary role, 'do' acts as a proxy for whatever action is expressed or implied in the context of an utterance: in questions ('did he come'), in negative statements ('I don't smoke'), in negative commands ('don't be silly'), in elliptic phrases ('you know better than I do'), and for emphasis ('he did come', 'I really do want to', 'rarely does it happen').

It seems fairly evident that all of these seemingly different uses are essentially pointing to one consistent general meaning, namely the actual performance of a process, and whatever modifies the verb 'do', be it a noun, an adverb, or another verb post-posed to it, specifies the nature of what is being performed. If there is no additional modifier, then 'do' by itself simply indicates performance per se. Since performance of a process is virtually definitional of what it means to create an effect in the given situation, we conclude that 'do' is marked for the archetype

of *validation*. This marking is especially evident in the use of 'do' in questions and negative constructions. As we have already noted, one cannot directly question or negate an action in English. One cannot say *'came he' or *'he not come'. One can only question or negate the performance of an action, which requires insertion of the verb 'do'. The difference between the use of 'do' as opposed to 'be' and 'have' in these circumstances is that where 'do' is used to question or negate the performance of an action, 'be' and 'have' question or negate its existence, each in its own way as we suggested earlier.

What we have established so far, therefore, is that the traditional notion of the compound verb phrase as a semi-autonomous structure consisting of an auxiliary and a main verb needs to be reconceptualized in terms of modification relations, whose function is to manage the contextualization of the individual signs involved strictly in accordance with the invariant properties inherent in their underlying meanings. Treating the concatenation of signs on the syntagmatic axis as a product of the self-referential properties inherent in the signs themselves thus provides an entirely different perspective on how attributive and predicative modification produce meaning in an utterance.

There is another critical aspect to the way in which predicative modification operates in English, namely the placement of the '-s' ending on nouns and verbs. The '-s' ending has two distinct roles in English grammatical morphology: it functions as the sign of the plural in nouns, and the third person singular in verbs. From the monosemic point of view, this would seem to pose a problem: how could a single grammatical morpheme have two opposing meanings? This issue is resolvable once we understand, as we have insisted throughout this study, that individual morphemes do not possess meanings of their own. Rather, the monosemic essence of signs lies in their relations with other signs in higher-order consciousness. Therefore, it is this relational property that we need to investigate to determine why a grammatical morpheme like the '-s' ending operates the way it does. Then we will be able to appreciate the role that it plays in the structure of English sentences.

In nouns the plural is identified with the '-s' and the singular with a zero desinence ('song'/'songs'). In verbs, the third person singular is identified by the '-s' and the plural by a zero ending ('he sings'/'they sing'). Thus it is not the '-s' ending itself but the opposition between the '-s' ending and the zero ending that defines the relation, occurring in one direction in nouns and the other in verbs. The function of this relation, therefore, is obviously to distinguish nouns from verbs. This is a crucially important function because English has no other formal way of doing so. A very large percentage of words in English can be either nouns or verbs. Many nouns are derived from verbs: e.g. 'to walk'/'a walk', 'to lie'/'a lie'; and conversely, many verbs are derived from nouns: e.g. 'a table'/'to table', 'a farm'/'to farm'. The

difference depends on the manner in which they are used in an utterance. and that is where the syntactic function of the relation comes into play.

It is precisely this relation that is vital to the identification of the primary modification relation in an English sentence, the relation between the subject and what we have been calling the lexico-grammatical head of the verb phrase, the one that carries all the requisite grammatical relations that identify it as the primary modifier of the subject. Specifically, in order for subject and verb to agree in number, the '-s' desinence will always occur at one or the other side of the boundary between these two pivotal constituents. Either the subject will be singular with a zero ending and the primary verbal modifier will have the '-s', or the subject will be plural with an '-s' and the primary verbal modifier will have a zero ending (except, of course, in the few cases of nouns that do not distinguish singular from plural, like 'sheep', 'fish', and 'deer'; or those that form their plural with a vowel alternation, like 'louse/lice', 'mouse/mice', and so forth). The fact that the '-s' desinence necessarily occurs on one or the other side of the boundary between the subject and the primary verbal element in the predicate indicates that the evolution of the '-s' form is anything but accidental. Its very evolution, we may assume, has been motivated by its role in facilitating the identification of this core modification relation, the one that establishes the very conditions for predication in the language. Furthermore, since the relation has everything to do with the recognition of number, we may conclude that the archetype defining the relation is indeed that of *plurality*.

3.4

The modification relation in French

French syntax appears superficially quite similar to English at the level of predication, given its relatively strict adherence to the SVO word order and the lack of a case system to express the basic grammatical relations associated with subject and object identification. As in modern English, so too in modern French the remnants of a former case system exist for the most part only in the forms of the personal, relative, and interrogative pronouns. While there appear to be only small (but still significant) differences between the two languages at the level of predication, however, there are far more critical differences in the way attributive modifiers behave with respect to the nouns they modify in French. It is at the level of attribution, therefore, that we can best appreciate how the marking associated with the modification relation in French differs from that of English.

Whereas adjectival modifiers tend overwhelmingly to be placed before the noun they modify in English ('the green car', 'an Italian painting'), as we have seen, the "normal" position for French adjectives is following the noun they modify (*la voiture verte, une peinture italiene*). There is, however, a small group of adjectives that usually do occur in pre-position in French, for which second-language learners are sometimes provided with the mnemonic BAGS. The capital letters stand for adjectives that depict Beauty (e.g. *beau, joli* 'beautiful', 'pretty'), Age (e.g. *vieux, jeune* 'old', 'young'), Good or bad (e.g. *bon, mauvais, vrai, faux* 'good', 'bad', 'true', 'false'), and Size (e.g. *grand/gros, petit* 'big', 'small'). [Adjectives in isolation are cited here in their masculine singular form.] Since any such list is tantamount to a fixed rule, however, it is virtually meaningless for a number of reasons. In the first place, any one of these adjectives can occur in post-position as well, given the proper context. Furthermore, there are a host of other adjectives that also occur in pre-position, such as those denoting quantity (e.g. *plusieurs, divers* 'several', 'various'), what is sometimes called rank (e.g. *même, autre, dernier, seul* 'same', 'other', 'last', 'only'), the cardinal and ordinal numerals (e.g. *quatre, quatrième* 'four', 'fourth'), to which we might also add the possessive pronouns (e.g. *mon, ton, son* 'my', 'your', 'his/her'). Since the speaker always has the prerogative to choose one or the other order, we need to establish what principle is governing the choice.

In her informative treatment of adjective placement in French, Maj-Britt Mosegaard Hansen does resort to lists, but the way she presents her lists provides

insights into the influence of pre- and post-position on the interpretation of adjectives generally in the language. (Hansen 2016: Chapter 13) Pre-position of an adjective – the *premodifying slot*, as she calls it – occurs when (1) its "information value is comparatively less significant and or distinctive", (2) it provides information that is "less new to/more expected by the hearer and/or less important to the text", (3) it is "more abstract, more figurative, and/or more subjective in meaning", or (4) its "precise interpretation … seems to be less stable…, varying according to the nature of the head noun." The *postmodifying slot*, by contrast, is used when adjectives (1) "express important new information", (2) "have a more contrastive, more concrete, and/or more objective meaning", or (3) their "interpretation will tend to be independent of the nature of the head noun." (Hansen 2016: 191)

What is being described here is not the nature of certain adjectives but the semantic principle that appears to govern the placement of any adjective – in other words, the nature of the modification relation itself. While this distinction is stated in terms of polar opposites of seemingly equal value, it is not difficult to see that there is a markedness relation involved here, just as we observed previously with respect to attributive modification in English. Where in English pre-posed adjectives are unmarked, being merely descriptive in nature, modifying the noun as they would any noun in any situation, in French it is post-position of the adjective that has that unmarked sense, presenting a quality independently and objectively, as it would be attributed to any noun. The nature of the marking itself, however, is decidedly different in the two languages. Whereas in English the marked word order (post-position) defines the marking relation with respect to the effect it produces in the given narrated situation, in French the marked word order (pre-position) defines the modification relative to the noun being modified. In Hansen's words, pre-posed adjectives "vary according to the nature of the head noun" and are therefore "more abstract, more figurative, and/or more subjective in meaning". In other words, they anticipate the occurrence of the noun and modify it accordingly.

Given the nature of the marking relation in French, it is not surprising that the adjectives that are most frequently pre-posed describe qualities that have a relatively wide range of interpretation depending on the context. Consequently, these modifiers are translated in English by a variety of different adjectives, depending on the type of noun they are modifying and the context in which the noun occurs. The list of BAGS adjectives cited above does have some value in this regard, for it contains words that are difficult to describe with a single objective quality or property when used in pre-position. The adjective *grand* can mean 'big', 'great', 'tall', or 'large', depending on the context. Likewise, *petit* can mean 'small', 'little', even 'dear' or 'cute'; *bon* can mean 'good', 'simple', 'kind', 'correct', or 'proper'; *beau* can signify 'good', 'beautiful', 'admirable', 'noble'; *joli* can be 'pretty', 'charming', or even 'considerable'; and so forth. But in post-position, even this set of adjectives

assumes a more objective meaning, independent of the context. Thus *une route mauvaise*, with the adjective post-posed, would normally refer objectively to a 'road' in 'bad' condition, whereas *la mauvaise route* would mean the 'wrong road', a road that is 'bad' because it takes you out of your way – i.e. doesn't do what roads are supposed to do. Likewise, the adjective *ancien* in post-position simply indicates something that has existed for a long time (*une coutume ancienne* 'an old custom'), but when pre-posed, can mean 'former' (*ancien ami* 'former friend'), or an earlier stage of (*ancien régime,* the pre-revolutionary government of France, or *ancien français*, the period of the language known as 'Old French'.)

Hansen gives additional examples with the adjectives *pauvre, propre, sacré, sale*, and *simple*. (Hansen 2016: 195–6) *Pauvre* means objectively 'not rich' when used in post-position (*une famille pauvre* 'a poor family'), but "assumes a more abstract and subjective meaning along the lines of 'unfortunate'" when used in pre-position (*le pauvre garçon* 'the poor kid'). That the latter phrase does not imply that the kid is actually poor is evident from the fact that one can just as easily refer to *le pauvre petit garçon riche* 'the poor little rich kid', where 'poor' is in pre-position describing a quality relative to the boy's character, while 'rich' is post-posed, presenting an objective condition that would apply to anyone with a lot of money. When used in pre-position, furthermore, there is no contrast implied between rich and poor because an otherwise objective attribute is presented as a subjective quality. Similarly, *une chemise propre* means 'a clean shirt', whereas *ta propre voiture* refers to 'your own car'; *une chemise sale* is 'a dirty shirt', whereas *une sale besogne* is 'a nasty job'; *un devoir sacré* is 'a sacred duty', whereas *un sacré connard* is 'a damn idiot'; and so forth.

In fact, there are any number of possibilities for pre-posing adjectives, giving them a less literal, more context-specific, more figurative or subjective sense relative to the noun they are modifying. *Une fille chic* is a 'classy' girl, but *une chic fille* is simply a 'nice' or 'decent' one; *un homme grand* is a 'tall' man, but *un grand homme* is a 'great' (i.e. tall in status) one; *un homme honnête* is an 'honest' man, whereas *un honnête homme* is a 'gentleman'; *un homme brave* is a 'brave' man, but *un brave homme* is simply a 'good' or 'decent' one; *un homme curieux* is a 'curious' or 'nosy' guy, but *un curieux homme* is a 'strange' one; *un individu triste* is a 'sad' person, but *un triste individu* is a 'mean' or 'bad' one; *la semaine dernière* is the week before this one, but *la dernière semaine* is the last one in the series of weeks; *des étudiants divers* refers to a variety of different students, whereas *divers étudiants* only means 'several students'; *une histoire drôle* is 'a funny story', but *un drôle d'idée* is 'a strange idea'; and so forth.

It is common to find adjectives pre-posed when they describe qualities normally associated with a particular kind of noun. Since, for example, a great success in commonly thought of as a 'brilliant' one, the adjective is pre-posed: *une*

brilliante réussite. If it remained post-posed, it would imply that the greatness was being contrasted with some other kind of success. A bad habit is often one that is 'annoying', hence *une fâcheuse propension*. And so forth. If not a natural attribute of the given noun, then pre-posing the adjective signals the assumption on the part of the speaker that a property is to be considered as naturally pertaining to that noun. As Hansen again notes, *la libre Amérique* ('free America') assumes that all America is free, whereas *l'Amérique libre* assumes that parts of the country are not free in the context of the given utterance; *les élégantes Françaises* suggests that all French women are elegant, whereas *les Françaises élégantes* singles out those that happen to be elegant; *notre aimable clientèle* presumes that our clientele are naturally friendly, while *notre clientèle aimable* suggests that some of them may not be. (Hansen 2016: 196–7).

Conversely, adjectives that are normally pre-posed will also occur in post-position when further modified by a qualifying adverb or a prepositional phrase, making the meaning "more distinctive, concrete, and/or contrastive" (Hansen 2016: 194), more independently ascertainable apart from the noun:

> *une étude remarquablement bonne* 'a remarkably good study'
> *une expérience bonne pour la morale* 'an experience good for one's morale'
> *un nez grand come une trompette* 'a nose big as a trumpet'

Given the relative nature of pre-posed modifiers in French, it is also not surprising that numerals generally precede the noun, indicating how much of the given phenomenon is in play; except in cases like royal names (e.g. *Louis Quatorze* 'Louis the Fourteenth') where the numeral assumes a more objective, virtually adnominal status. On the other hand, adjectives that denote qualities as inherently objective as colors almost always occur after the noun, but they can occasionally be pre-posed, in which case they assume a decidedly metaphorical connotation:

> *noire ingratitude* 'extreme [black] ingratitude'
> *noirs pressentiments* 'dark [black] premonitions'
> *verte jeunesse* 'bloom of [green] youth'
> *mes vertes années* 'my fruitful [green] years'
> *blanche neige* 'pure as [white]snow'
> *blanche colombe* 'pure woman [white dove]'

Finally, objective qualities that have already been established in the context of an utterance may be pre-posed when repeated, indicating that they are now considered identifiable with the noun. In such cases, the initial presentation of the modification relation establishes the qualification and the repetition assumes the relation already established. (Examples from Waugh 1976: 98.)

J'ai vu un éléphant énorme … Cet énorme éléphant buvait de l'eau.
'I saw an enormous elephant …This enormous elephant was drinking water.'
Vous allez raconter une affaire malheureuse et, après le récit, vous dîtes, voila une malheureuse affaire.
'You are going to tell about an unhappy affair; and after the narration you say, there' s an unhappy affair.'

To summarize what we have observed here, then, we may conclude that post-position of adjectival modifiers in French is unmarked, presenting a quality independently and objectively, as it would be attributable to any noun. Pre-position, on the other hand, is the marked member of the modification relation, where a quality is given relative to the noun it modifies, anticipating the nature of the noun and modifying it accordingly. In principle there is always a choice, one which has less to do with the nature of specific adjectives and everything to do with the structure of the modification relation itself. All the characteristics we have seen that identify the type of modification induced by pre-position – less distinctive or contrastive; more abstract, figurative, or subjective; more expected given the nature of the noun – all point to one overriding factor, that the marking associated with pre-position must contain within it a mechanism for relating the meaning associated with the modifier with that of the modified. The marking associated with pre-position must allow for a variety of contextual possibilities for the modifier to express its meaning in accordance with (in anticipation of) the nature of the noun it modifies. It must, in other words, possess the property of *plurality* as we have defined it here, the archetype that distinguishes signs which contain within themselves a complex of possibilities that may be realized in different ways depending on the context in which they occur. This is not the property of any particular adjective, but of the modification relation itself, governing how any adjective may express its meaning when in the position that carries the mark of the relation.

If indeed this is the mark of the modification relation in French, then we should expect to find it operating in the same fashion in the case of predicative modification. And indeed, what we find is that predicate modifiers utilize almost exclusively the unmarked word order, where the verb follows the subject it modifies, and verbal complements – direct and indirect objects, prepositional phrases, and so forth – in turn follow the verb. This would certainly appear to be a self-evident consequence of the marking relation, since predication tends to produce new and independent information about a subject that is in direct contrast with the marking of pre-position. We must always bear in mind that we are talking about conceptual relations, not fixed properties. So when we observe what predication tends to do, it does so in French in a way that is quite distinct from that of English, given the different archetypes that define the modification relations in

each language. In French it is the systematic portrayal of meaning relative to what is being modified that identifies pre-position as the marked member of the relation, while the sense of new and independent information typical of predication remains unspecified in that regard.

The fact that French is even more exclusive than English in utilizing only one word order for predication is understandable given the marking of the modification relation in French. It would be difficult to imagine, for example, inversion of subject and predicate to form questions in French, given the nature of *plurality*. There is virtually no sense in which an interrogative construction could constitute a qualification of something in terms of its own essence. French yes/no questions as a rule do not invert subject and verb but use the same unmarked order as regular declarative sentences, either altering the intonational contour of the sentence or adding the existential interrogative phrase *est-ce que* 'is it that'. Likewise, wh- questions add the existential clause *qu'est-ce que*/*qui est-ce qui* 'what is it that'/'who is it that'. Note that in the existential phrase itself there is an inversion, but it operates with the neutral pronoun *ce*, also called the empty pronoun precisely because its function is to refer to whatever is being established in the given utterance situation.

Still, there is no hard and fast rule here, as we have insisted throughout this study, because there are certain circumstances where inversion of subject and predicate in interrogative constructions does occur. This commonly happens when the subject is a pronoun. (Several of these and other examples below are cited in Hansen 2016):

Puis-je vous rappeler plus tard? 'Can I call you later?'
Veux-tu encore un café? 'Do you want another coffee?'
Qu'a-t-il dit? 'What did he say?'
Que faites-vous? 'What are you doing?'
Qui est-il? 'Who is it?'
Où est-elle? 'Where is she?'
Pourquoi sont-ils venu? 'Why have they come?'

Since pronouns are by definition anaphoric, inversion to the marked word order certainly does fit the marking of *plurality*: the subject has already been established in the context of the utterance, now represented by a pronoun, and is being modified accordingly, questioning as it were the viability of the verbal action with respect to the previously identified subject. In fact, it is commonplace to find the actual noun subject referred to by the pronoun included in the same utterance – so-called complex inversion – highlighting the anaphora:

Votre soeur, vient-elle nous voir? 'Your sister, is she coming to see us?'
Sera-t-il là demain, votre frère? 'Will he be there tomorrow, your brother?'
Jean, qu'a-t-il dit? 'John, what did he say?'
Pourquoi Jean a-t-il renoncé à faire des études? 'Why did John quit school?'

This type of complex inversion is especially evident in declarative sentences that begin with so-called conjunctive adverbials or a number of other adverbial constructions that, as Hansen puts it, "indicate either the nature of the connection of the host clause to the preceding discourse or the speaker's commitment to the truth of what was expressed in the clause." (Hansen 2016: 336–7) Conjunctive adverbials that trigger complex inversion include *à peine* 'scarcely', *encore* 'yet', 'nevertheless', *encore moins* 'even less', *peut-être* 'perhaps', *sans doute* 'no doubt', *tout au plus* 'what's more'. E.g.

Peut-être la radio a-t-elle déja announcé la nouvelle. 'Maybe the news has already been announced on the radio.' [Perhaps the radio has it already announced the news]
Nous avons longuement réflechi à cette problématique. Encore plusieurs détails restent-ils à éclaircir. 'We've thought for a long time about this issue. There are still several details that remain to be clarified.' […Yet several details remain they to clarify]
Sans doute mon père viendra-t-il demain. 'No doubt my father will come tomorrow.' [no doubt my father will come he tomorrow] Here the *sans doute* makes it clear that one has been talking about the father.

Anaphora is even more obvious when the purely anaphoric demonstrative pronoun *cela* is used:

Que cela peut-il vous faire? 'What's that got to do with you?' [What that can it you do]
A qui cela profite-t-il? 'Whom does that benefit?' [To whom that benefits it]

Inversion is also possible when the subject is a noun, but in these instances the noun itself has an anaphoric quality, referring to someone or something previously established or at least presupposed in the context of the utterance:

Que dit ton père? 'What does your father say?' (e.g., regarding what we've been talking about)
Quand arrivera ton cousin? 'When will your cousin arrive?' (e.g., so we can follow through with our plans)
De quoi discuteront vos collègues lors de la réunion? 'What will your colleagues be discussing at the reunion?' (e.g., the reunion under discussion)

The fact that such questions do represent the product of a previously established situation is made evident by the prohibition on adding new information in the same sentence. As Hansen notes (Hansen 2016: 334), one cannot say

> **A qui s'est plaint Alain de son travail?* to mean 'To whom did Alain complain about his job?'

Here the phrase 'about his job' constitutes additional information. Instead, one has to use the complex inversion where Alain is in the normal subject slot with the corresponding pronoun *il* inserted in inverted position: *A qui Alain s'est-il plaint de son travail?* [To whom Alain did he complain about his job]

Indeed, the anaphoric quality of pronouns is such that they are regularly pre-posed to the verb they modify as predicate complements in normal declarative sentences as well. The direct object pronouns (*me, te, le, la, ce, nous, vous, les*), the indirect object pronouns (*me, te, lui, se, nous, vous, leur*), and the pronominal adverbs (*y* and *en*) occur before the verb they modify in declarative sentences, again because they refer to an entity already established in the larger context of the utterance, and modify the verb accordingly:

> *Elle la lui a vendu.* 'She sold it to her.' [she it to her sold]
> *Je lui en ai parlé.* 'I told him about it.' [I to him about it told]

Thus whether we are talking about a verb modifying a pronoun subject in questions or a pronoun object modifying a verb in declarative statements, the anaphora in both cases triggers inversion to the word order marked for *plurality*, where the modification is made relative to the situation established in the context of the utterance.

Since we have been invoking anaphora both here and in the explanation of English word order, it is important to understand the different manner in which the phenomenon occurs in each language. We must always keep in mind that we are talking about relational properties, not fixed qualities or attributes. The anaphoric effect that is produced by inversion to the marked word order in French is due to the marking of *plurality* that defines the modification relation in French, while the anaphora produced by inversion to the unmarked word order in English is engendered by the marking of *validation* that defines the modification relation in English. In the examples below, inversion to the unmarked word order in English further qualifies an existing situation, taking the predication out of the realm of new and unique information, whereas the same inversion to the marked word order in French underscores the very fact that the modification is qualifying an existing situation (the literary examples in French are cited in Price 1971):

A ce moment surgit un petit homme en casquette. (Benoît) 'At that moment appeared a little man with a tall helmet.'

Alors commença une journée d'une folle agitation. (Proust) 'And then began a day of absurd confusion.'

There are other anaphoric adverbials that also trigger inversion in French, including *ainsi* 'thus', *au moins, du moins* 'in any case', 'moreover', *aussi* 'as a result', *aussi bien* 'incidentally', *de même* 'likewise', *en vain* 'in vain', *plus encore* 'what's more', *probablement* 'probably'. E.g.

Elle n'a pas pu mettre assez d'argent de côté au cours de l'année. Aussi a-t- elle été obligée de renoncer à son voyage. 'She wasn't able to put aside enough money during the year. As a result, she had to give up on her trip.' […As a result was she obliged to give up on her trip]

An increasingly common use of inversion occurs when the corresponding English sentence would begin with the so-called empty or deictic adverb 'there', indicating once again that the observation follows from what has been previously established. The fact that English has to insert the dummy subject 'there' in such cases, whereas in French the inverted word order itself suffices to indicate that the modification refers to a previously established situation, demonstrates that the marking associated with the modification relation in the two languages is clearly different (Literary examples are again from Price 1971):

Suivit une âpre discussion en russe, à laquelle je ne pouvais prendre aucune part. (Duhamel) 'There followed a pointed discussion in Russian, in which I could not take any part.'

Descendent un jour place Vendôme un Anglais et une Espangnole. (L.-P. Fargue) 'There came down one day to the Vendôme square an Englishman and a Spanish woman.'

It is also possible to invert predicate adjectives in French in a way that appears superficially to be similar to English. In English, a sentence like 'Happy is the man who lives a charmed life' is merely descriptive, neutralizing the uniqueness given by the marked word order, whereas the same construction in French presents the happiness as one that is meant to be seen in the light of the situation being described, reinforcing the sense of the marked word order. In the following examples, the inversion appears to have the same effect, but the rationale based on the marking of the modification relation in each language is different.

> *Heureux est l'écrivain qui peut faire un beau petit livre.* (Joubert) 'Happy is the writer who can create a nice little book.'
> *Nombreux sont ceux que la crise a obligés à ne pas partir pendant les vacances.* 'Many are those whom illness has kept from leaving on vacation.'

In the final analysis, what matters is the speaker's intent, which is ultimately derived from his/her tacit knowledge and exploitation of the conceptual essence embodied in the semantic structure of the signs themselves that lies deep inside consciousness at the supra-rational level. Our explanations of what determines how utterances are generated must therefore reflect this more profound mental organization, and not limit our understanding of sentence structure to just those aspects that appeal to our sense of awareness at the rational level.

Which brings us to that final and seemingly inevitable category which is said to have no semantic import: stylistic variation. Because certain types of sentences can occur in either order without any immediately apparent distinction in meaning, the difference is said to be "merely stylistic". Hansen gives the pair:

> *Le trois juin sera lancée une nouvelle fusée spatiale*
> *Le trois juin une nouvelle fusée spatiale sera lancée*

both meaning 'On the third of June a new space satellite (rocket) will be launched'. Likewise, Price cites the following literary example:

> *Rappelez-vous ce que vous a dit le docteur (Proust)*

which could just as well have been worded

> *Rappelez-vous ce que le docteur vous a dit*

both meaning 'Remember what the doctor told you'. The assumption here is that, since the difference does not change the nature of the situation being referred to, there is no real difference in meaning, only a stylistic one. But as we have insisted throughout this study, the self-referential nature of sign relations requires us to recognize that what appears to be merely a stylistic difference is still necessarily embedded in the structure of the modification relation, and the choice of word order reflects the tacit knowledge that underlies the speaker's intent in producing one or the other construction. In the first pair of examples above, one could assume, for example, that the inverted word order is more likely to be used if one had been talking about something to do with the third of June, whereas the opposite word order simply constitutes a straightforward statement of facts without any hint of previous contextual assumptions, just as the marking relation would predict. Likewise, Proust's use of the inverted word order regarding what

the doctor said embeds the sentence in the existing dialog, which the other word order would not do.

It is significant, moreover, that the structure of the modification relation in English does not allow for parallel constructions of this type, once again underscoring the difference in the marking relation associated with modification in the two languages. A sentence like *'Remember what said to you the doctor' (the literal translation of the inverted French word order) is clearly ungrammatical; and one like 'On the third of June will be launched a new satellite' is a bit awkward, since both the third of June and the new satellite appear to constitute new information unique in the given situation.

We may therefore conclude that the phenomena of word order at both the levels of attribution and predication in French is consistent, given the marking of *plurality*. Bear in mind, moreover, that we could never arrive at a conclusion like this if we had continued to define the concept of plurality in purely quantitative terms. As an archetype of consciousness at the supra-rational level, *plurality* constitutes a qualitative construct, capable of producing a variety of possibilities for contextualization in both the morphological and syntactic realms.

The archetypal structure of the French verb

As we have previously shown, the English verbal system is primarily syntactic, with only one underlying morphological opposition at its core – the sign relation past/non-past. In this relation, the past tense has as its general meaning the conceptualization of the "not now" in both temporal and atemporal terms, subsuming under one and the same sign not only reference to past time but also the expression of hypothetical, conditional, and subjunctive senses. The temporal, conditional, and subjunctive senses that have coalesced as contextual variants of the past tense form in English have retained their semantic distinctness as separate, individual signs in French. Together with the present and future tenses, the grammaticalization of time-consciousness in French comprises a relational structure with no fewer than six distinct members: the present, two past tenses (the imperfect (imparfait) and the perfect (represented by the passé composé in the spoken language or the passé simple in writing), the future, the conditional, and the subjunctive.

In conventional parlance, these morphologically distinct forms are not all considered tenses. The conditional and the subjunctive are commonly treated as moods, and the distinction between the two past tense forms is sometimes considered a matter of aspect rather than tense, where the imparfait is said to be imperfective in comparison with the other two tenses. For our purposes here we will be concerned with the structure of the actual sign relations without prejudicing the outcome with conventional nomenclature. Furthermore, while the signs themselves comprise primarily a morphological rather than a syntactic structure, there are significant syntactic implications that justify considering the entire system as a structural whole, one moreover that can be explained in terms of the same archetypes of time-consciousness that we have identified in this study.

We may note at the outset that the present tense (présent) in French has very much the same range of meaning as the English present tense, indeed the broadest possible range, clearly indicating that it is also the unmarked tense in the French grammatical system. While the présent in French is used to express events that are taking place at the moment of speaking, that – as Maj-Britt Hansen notes – is not even its most common usage. (Hansen 2016: 100. Examples below are from her text.) Like English, the French présent is normally used to express eternal truths as well as regular patterns of behavior, the so-called "habitual use" of the present:

Deux et deux font quatre 'Two and two make four'
Claude joue au tennis le vendredi 'Claude plays tennis on Fridays'

The présent is also used to express events that, as in English, are about to take place or, even more than English, have just taken place:

Moi, je déscends aux Halles, et toi? 'Me, I'm getting off at the Halles, and you?'
Allô, Delphine, je rentre à l'instant 'Hi, Delphine, I've just gotten home'

In the latter type, English uses the present perfect (present tense of 'have' plus past participle), indicating as we previously noted, an action in the past that is still valid in the present. This is also the case with the so-called inclusive use of the French présent, indicating an activity that started at some time in the past and is still on-going:

Christophe habite à Nantes depuis deux ans 'Christophe has lived/been living in Nantes for two years'
Il y a une heure qu'on t'attend 'We've been waiting for you for an hour'
Depuis que Marc travaille ici, on se voit regulièrement 'Since Marc started working here, we've been seeing each other regularly'

So the use of the French présent has an even broader range than the present in English, also encompassing past events that are still valid in the present.

The past tenses in French present a more complex picture. In terms of distinct, individual signs, there are three: the passé simple, the passé composé, and the imparfait. The passé simple (or simple past) is distinguished from the passé composé (or compound past) in two respects. Formally speaking, as the nomenclature indicates, the former is expressed as a purely morphological category, as a grammatical desinence attached directly to the verbal root or stem, while the latter is a syntactic construction, consisting of the present tense of either the verb 'to be' (être) or 'to have' (avoir) and the past participle. From a usage point of view, the passé simple is limited to written (especially literary) or other formal registers, whereas the passé composé substitutes for the passé simple in virtually all everyday oral communication. Since these two tenses are formally distinct, however, we will need to look more closely at the ranges of reference associated with each, which we will do later. Let us look first at the distinction between the passé simple and the imparfait.

Both the passé simple and the imparfait refer to events in past time, but in different ways. Generally speaking, the passé simple presents the action as a single, undifferentiated event viewed, as Hansen suggests, "from the outside", whereas with the imparfait the action is presented as unfolding in time, as viewed "from the inside". (Hansen 2016: 125) Her nomenclature is significant because it allows us to appreciate how the action is being perceived, regardless of how it may have

actually happened; and it is this point of view, the intent of the speaker, that is embodied in the underlying meaning of the signs involved. Hansen gives the following contrastive examples, one where the passé simple presents the activity as a single event despite the fact that it lasted for quite some time:

> *Ensemble, les deux époux passèrent un demi-siècle en parfaite harmonie* 'Together the two spouses spent half a century in perfect harmony.'

and another where the imparfait is used despite the fact that the verb refers to a single, specific starting point:

> *À l'instant où Léon commençait ses exercises, Max entra.* 'Just when Léon began [imparfait] his exercises, Max came in [passé simple].'

So we are not dealing with aspect here, as that term is conventionally understood, or even as we observed it operating in Russian, where it is a matter of space- rather than time-consciousness. Rather, there is something more essential regarding the structure of time-consciousness that explains the relation between these two forms as genuine tenses. Clearly, both of these forms refer to past time, so both would therefore be marked for the archetype of *dissociation*. As for the imparfait, there are to be sure certain respects in which it seems to act in the manner of an imperfective form. In contradistinction to the single, circumscribed nature of the passé simple, for example, the imparfait is often used to express actions that are either habitual or iterative in some contexts, or durative in others:

> *Marie-Pierre jouait au tennis tous les samedis après-midi.* 'Marie-Pierre used to play [imparfait] tennis every Saturday afternoon.'
> *Chantal dormait quant Olivier rentra.* 'Chantal was sleeping [imparfait] when Olivier came in [passé simple].'

These specific connotations do not, however, represent the full range of contextualization associated with the form. It is the speaker's perception of events, the intent of the speaker to present an action in a certain way, that captures the essence of the distinction. Hansen provides the following pair of examples to demonstrate the point. In the first example the speaker uses the passé simple to present the action in an objective sense, as a single act in the past, while in the second one the imparfait is used in a noticeably subjective manner, despite the fact that the reference is still to a single act (Hansen 2016: 131–2):

> *Aline se jeta du pont.* [passé simple] 'Aline threw herself off the bridge'
> *Une second de plus, et Aline se jetait du pont.* [imparfait] 'One second more and Aline would have thrown herself off the bridge.'

The use of the imparfait in the second example indicates that the situation is conceived as unfolding before the person's very eyes – that is, in terms of what was going on in the speaker's mind at the time of the event being described. There is no lingering here in the action itself; in fact, there was no action at all, except in the mind of the speaker, for whom the possibility of her jumping defines the entire scene as a lingering sense of tragedy.

Thus regardless of the physical nature of the situation, the tense of the verb describes the situation "as if" it were perceived one way or the other, in a properly self-referential manner that is consistent with the underlying general meaning of the forms being employed. Where the passé simple presents a past action as a single event, whether or not it actually was, the imparfait treats a past action as something that affects the entire scope of the situation being described in the mind of the speaker. The action itself may or may not have duration, but it influences the way the speaker intends it to be perceived, as something that colors the entire "now" of the given narrated situation. In objective terms, that could imply an ongoing activity, one whose duration actually does cover the scope of the given situation, or one that occurs frequently or habitually under the circumstances being described in the given situation. In subjective terms, it could imply one that colors the entire scope of the situation described from the speaker's point of view. From this evidence we would conclude that the imparfait is additionally marked for the archetype of *validation*, in a manner reminiscent of the marking of the '-ing' form in English that we presented previously.

The imparfait also defines past events in terms of the "now" of the given utterance situation as envisioned by the *subject* of the sentence. Thus the imparfait must be used after a main clause in the past that contains verbs denoting states of mind or expressions thereof: *croire* 'to believe', *estimer* 'to consider', *penser* 'to think', *comprendre* 'to understand', *se demander* 'to wonder', *demander* 'to ask', and *dire* 'to say'. (Oudot 2008: 48; Hansen 2016: 135) In these cases the speaker puts the thought in the mind of the *subject*:

> *Il a pensé qu'elle voulait l'embraser*. 'He thought that she wanted [imparfait] to kiss him.'
> *Norbert comprit qu'il ne pouvait rien faire*. 'Norbert understood that he could do [imparfait] nothing.'

These situations make it clear that the imparfait signals what was going on in the mind of the subject at the time of the utterance.

The imparfait also functions as a kind of present-in-the-past in certain other constructions. (Oudot 2008: 48) It is used in dependent clauses starting with a relative pronoun following a main clause in the past, no matter what type of activity may be involved:

> *Nous avons acheté le piano dont je te parlais.* 'We bought [passé composé]the piano I told [imparfait] you about.'

It is also used in a subordinate clause whenever the action is simultaneous with that of a main clause in the past:

> *J'ai vu un homme qui portait un chapeau.* 'I saw [passé composé] a man who was wearing [imparfait] a hat.'

All of these contextual applications of the French imparfait, therefore, point to the same, invariant underlying essence of the form as one represented by a combination of the two archetypes, *dissociation* and *validation*.

In the everyday spoken language, past time is expressed by the opposition of the imparfait and the passé composé rather than the passé simple, the passé composé being a compound form consisting of one of the so-called auxiliary verbs *être* or *avoir* and a past participle. The history of the relation between the passé simple and the passé composé is an interesting one that deserves spending a moment to describe. While the passé simple has for all practical purposes disappeared from the spoken language, at the time when these two forms coexisted in everyday speech, there was a clear difference in meaning between them, one that is still evident when both occur together in the literary language today. Whereas the passé simple, as Granville Price has noted, "situates the action squarely in the past, without any implication as to its relation with the present", and is therefore "the normal tense for narrating action in the past", the passé composé, as its form clearly indicates, "is truly a present perfect and envisages the past action as in some way linked to the present". (Price 1971: 226–7) In this sense, the use of the passé composé mirrored in both form and meaning the English present perfect, as we described it earlier, where the present tense of the verb 'have' and the past participle express an action in the past that is still valid in the present. Price gives the following example from the nineteenth century author Lacretelle:

> *Nous nous adressâmes la parole quelques jours plus tard, un dimanche matin, en des circonstances dont j'ai bien gardé la mémoire.* 'We talked [passé simple] several days later, one Sunday morning, in circumstances about which I have kept [passé composé] a clear memory'

Hansen confirms this interpretation as it pertains to the existence of both tenses today in certain registers: "In formal genres where the passé simple is also used, occurrences of the passé composé will normally have present perfect meaning". (Hansen 2016: 107) She gives the following example, from an autobiography:

> *Mon frère se suicida en 1965. Il n'avait que 25 ans. Je n'ai jamais compris ce qui a pu le pousser à faire un tel geste.* 'My brother committed suicide [passé simple] in 1965. He was only 25 years old. I have never understood [passé composé] what could have made him do such a thing.'

In less formal genres where the passé simple no longer occurs – i.e. in the spoken language today or in modern literature mirroring the spoken register – the passé composé has taken over the function of both forms, becoming ambiguous as to whether or not the action is still valid in the present. The reason for this has to do with the changes that took place in the phonological structure of words, changes that ultimately affected the grammatical morphology of the verbal system. Briefly, the loss of final consonants that happened between the 12th and 16th centuries resulted in the disappearance of certain critical grammatical distinctions expressed by inflections at the ends of words. These changes especially affected the grammatical endings of the passé simple, thereby seriously compromising its viability. (Van Vliet 1983: 105) This in turn put the passé composé in the position of having to cover, as it were, for the passé simple, which was no longer accessible as a distinct spoken tense. However, since the endings of the passé simple that were lost in the spoken language are still visible in the written form, the distinction between these two past tenses survives intact in the literary language and in other formal, written genres.

There is an intriguing formal observation that may help to explain the ability of the passé composé to assume the mantle of the passé simple in the spoken language. As Van Vliet notes, the very grammatical endings associated with the passé simple, particularly in the singular conjugated forms, correspond exactly with the present tense of the verb *avoir*, by far the more common of the two so-called auxiliary verbs that constitute the passé composé. (Van Vliet 1983: 105) Thus we get the following picture where the passé simple devolves naturally into the passé composé, where the grammatical desinences of the passé simple are preserved intact in the forms of the verb *avoir*:

PASSE SIMPLE		PASSE COMPOSÉ	
je parlai	>	*j'ai parlé*	'I spoke'
tu parlas	>	*tu as parlé*	'you spoke'
il parla	>	*il a parlé*	'he spoke'
on parla	>	*on a parlé*	'one (they) spoke'

As far as the use of the verbs *avoir* and *être* themselves are concerned, the semantic relation between them is very much like that between the verbs 'have' and 'be' in English, where 'have', as we saw previously, is essentially the transitive counterpart of 'be'. The verb *être* occurs with reflexive verbs, those that refer back to their own

subject (e.g. *se laver* 'to wash oneself'); with so-called pronominal verbs, those that are formed with a reflexive pronoun (e.g. *s'évanouir* 'to faint'); and with a limited number of intransitive verbs that likewise express the disposition of the subject itself. These latter include the verbs of motion and the following specific verbs: *apparaître* 'to appear', *décéder* 'to be deceased', *demeurer* 'to stay', *mourir* 'to die', *naître* 'to be born', and *rester* 'to remain', as well as intransitive derivations from these verbs (e.g. *devenir* 'to become' from *venir* 'to come') All other verbs take *avoir*, even those of this set of verbs, significantly, when used transitively:

> *Pascal est déja sorti.* 'Pascal has already gone out.'
> *Pascal a sorti le chien.* 'Pascal took the dog out.'
> *La police est descendue dans ce café.* 'The police descended on that cafe.'
> *La police a descendu le malfrat.* 'The police shot the gangster.'

So to summarize this discussion of past tenses, at the core of the system in the spoken language today there remain but two basic ones, the passé composé and the imparfait. Other expressions of past time are compound forms using the opposition between these two tenses in conjunction with a past participle. These constructions create the plus-que-parfait (with the imparfait) and the passé surcomposé (with the passé composé). There is also the rather rare passé antérieur (formed with the passé simple) in the written language. As one might expect, given that the passé composé has taken over from the passé simple in the spoken language, the meanings associated with both the passé surcomposé and the passé antérieur are largely interchangeable, both expressing a single, circumscribed event concurrent with another event in the past:

> *Quand Francis a eu/eut terminé la lettre, il est allé/alla se coucher.* 'When Francis (had) finished [passé surcomposé/passé antérieur] the letter, he went [passé composé/passé simple] to bed.'

Significantly, given the preceding discussion, even when the related activity may have constituted a single, circumscribed event in the past, it will be expressed by the plus-que-parfait, using the imparfait form of *avoir*, if it further describes the "now" of the afore-stated incident:

> *Denis se rappelait la première fois qu'il avait embrassé une fille.* 'Denis was recalling [imparfait] the first time he (had) kissed [plus-que-parfait] a girl.'

We can conclude, therefore, that the archetypes of meaning that define the ranges of usage in each of the two past tenses individually hold true as well in the compound constructions they create. As far as the spoken language is concerned, then, we can diagram the archetypes embodied in these two past tenses, in relation to each other and to the present tense, in terms of a square, where the bottom left

corner represents the totally unmarked tense (the présent), the top side of the square represents the tenses marked for *dissociation*, and the right side those marked for *validation*. Thus we get the following picture, where the bottom right corner has yet to be filled in:

passé composé ─────────────── imparfait

présent ───────────────
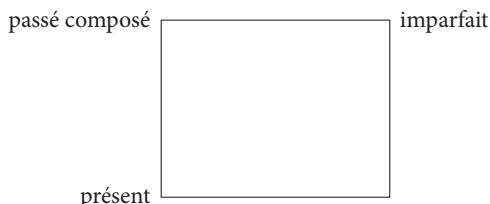
The bottom right hand corner of the square ought to contain a form marked only for *validation*. That would be the imperative (impératif), despite the fact that some consider the imperative to be a form that expresses an action that is "yet to happen", that "the temporal reference of an imperative clause is always future". (Hansen 2016: 80–1) This may be true in the conventional sense of reference to real world time, since if you tell someone to do something, it obviously can't be accomplished until after the telling. But as far as the self-referential property inherent in the signs themselves is concerned, the fact that the impératif uses the form of the present tense without a subject creates the sense of immediacy, of direct relevance to the "now" of the given situation. Hence the impératif would naturally occupy the right bottom corner of the square, marked only for *validation*.

passé composé ─────────────── imparfait
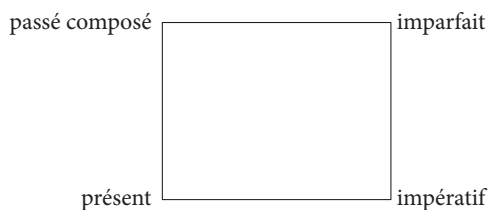
présent ─────────────── impératif

With the present and the two past tenses, we have now considered three of the six primary forms of the French verb, plus the imperative. Of the remaining three – the future, conditional, and subjunctive – let us look at the future first. There is little doubt that the French future tense is marked for *potentiality*, the third archetype in the hierarchy of time-consciousness. The morphological future, or futur simple, represents an event that is projected to occur not only in the "not now" beyond the events being described in the narrated situation temporally, but beyond also in the properly modal sense of something projected in the mind of the speaker. (Hansen 2016: 105) Moreover, unlike English, the grammatical future tense is required in any situation with the implication of future time, even in those cases where the use

of 'will' or 'shall' in English would not normally occur and the unmarked present tense is used instead:

> *Viens me voir quand tu sera à Paris.* 'Come see me when you're in Paris.' [when you will be in Paris]

Indeed, the futur simple has its own specifically modal use as, for example, when an action is expressed in terms of the speaker's desire to see something happen, where the future tense is used as a polite, albeit insistent, alternative to the imperative:

> *Vous viendrez bien avec nous.* 'Do come with us.' [You will surely come with us.]

The futur simple also forms part of the compound form known as the futur antérieur, a construction not unlike the English future perfect 'will have done'. Here the future form of the verb *avoir* occurs in conjunction with a past participle, anticipating a future event in relation to something that happened in the past. Moreover, and quite significantly, this construction can also be used modally to indicate the speaker's projection that something must or could have happened, anticipating a future event whether it actually happened or not (Hansen 2016: 112):

> *Tu l'auras oublié à la maison.* 'You must have [will have] left it at home.'

So the archetype of *potentiality* is evident in all instances of the use of the French future tense, expressing the sense of beyond in a variety of ways.

We now come to the final two primary grammatical forms of the French verb, the conditional and the subjunctive. Recall that in English conditionals and subjunctives are not expressed by independent grammatical forms but are subsumed under the rubric of the past tense, making them contextual variants of the single archetype of *dissociation*. In French, on the other hand, since the conditional and the subjunctive have retained individual sign forms of their own in relation to the rest of the verbal grammatical system, they are able to express more specific semantic distinctions, ones that combine, as we shall see, the archetypes of both *dissociation* and *potentiality* in specific ways.

Let us look at the subjunctive first. One of the most salient facts about the French subjunctive (subjunctif) is that it occurs primarily and overwhelmingly in subordinate clauses introduced by the conjunction *que* 'that'. The subjunctif must be used instead of the indicative when the proposition given in the main clause establishes that the action being described in the subordinate clause is either not real, does not represent new information, or is something that is presupposed or taken for granted. (Hansen 2016: 84) Thus the information given by the subjunctive is one step removed from present reality, constituting a judgment on the part of the speaker that can only come from a memory gained from past experience of what might, could, or should happen or not happen in the given situation. The fact

that subjunctive meaning is expressed by the past tense form in English certainly supports this conclusion, suggesting that the French *subjunctif* is likewise marked at least for the archetype of *dissociation*. Unlike English, however, the fact that the French *subjunctif* is a stand-alone form provides it with broader applicability in situations that have not yet occurred but are projected as possibilities that could under such circumstances. This futuristic sense suggests that the French *subjunctif* is also marked for the archetype of *potentiality*. As we consider the examples below, note how much the situations invoked mirror the senses that define the uses of the Russian genitive case as a verbal object, likewise marked for *potentiality*.

The propositions in the main clause that trigger the use of the subjunctive in the subordinate clause may be of various kinds: judgments, suggestions, or requests; wishes, desires, or expressions of emotion; doubts, regrets, or denials; thoughts, assumptions, or beliefs. For example, the following impersonal expressions of the speaker's judgment that are followed by *que* normally trigger the *subjunctif*: (examples from both Oudot and Hansen) *il faut que* 'it is necessary that', *il est bon/mauvais que* 'it is good/bad that', *il est bien que* 'it is well that', *il est possible/impossible que* 'it is possible/impossible that', *il semble que* 'it seems that', *il est important que* 'it is important that', *il est utile que* 'it is useful that', *il est temps que* 'it is time that ', *il est préférable que* 'it is preferable that', *il est probable/peu probable que* 'it is probable/unlikely that', *il arrive que* 'it happens that', *il vaux mieux que* 'it is best that', *il suffit que* 'it is sufficient that', *c'est dommage que* 'it's a pity that', *peu importe que* 'never mind that', '*nul doute que* 'no doubt that', *il se peut que* 'it may be that'.

Even expressions of certainty, which normally trigger the indicative, take the subjunctive in the subordinate clause when negated, making it clear that the assertion is only a presumption based on previous knowledge and not a statement of fact:

> *Il est vrai que les Français sont tous petits.* [indicative] 'It is true that the French are all short.'
> *Il n'est pas vrai que les Français soient tous petits.* [subjunctive] 'It is not true that the French are all short.'

Expressions of doubt or denial, including negative or interrogative expressions of otherwise certain thoughts or beliefs, necessarily require the *subjunctif*. The verbs *croire* 'to believe' and *penser* 'to think' also belong in this category because they have a strong assertive sense in French (Hansen 2016: 86). They therefore trigger the *subjunctif* only when used in negative or interrogative constructions, reestablishing their otherwise presumptive character:

> *Je suis sûr qu'elle a pris son parapluie.* [indicative] 'I am certain that she took her umbrella.'

Je ne suis pas sûr qu'elle ait pris son parapluie. [subjunctive] 'I am not sure that she took her umbrella.'

Croyez-vous qu'elle soit malade? [subjunctive] 'Do you think she is sick?'

Non, je crois qu'elle va bien. [indicative] 'No, I think she is well.'

Il est probable que Luc sera à la réunion. [indicative] 'It is likely that Luc will be at the reunion.'

Il est peu probable que Luc soit à la réunion. [subjunctive] 'It is unlikely that Luc will be at the reunion.'

Expressions of emotion (e.g., joy, fear, sorrow, regret, or surprise) trigger the sub-junctif because they are subjective feelings that make the situation real only in the mind of the speaker:

Je suis enchanté que vous ayez pu venir. 'I am delighted that you could come.'

Je m'étonne que vous travailliez si tard. 'I am surprised that you are working so late.'

A host of such expressions of emotion require the subjunctif in the subordinate clause: *avoir peur que* 'be afraid that', *être content que* 'be glad that', *être désolé que* 'be sorry that', *être heureux que* 'be happy that', *être surpris que* 'be surprised that', *se réjouir que* 'rejoice in', *se plaindre que* 'complain about', *regretter que* 'regret that', *craindre que* 'fear that'.

Under certain circumstances, the verb in the main clause can have what Hansen describes as "ambiguous modality", where the implication of the entire sentence changes significantly depending on whether the indicative or the subjunctive is used in the subordinate clause. (Hansen 2016: 90) In the following examples, the indicative presents the situation as a fact whereas the subjunctive makes it a matter of volition, turning it into a request for a future action:

Réponds-lui (Pierre), qu'il (Jean) attend. [indicative] 'Tell him that he is waiting.'

Réponds-lui (Pierre), qu'il (Jean) attende. [subjunctive] 'Tell him to wait.'

In the same vein, the subjunctif can express a suggestion as a preference for a certain action in the future:

Elle suggère que vous veniez la voir. [subjunctive] 'She would like you to come see her.'

Other verbs that are ambiguous in this way include *dire* 'to say', *admettre* 'to admit', *supposer* 'to suppose', *comprendre* 'to understand', and *expliquer* 'to explain'.

We come now to the requirement that the subjunctive be used in subordinate clauses following conjunctions other than *que*. These conjunctions fall into several categories, all introducing situations that are by themselves not real, not matters

of fact, but represent something short of achieving full realization of the action expressed by the verb, thereby triggering the *subjonctif*. They include the temporal conjunctions *avant que* 'before', *en attendant que* 'while waiting for', *jusqu'à ce que* 'until'; conjunctions setting conditions: *à moins que* 'unless', *pourvu que* 'provided that', *sans que* 'without'; those indicating a goal or purpose: *pour que* 'in order that', *afin que* 'so that', *de manière que* 'so that', *de façon que* 'so that'; and a number of others: *bien que* 'although', *quoique* 'although', *malgré que* 'despite the fact that', *puisque* 'since', *qui que* 'whoever', *quoi que* 'whatever', *soit que…soit que* 'either that…or that'. For example:

> *Qui que vous soyez, ouvrez la porte.* 'Whoever you are, open the door.'
> *Nous irons à la plage, à moins qu'il ne pleuve.* 'We'll go to the beach unless it rains.'

Finally, there are certain uses of the subjunctive that occur by themselves in independent clauses introduced by the conjunction *que*. These constructions are used to indicate requests, wishes, regrets, and even commands expressed as a request or desire:

> *Que personne ne sorte*! 'Let no one go out!'
> *Que Dieu vous entende*! 'May God hear you!'
> *Qu'il attende dehors*! 'Let him wait outside!'
> *Que le diable t'emporte*! 'May the devil take you!'

In these cases, the presupposition is not expressed but implied. The same can be said of certain fixed expressions that use the subjunctive in an optative sense:

> *Vive la France*! 'Long live France!'
> *Dieu vous benisse*! 'God bless you!'
> *Sauve qui peut*! 'Every man for himself!'
> *Advienne qui pourra*! 'Come what may!'
> *Ainsi soit-il*! 'So be it!'
> *Honni soit qui mal y pense*! 'Evil be to him who evil thinks!'

The last of the morphological tense forms in French is the conditional (*conditionel*). The *conditionel* also presupposes an action as a possibility (*potentiality*) based on a memory of past experience (*dissociation*) made by either the speaker directly or the subject of the main clause.

What sets the *conditionel* apart from the *subjonctif* is the fact that it also contains an element of certainty that ties the possibility to the "now" of the utterance situation, that validates the relation based on what is asserted to have actually happened. Hence we would conclude that the conditional is also marked for *validation*. That past experience provides the basis for what is projected to occur in the future

in such circumstances is further supported by the fact that English conditionals use the verb 'would', the past tense form of the lexically future verb 'will'.

In its temporal uses, we get sentences like the following example of indirect or reported speech:

> *Damien a dit hier qu'il partirait aujourd'hui.* 'Damien said yesterday that he would leave today.'

The action represented by the conditionel is not only future with respect to what Damien said, it binds the validity of the leaving to the statement Damien is reported to have made.

The same is true in examples of so-called free indirect speech:

> *Il raccrocha tout de suite avant d'avoir composé le numéro de Juliette. Finalement, il ne l'appellerait pas.* 'He hung up quickly before having finished dialing Juliett's number. In the end, he would not call her.'

Here the use of the conditionel, translated as 'would not call', binds the event and the presupposition to the implied judgment (*validation*) of the narrator.

The non-temporal or modal uses of the conditionel are actually more common and occur in independent clauses where the action is projected in some sense (*potentiality*), based on a presumption of what occurred or could occur (*dissociation*) that is either stated somewhere else or implied. In these cases the *validation* comes directly from the speaker him- or herself in the moment of speaking. In these types the projection of the action is validated by the speaker directly in terms of a presumption, a preference, or a desire. These uses can be divided into a number of subcategories. (Hansen 2016: 116)

In media discourse, where an event is presented based on some unstated presumption that a journalist presumes to be true:

> *Le Président de la République serait gravement malade.* 'The President of the Republic is allegedly [would be] very ill.'

In unlikely hypothetical situations, where the speaker states his or her own preference based on some antecedent circumstance:

> *Si je pouvais, je resterais bien encore une semaine.* 'If I could, I would love to stay here another week.'

In unreal or so-called counterfactual situations:

> *Si tu savais de quoi tu parles, tu ne dirais pas de telles énormités.* 'If you knew what you were talking about, you would not say such outrageous things.'

In situations where the desired event is made more polite by the speaker's person-alizing the situation, and the antecedent circumstance is unexpressed:

> *Tu n'aurais pas deux minutes? J'aimerais te parler.* 'Would you have [you wouldn't have] a couple of minutes? I would like to speak with you.'

What we have observed so far, then, shows that the conditionel shares the archetype of *potentiality* with the futur and the subjunctif, the feature of *dissociation* with the subjunctif and the two past tenses, and that of *validation* with the imparfait and the impératif, constituting a systematic relational structure. The totality of these relations can be diagrammed in the same manner as we did previously, where what was depicted above as a square would now become a cube, adding an additional square at the back for those forms marked for *potentiality*. In the diagram below, the back side of the cube is shaded.
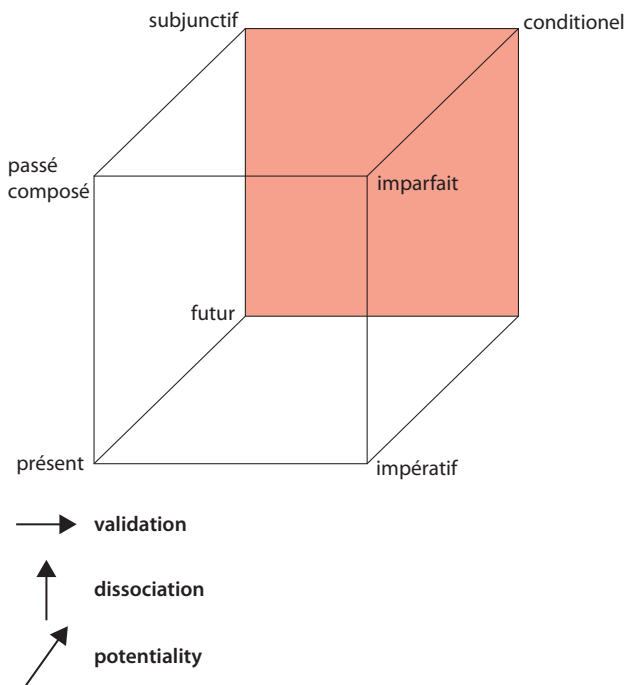
Just such a structure is what we should expect if the signs involved do constitute a system of relations. Thus the evidence provided here demonstrates how the archetypes of time-consciousness structure the signs of language in a verbal gram-matical system like that of French in a thoroughly comprehensive manner.

The structure of the lexicon

Transition to lexical meaning

As we transition to lexical meaning, let us review the position we have taken regarding the difference between lexical and grammatical meaning.

In the first place we have insisted that the process of contextualization by which the signs of language generate meaning must apply in both realms equally as far as the capacity to make reference is concerned. We have challenged Ruhl's Vocabulary Principle that grammatical categories reflect "primary, unconscious order remote from reality" while lexical ones operate at the alert end of the spectrum of consciousness directly related to our experience of reality. We have maintained that the contextualization process must be operative unconsciously in both domains at the most profound supra-rational level where the archetypes that define the relations between signs reside. We have already tested this assumption in part by demonstrating that the same conceptual archetypes that structure grammatical categories also operate in a closed, quasi-lexical category like that of prepositions. In the same vein we have questioned Jakobson's assertion that the grammatical patterning of language constitutes a "meta-linguistic" operation that is distinct from the "ontological problem of reference". When the contextualization process is understood as a properly self-referential one, then the process itself constitutes a meta-linguistic operation that functions in the same fundamental manner in both domains. It remains then to determine the extent to which the kind of patterning observable in the grammatical realm is also discernible in the lexical realm.

On the other hand, we have also noted that there is a basic difference between the two realms in the manner in which the contextualization process operates. While in both cases the speaker chooses between one or the other side of a sign relation, the choice itself is obligatory where grammatical categorization is concerned and optional in the lexical realm. In the grammatical realm, for example, one must choose between a past and a non-past tense form when using a verb in English, or between the perfective and the imperfective aspect when using a verb in Russian. Likewise the order in which words are used to construct a sentence is controlled by the modification relation which strictly limits the way in which one word modifies another to produce meaning. On the other hand, one is free to choose any preposition or other part of speech depending on what is on one's mind, the choice being regulated only by the relations among the various

lexical items themselves and the modification relation that governs the order in which they occur.

Lewis Carroll's "Jabberwocky" provides a vivid illustration not only of this distinction but also of the fundamentally self-referential capacity of signs to generate meaning in both domains. Originally intended as a playful exercise in creating an aura of otherworldliness, the poem "works" only because all of the obligatory grammatical categories of English (number, tense, articles, conjunctions, and most particularly the syntax), as well as the closed category of prepositions, remain intact, as they must if the poem is to convey any sense at all. Only the genuine lexical items (nouns, adjectives, adverbs, and verbs) are the subject of imaginative invention, true to their nature as optional categories.

The lexical items themselves, however, do appeal to the English speakers' sense of meaning in a particular way, and this is where the self-referential capacity of signs is relevant. Scholars, including Carroll speaking for himself in personal commentaries about Alice after the fact, or through Alice herself in her own words, have suggested possible references for virtually all of the lexical items. These have been based in no small measure on iconic relations with other English words. Thus, for example, when the "slithy toves did gyre and gimble in the wabe", one thinks of something 'lithe' and 'slimy', 'nimbly' spinning like a 'gyroscope' in some sort of 'wavy' landscape. When the Jabberwock comes "whiffling through the tulgey wood", one thinks of it 'airily whistling' through some sort of dark or dense forest. The "frumious Bandersnatch" easily conjures up images of a 'fuming' and 'furious' animal with 'snapping' jaws that grabs or 'snatches' you; and of course the name of the Jabberwock itself suggests a creature given to a lot of 'wacky' vocalizing, consistent with its "whiffling" through the forest.

The point of this illustration is to demonstrate that the referential capacity of lexical items is not tied to anything specific to our perception of real world properties, but to the capacity of the signs themselves to create meaning in accordance with the image-making properties of the linguistic system generally. This in turn implies that the same principles of semantic organization that structure our experience of reality in the grammatical domain should also exist in the lexical realm, constituting part of the "primary unconscious order", to use Ruhl's term, that we have been calling the supra-rational level of consciousness. Consequently, we must investigate the structure of meaning in the lexical sphere to determine the extent to which the same image-making properties exist there as well, in the form of the conceptual archetypes we have already identified.

Archetypes in the nominal lexicon

The archetypes we have identified in this study represent the most fundamental aspects of space- and time-consciousness that are embodied in the signs of language and provide the cognitive patterning which informs our experience of reality in a variety of different ways. In the realm of grammatical meaning, including that of syntax, they play an exclusive limiting role defining the rules by which utterances must be structured if they are to be judged well-formed. In the case of quasi-lexical category of prepositions, which are less restrictive, the same set of archetypes plays an organizational role, structuring the relations between the signs and forming them into a system. When it comes to lexical categories proper, the role played by the archetypes of space- and time-consciousness, as we will demonstrate, is less comprehensive, but still remains a fundamental structuring device, even in the case of open-ended categories like nouns and verbs. Obviously, such a highly limited set of archetypes cannot possibly distinguish among the meanings of all the lexical items in a given language, but that is no longer their purpose. As long as we appreciate the fact that reference in language is not a matter of designating particular elements in exogenous reality but of organizing our experience of reality in a properly self-referential manner, then the archetypes of space- and time-consciousness inherent in the signs of language remain fundamental structuring devices, identifying certain fundamental characteristics of events and things that inform our cognitive appreciation of reality.

We witness the role these archetypes play in the lexical domain all the time when we observe the way in which words form clusters with similar meanings – the basis upon which the concept of synonymy is founded. We gave an initial example of such clustering around a given archetype or combination of archetypes in the previous discussion of the so-called collectives in English. This set of nouns, as we observed, exhibit the properties described by the combined archetypes of *plurality* and *delineation*, where a multitude of unspecified elements is viewed as a single, unified whole: e.g. 'bundle', 'bunch', 'batch', 'cluster', 'clutch', 'group(ing)', 'assemblage', 'collection', 'set', 'assortment', 'series', 'bouquet', 'spray', etc. Nouns like these have pluralistic, one-dimensional content enveloped in a single, two-dimensional space. In these nouns there is no evident relationship among the individuals that comprise the collective. The nature of the individuals remains unspecified.

Another cluster of words with these same characteristics, however, does display the additional feature of being defined by the relationships that exist between the members of the group: e.g. 'team', 'cast', 'crew', 'staff', 'ensemble', 'orchestra', 'quartet', 'alliance', 'union', 'association', 'assembly', 'gathering', 'congregation', 'crowd', 'gang', 'pack', 'family', 'society', 'company', 'army', and so forth. The individuals in these cases represent animate beings whose relationship within the group exists for a reason: to do something or to perform a function. These therefore constitute relationships that take place in time as well as space, involving activities that are defined on their function in the here and now. Consequently, we would conclude that this cluster of words is additionally marked for the feature of *validation*, the archetype that brings time-consciousness into the conceptual underpinning of nouns.

Even a word as seemingly concrete as 'table' in English can be analyzed in terms of archetypes that describe its most fundamental characteristics, evident in all of its numerous contextual manifestations despite their seemingly disparate applications. The first and admittedly most common association we make when we hear the word 'table' is with articles of furniture, much as we instinctively associate the prepositions 'up' and 'down' with the notion of verticality. Because these are the most common or prototypical senses, they are the first ones listed in a dictionary. But again from a sign-theoretical point of view, such immediately evident contextual applications need to be analyzed in light of the full range of possible contextualizations associated with the form in question to determine what conceptual property or properties underlie the word's ultimate potential. Only in that way can we ascertain which properties are essential to its meaning as opposed to those that are merely circumstantial.

Such an analysis requires us to distinguish between the concept of prototype and that of archetype, terms that are sometimes used interchangeably in cognitive linguistics. Langacker, for example, uses the concept of archetype in the conventional dictionary sense, as an original model, first form, or prototype that our basic cognitive abilities are said to build upon, ultimately producing a schematic conceptual structure that explains the use of lexical items. (Langacker 2013: 97–104) In this view, the conceptual archetype or category prototype for a noun is said to be that of a physical object, and the cognitive ability that builds upon it allows us to conceive the meaning of a noun as a conceptual category that profiles a "thing" as a product of conceptual reification. Such a structure then provides the basis for conceiving of other phenomena that are not objects as "things" as well, with similar schematic conceptual structure.

It should be clear by now that we have been using the concept of archetype in the Jungian sense, the more specialized sense of the word that is commonly listed second in the dictionary, and is decidedly different from that of prototype. The archetypes that we have been identifying and defining here represent collectively

inherited patterns of thought or images that populate the psyche at the most profound, transpersonal level of consciousness. These are the images that are embodied in the signs of language, from which the multi-faceted, polysemic aspects of experience ultimately derive by means of the process of contextualization. In this view, the defining characteristics of nouns do not originate in the notion of physical object, the various types of physical objects identified by nouns derive from the archetypal characteristics that define their essence at the most profound level of consciousness.

Applying this reasoning to the underlying meaning of the word 'table' in all of its possible applications, we will see that what is conceptualized is a certain kind of surface, a circumscribed two-dimensional space, that specifically serves a function. This is already evident from the origin of the word in Latin as a tablet, a surface that provides a foundation upon which writing, drawing, or other related activity is performed. From there we get all manner of possible layouts on a surface as subsequent contextual applications: tables of contents, periodic tables, multiplication tables, actuarial tables, and so forth. In the case of furniture the functional aspect of the surface is just as evident: we speak of dining tables, coffee tables, gaming tables, seminar tables, and the like. Clearly, the surface involved has significance beyond its mere appearance: tables are more than just objects; they are two-dimensional surfaces that exist for a purpose, one that depends on the "now" of the given utterance for its identification. This functional aspect is also evident in expressions like 'water table', signifying the level that a body of water reaches at a given time; and 'tableland', a level expanse that functions as the surface atop a piece of land. Particularly revealing are the more "exotic" uses of 'table' in anatomy, architecture, gemology, carpentry, and sail-making. Indeed, it is frequently the more technical or figurative contextualizations of a word that provide the best clues as to the relevant features involved, for these are the uses that exemplify the mind unconsciously utilizing the underlying essence of a sign to express qualities of things that would otherwise not have anything necessarily to do with the more mundane, prototypical use of a word. In anatomy, 'table' refers to the bony layers that function as the outer surface of the skull; in architecture it signifies a cornice, the uppermost decorative surface of a column that serves as the support for the roof; in gemology it is the upper horizontal surface of a certain kind of diamond that gives it value; in carpentry, 'to table' means to join two pieces of timber together by means of oblong projections in each alternately, so that they fit into corresponding recesses in the other; and in sail-making, 'table' means to make a broad hem or 'tabling' on the edge of a sail to strengthen it in that part which is sewed to the bolt-rope.

The properly abstract concepts that underlie the word 'table', therefore, clearly have two fundamental properties: a two-dimensional surface, and functionality

or the purpose which the surface serves. The functional aspect would certainly suggest, in terms of the archetypes we have identified, that *validation* is entailed, since the surface is necessarily defined by its function or role in the "now" of the given situation. The underlying conceptualization of the surface itself would certainly indicate that *delineation* is also implied, creating a two-dimensional space for the given function to take place. On the other hand, the fact that many of the contextualizations of the word 'table' involve an upper or outer surface, including the furniture variant where the surface normally sits atop a support of some sort, might be taken to be germane to the underlying meaning of the word, were it not for the fact that one of its principle variants lacks this characteristic. This is the one, no less, that derives from the original meaning of the word, namely the tablet sense, from which we get tables of contents, actuarial tables and the like. It is only by observing all of the potential contextualizations of a noun like 'table' that we can distinguish between those characteristics that are fundamental to its meaning and those that are merely circumstantial.

Having determined, at least initially, the archetypes that underlie a word as seemingly concrete as 'table', we can now appreciate how the combination of these particular features also serves as the foundation for an entire cluster of related words, synonyms or partial synonyms of the word 'table', all listed as such in the dictionary. In the context of furniture we get words like 'counter' (a surface for serving people) and 'bench' (a surface for sitting on). In the sense of tablet we find a host of words that signify a two-dimensional space with a function on a par with 'table of contents', such as 'layout', 'list', 'register', 'record', 'chart', 'catalogue', 'index', 'inventory', and 'précis'. The same functional sense extends to the word 'board', which retains its original connotation of a table spread for meals in the expression 'room and board', the provision of food and lodging for guests, as well as 'boarder', someone who receives both food and lodging. Finally, in the geographical sense we get the word 'plateau', which carries the same functional connotation as 'water table': a surface whose level is again determined by the nature of the given situation – cf. the verbal use of 'plateau', to reach a level or stable state after an increase.

It is interesting in this regard to compare the words 'plateau' and 'mesa'. Whereas both words are considered synonyms of 'tableland', the functional sense inherent in both 'tableland' and 'plateau' is absent in 'mesa', which merely represents a flat surface of land atop a rise. The difference is no doubt due to the fact that English 'table' derives from Latin 'tabula', meaning plank, table, or list; whereas 'mesa' is a relatively recent borrowing from Spanish and, as is common with such borrowings, has not retained the meaning of the original, losing the functional sense it has in Spanish (from Latin *mensa* meaning 'table') and keeping only the purely spatial connotation as a land form. That the functional sense is missing from 'mesa' is also evident from the fact that both 'table' and 'plateau' form verbs

with a decidedly functional or time-conscious meaning, whereas there is no sense in which 'mesa' could even be used as a verb. The noun 'mesa' itself, however, is a member of another cluster of words that contain only the spatial meaning of a circumscribed two-dimensional surface, in this case involving various types of landforms whose prototypical sense is that of a 'plain': e.g. 'prairie', 'pasture', 'grassland', 'meadowland', 'pampas', 'llano', 'savannah', 'steppe', 'tundra', 'heath', and 'moor'.

Before moving to the next stage of this analysis, let us consider one more example of a circumscribed two-dimensional surface serving a function defined by the circumstances of a given situation, namely the word 'plate'. Here again we can see that what strikes us immediately as a common object of experience, something that you put food on or set a table with – the prototype of what we think of as a plate – does not capture the essence of the concept of 'plate' in the human mind. The meaning of English 'plate' comes initially from medieval Latin *plattus*, meaning "flat", which became Old French *plate*, with the sense of a "thin plate or lamina of metal", as in 'plate of armor'. English has taken this underlying sense of 'plate' and applied it to all measure of such surfaces that serve a purpose. Thus we get, not only 'dinner plates', 'serving plates', and 'communion plates', but also 'door plates', 'license plates', 'book plates', 'photographic plates', 'engraving plates', 'dental plates', 'home plate', and a host of more technical applications: a light shoe for a racehorse; a stereotype, electrotype, or plastic cast of a page of composed movable types; a metal or plastic copy of filmset matter, from which sheets are printed; the anode of a thermionic valve; and a horizontal timber laid along the top of a wall to support the ends of joists or rafters. Once again, these latter, highly technical contextualizations really tell the story: that we are ultimately dealing with the conceptualization of a circumscribed, two-dimensional surface that serves a specific function in a particular type of situation. Why else would you use a word like this in such highly specialized situations unless it expressed the most fundamental essence of what the situation required? So here again we observe another common word we use to signify an object of everyday experience accounted for as a member of a cluster of words organized conceptually in the mind at the highest level of consciousness by the same two archetypes of meaning: *delineation* and *validation*.

We could continue with further examples of nouns clustered around such archetypes, demonstrating that even the most concrete objects are referenced by lexical items whose underlying meanings are ultimately structured by the same cardinal set of features that underlie grammatical meanings, embedded deep inside the psyche at the supra-rational level. It is especially significant that nouns, which serve to identify the essential attributes of things, may have in their constitution an archetype of time-consciousness. This should not be surprising, given the central role that time-consciousness played in the evolution of consciousness in man, without which language itself would not exist. Because of this

monumental evolutionary development, when the human mind conceives of a thing, it necessarily has a more profound appreciation of its significance beyond its mere presence as an object in space. Equally if not more important is its functional value as a construct in human consciousness, and this value can only derive from the sense of time-consciousness that distinguishes the human mind from that of our primate cousins.

In the previous discussion of evolution, we made a crucial distinction between the primate ability to use tools and the human capacity to "use a tool to make a tool", between merely using a thing and manufacturing one. Anything that is manufactured must have a purpose, a functional value derived from the specific ability to conceive of a potential that lies beyond its mere appearance or use in the given situation, clearly a time-conscious faculty that only humans possess. This essential, higher-order capacity to construe objects, we may presume, would therefore have resulted in objects in general being conceptualized in terms of whether or not they have functional value, thereby distinguishing those objects whose function is central to their conception from those that do not possess such a function. Consequently, we may hypothesize that the nominal lexicon is bifurcated in a very general way between the representation of manufactured objects like tables and plates on the one hand and other objects like rocks, water, birds, and so forth – the archetype of *validation* being the conceptual category that permeates the lexicon as a relational construct of the human mind distinguishing the two. While it is true that the latter type of objects may be used functionally in certain circumstances as well, that is not their defining characteristic.

The concept of noun in English, however, does not only apply to the representation of things per se, of entities. It allows us to conceive of things as substances and abstractions as well. It does so by distinguishing between count nouns (entities), mass nouns (substances), and abstract nouns respectively. Moreover, and most importantly, one and the same noun may be construed in different ways, depending on the context in which it is used. A mass noun like 'stone' can also be used as a count noun when talking about one or more individual stones. Langacker has termed this phenomenon "variable construal", and he provides an extended list of such nouns: e.g. 'rock', 'tile', 'glass', 'hair', 'cloth', 'cake', 'steak', 'thought', 'insight', 'pain', 'rest', 'law', 'principle', etc. In his words, "As a mass noun, each names a physical or abstract 'substance', whereas the count noun variant designates a bounded entity composed of that substance". (Langacker 2013: 143) On the other hand, count nouns like 'table', 'chair', 'box', 'toy', 'cup', 'shin', 'foot', 'tree', 'leaf', and so forth, cannot be used as mass nouns. They can only be conceived as individual entities. So the relation works only in the one direction, suggesting that there is an underlying distinction between the two types of noun despite the variable construal in the first type.

Consequently, we may postulate that mass nouns represent things primarily as substances, whereas count nouns represent them as entities. Furthermore, since entities can be derived from substances and not the other way around, there must be a hierarchy between the two, one that would explain the count noun variant of mass nouns as a natural progression. That is indeed what we do find in the hierarchy of archetypes that constitute space-consciousness. A substance is something that has no specific form or shape but consists of an unspecified multitude of individual particles with the potential to separate themselves into individual entities. This is a virtual description of *plurality* as we have defined it here: an infinite number of possibilities occupying a one-dimensional space. Mass nouns therefore would be marked for *plurality*. Entities, for their part, are phenomena capable of separation from one another so that the mind can focus on them individually and consequently count them. This is exactly what is described by the archetype of *separation*, the three-dimensional archetype that ultimately derives from one-dimensional *plurality* in the hierarchy of spatial archetypes. This hierarchy would therefore account for not only mass nouns and count nouns but also the count noun variant of mass nouns in a completely natural way.

As for the category of abstract nouns – e.g. 'beauty', 'dedication' 'evil', 'fear', 'hope', 'intelligence', 'loyalty', 'patience', etc. – they do not have a distinctive quality of their own in this regard. They function as either mass or count nouns depending on the manner of their contextualization. They normally act like substances and would therefore be inherently marked for *plurality*. But they can, often metonymically, represent a person or a thing: e.g. 'She's a real beauty', 'We have only one hope left', in which case the marking of *separation* would again be derived from the underlying *plurality*, as with the count noun variant of mass nouns.

Thus the structure of the noun in English can be described in terms of the same set of conceptual archetypes we have been working with, operating at the most profound level of consciousness.

Archetypes in the verbal lexicon

Finally, let us consider the lexical structure of verbs. If the phenomena referenced by nouns are substances and things, those referenced by verbs are events, actions or activities that are being undertaken in the "now" of the given utterance situation, no matter what specific time frame may be indicated. It should be obvious, therefore, that the category of verb would be marked for *validation*, the archetype that establishes the basis for time-consciousness in the human mind and allows us to conceptualize events and actions as processes that occur over time. It is also evident that like nouns, individual verbs also pattern themselves in clusters around certain of the archetypes or combinations of archetypes we have been describing here.

Consider the verbs of motion in English. The most generic one is surely the verb 'go'. In fact, its meaning is so broad that it references actions that have nothing necessarily to do with motion per se: e.g. 'go to sleep', 'as the story goes', 'go crazy', 'go by the name of', 'this tie goes with that shirt'. There is even the colloquial use of 'go' to describe someone talking: '…and then he goes…'. What captures this generic sense, of which motion per se is the principal variant, the prototype if you will, is the implication of a process aiming somewhere, where the target is either implied or stated overtly as a destination, a goal, or simply an effect. From this evidence we would conclude that the verb 'go' is marked for *potentiality*, the archetype that projects in a time-conscious manner. A whole range of other more specific verbs of motion would likewise have *potentiality* as a major component of their underlying meaning: e.g. 'walk', 'run', 'travel', 'proceed', 'move', 'start', 'advance', 'shift', 'transfer', 'migrate', 'emigrate', 'leave', 'depart', and so forth.

Several of the verbs in this group also imply that the source of the motion is being left behind. This sense is especially strong in verbs like 'shift', 'transfer', 'migrate', 'emigrate', 'leave', and 'depart'. The source remains implicitly as a reference point for the action, one step removed from the process in just the sense defined by the archetype of *dissociation*. These verbs would therefore be marked for both *potentiality* and *dissociation*. The sense of leaving something in the past is also evident in verbs like 'disappear', 'vanish', 'evaporate', 'fade', 'disband', 'release', 'discharge', 'remove', 'oust', 'fire', 'disregard', 'reject', 'repudiate', and 'disperse'.

Other verbs express the sense of *potentiality* in more indirect ways, where the realization of a goal is only a possibility. The goal may be relatively concrete, as

in 'expect', 'wait (for)', 'anticipate', 'contemplate', 'foresee', and so forth; or it may be abstract, as in 'wish', 'want', 'hope', 'desire', 'crave', 'yearn', 'dream', and the like. Still others present the sense of *dissociation* without the implication of *potentiality*. These include verbs that express the completion of an action, leaving something behind with no sense of any future goal: e.g. 'finish', 'cease', 'end', 'stop', 'terminate'; to which we should also include 'kill', 'exterminate', or 'destroy'.

Spatial archetypes also play a role in the structuring of the verbal lexicon. We have already noted the central role that one-dimensional *plurality* plays in distinguishing transitive from intransitive verbs. The way we have insisted on defining *plurality*, however, should make it clear that verbs like 'add', 'count', 'enumerate', and the like are not marked for *plurality*. They have the same structure as count nouns in that they presuppose the *separation* of entities in order to perform the process. The verb 'multiply' would also not be marked for *plurality*, for a different reason. It belongs rather with verbs like 'increase', 'augment', 'amplify', 'expand', 'magnify' and the like that signify actions projected into the future and would therefore be marked for *potentiality*.

Two-dimensional imagery is evident in verbs marked for *delineation*, such as the verb 'delineate' itself, as well as 'frame', 'outline', 'circumscribe', and 'profile'. The archetype of *delineation* also defines a cluster of verbs that present the image of wholeness, of a two-dimensional lexical completeness. These include the verb 'complete', as well as 'attain', 'achieve', 'accomplish', 'fulfill', 'realize', and so forth. Here again we must distinguish between the sense of "complete" and that of "completed", as we did in analyzing the perfective aspect in Russian. Although "complete" may indicate an action with a terminal point in certain contexts, the general meaning of verbs marked for *delineation* is distinct from that of verbs marked for *dissociation* like 'finish', 'cease', 'end', 'stop', and 'terminate' that we noted above.

In addition to verbs involving counting noted above, there is a host of other verbs that create *separation*, including the verb 'separate' itself, as well as 'split', 'divide', 'bifurcate', 'disconnect', 'disengage', 'detach', and so forth. The three-dimensional imagery inherent in the archetype of *separation* is also evident in verbs like 'distinguish', 'classify', 'codify', 'organize', 'group', 'collate', and the like, which depict actions that establish the individuality of some phenomenon.

Clearly, the verbal lexicon requires a far more detailed analysis than we can give it here of this kind of clustering as a fundamental structuring device. What we have tried to do in this section is to provide a preliminary analysis of how the underlying semantic values associated with both nouns and verbs are accounted for at the most profound level of consciousness by the archetypes of meaning we have identified and illustrated throughout this monograph. At the very least, this exercise should demonstrate once and for all that the ontological problem of reference and the grammatical pattern of language are both equally grounded in the

function of the conceptual archetypes that ultimately govern the production of meaning in language.

Furthermore, the fact that the meanings of individual nouns and verbs tend to cluster around these archetypes and combinations thereof strongly suggests that the archetypes themselves function in a fundamental way as unconscious associative networks governing the production of meaning by linguistic signs. To the extent, therefore, that cognitive science already possesses the tools to justify the existence of such relational networks as properties of implicit memory, those very tools may prove to be valuable in bridging the gap between current cognitive studies and studies of constructs at the transpersonal level, such as those represented by the conceptual archetypes identified herein. Hopefully this monograph will provide a starting point for such an investigation in the future.

Epilogue

Towards a quantum theory of meaning in language

> I am not a thing – a noun. I seem to be a verb, an evolutionary process – an integral function of the universe. R. Buckminster Fuller

On a number of occasions throughout this monograph we have suggested that, since the hierarchy of archetypes underlying the sign relations of language recapitulates the dimensions of the space-time continuum in quantum physics, human consciousness may well contain the consciousness of the universe itself at the supra-rational or transpersonal level. In this view, it is consciousness that produces the experience of matter, not the other way around as in conventional Western science. To this end we have noted Amit Goswami's thesis that objects are already in consciousness as "primordial, transcendent, archetypal possibility forms", and it is the collapse of their wave function that allows them to be observed at the experiential level. On the basis of this understanding we have suggested that the process by which the sign relations of language contextualize their underlying meanings can also be seen, metaphorically at least, as recapitulating the collapse of the wave function in quantum physics. From this perspective, the relations between signs at the pre-contextual level of transpersonal consciousness constitutes their wave function, which is converted into manifestations of individual signs necessarily occurring in a context at the rational level.

Despite all that has been written presenting quantum theory to non-physicists, however, it still remains difficult to go much beyond a metaphorical appreciation of this argument. We can understand the idea behind Schroedinger's thought experiment with the cat, perhaps, and even appreciate the difference between so-called strong and weak objectivity, as described earlier, but only in a general sense. What exactly does it mean, for example, that observation is a matter of probability, that while the object itself may be real, our experience of it depends on a potentially infinite number of observations to produce the sensation of reality – that the object we perceive is actually there where we think it is?

Fortunately, we can gain a better understanding of these ideas given some very recent presentations of quantum theory, and when we do, the picture that emerges is even more suggestive of the parallels between quantum reality and the structure and function of sign relations in language than we have considered so far.

One recent publication in particular, that of the Italian theoretical physicist Carlo Rovelli, provides an especially lucid explanation of how quantum mechanics actually works, what the basic assumptions or building blocks are behind the theory of quantum reality, particularly with respect to the notion of waves and particles. (Rovelli 2017; herinafter ROV) Not being a student of theoretical physics myself, I borrow extensively from his work in the following presentation.

The first thing to note is that the very notion of waves, as they are said to pertain at the subatomic level, is at best metaphorical and at worst misleading. In fact, there are no waves per se; rather, there are what is known as quantum fields, fields of particles that act like clouds, but are in the end still particles floating around in a field of energy that cannot be experienced at the level of reality in which human life on earth exists, trapped between the subatomic and cosmic realms. The energy in these particles is only released when they bump up against one another and emit the light, the spectra of color that allows us to see them. It is these emissions that the human eye picks up and get transposed into the shapes of things. Thus the universe is still made up of particles even at the subatomic level, but the particles – like the objects that in Goswami's formulation exist in consciousness as possibility forms – only release their energy or come into being in our earthly world at certain moments of their existence. These moments occur so rapidly and are of such a small scale that their individual emissions cannot be observed, so what appears to the senses is something stable, created by a very large number of emissions, which we perceive as objects in the real world.

There are several aspects of this phenomenon that need to be fleshed out, that actually make the correspondence with the contextualization of sign relations as we have described it here rather remarkable. Rovelli lists three key characteristics of the ultimate nature of things that quantum mechanics reveals: *granularity, indeterminacy*, and *relational structure*. As he states it, "the granularity of matter and nature is at the heart of quantum theory". (ROV: 130) The particles whose energy is eventually released are already in the quantum fields as possibility forms. Not only that, their status as possibility forms implies that they are not just there, like pebbles; they constitute part of a field of energy in which they constantly vanish and reappear. Thus in Rovelli's words, "The world is a sequence of granular quantum *events*." (ROV: 132, emphasis added.)

This brings us to the second fundamental characteristic of quantum reality, indeterminacy. Since there is no way of knowing with certainty when or where a given particle will appear, the underlying system is in a fundamentally indeterminate state, subject to the existence of random events and the laws of probability. We cannot directly observe this activity because it exists on such a small scale: "the microscopic randomness cancels out on average, leaving only fluctuations too

minute for us to perceive in everyday life." (ROV: 123) What we actually perceive, therefore, are the results of the constant interaction between particles.

This brings us to the third characteristic: the fundamentally relational structure of quantum events. In Rovelli's words again,

> The theory does not describe things as they 'are'; it describes how things 'occur', and how they 'interact with each other.' It doesn't describe *where* there is a particle but how the particle *shows itself to others*. The world of existent things is reduced to a realm of possible interactions. Reality is reduced to interaction. Reality is reduced to relation.   (ROV: 134–5)

Moreover, and perhaps most importantly, the nature of the correspondence between "things" and "relations" is not what is commonly thought: "It isn't *things* that enter into *relations*, but rather *relations* that ground to the notion of *thing*." (ROV: 135) This is a vital distinction, one that underscores the fundamental nature of quantum reality, that the world is not made up of objects but of events, events which depend on the underlying relational structure of the system for their existence, for their ability to interact and produce the perception of objects.

One could hardly ask for a better description of how the sign relations of language produce meaning in actual speech events – i.e., how the contextualization process ultimately operates. In the underlying structure of language, at the supra-rational level of consciousness, there are signs, of course – just as there are particles in a quantum field – but as we have insisted throughout this study, individual signs by themselves do not have meaning of their own at this level. Their capacity for making meaning resides in the relations that exist between them in higher order consciousness, defined by the fundamentally indeterminate nature of the archetypes we have identified. The meanings that signs evince at the rational level of consciousness depend on their coming into contact with other signs in the context of the utterance in which they are used. This contact is what releases their energy, as it were, and brings their underlying relational properties into awareness in terms of the specific contextual events we interpret as individual polysemous meanings. It is in this sense, then, that we can speak of a quantum theory of meaning.

There is yet another aspect of quantum reality that parallels that of language, that derives from the fundamental granularity of nature. Since the particles that make up a quantum field vanish and reappear, and there is no way of knowing with certainty what state they will be in at a given moment, one might think that the indeterminacy inherent in such a system implies that there are an infinite number of possible states the system could be in. But it turns out that there is "a limit to the *information* that can exist within a system: a limit to the number of distinguishable states in which a system can be". (ROV: 131) The technical reason for this is

beyond the scope of this discussion to explain. Suffice it to say that it has been proven mathematically to be true and to have general applicability. The parallel to language that one can draw from this observation, however, is not difficult to appreciate. We have noted on a number of occasions that the indeterminacy inherent in the nature of an archetype, together with the notion of sign relation as a potentiality that can never be fully realized, may be taken to imply that the number of possible contextual applications of a sign is therefore potentially infinite. Except for one crucial fact: that the scope of the contextualization process is always limited or controlled by a set of grammatical relations, that set of signs which obliges the speaker to make a choice of one or the other pole of the relation in order for an utterance to be deemed well-formed. Recall that we defined the difference between grammatical and lexical meaning in terms of the obligatory nature of the former as opposed to the optional nature of the latter. We have further insisted that the set of grammatical relations includes not only morphological ones like tense in English or aspect in Russian, but also and most importantly the modification relation that ultimately sets the conditions under which utterances may be structured syntactically. So although the creative aspect of the use of signs has indeterminacy at its core, just as in a quantum system, the number of possible states the system allows is finite. Poets can test these limits and push the envelope, but only so far before their creations become one-off contextualizations that have limited or no survival value.

Finally, let us look at the role of time in quantum reality. At the microscopic level at which quanta function, time in the sense we conceive of it in the real world does not exist. The operative variable in the quantum realm is not time but change, specifically how things evolve with respect to each other. As Rovelli states it, "Things change only in relation to one another. At a fundamental level, there is no time. Our sense of the common passage of time is only an approximation that is valid for our macroscopic scale. It derives from the fact that we perceive the world in a course-grained fashion." (ROV: 182) In the quantum realm, he goes on, there is "no longer time 'during the course of which' events occur. There are elementary processes in which the quanta of space and matter continuously interact with one another." (ROV: 183) Recall now what we have been saying about the representation of time-consciousness in language. We have insisted that our rational sense of the flow of time as a progression from past to present to future actually supervenes on a more profound sense of time as modality, specifically as degrees of detachment from the certainty of "now". Furthermore, we have insisted that this deeper sense of time is strictly relational: not only do the two archetypes of the "not now" (*dissociation* and *potentiality*) derive their meaning from their degree of detachment from the "now" (*validation*), but the "now" of language itself is defined in a

strictly self-referential manner: on the "now" of the situation being described in the given utterance where individual signs necessarily interact with one another.

Thus the structure and function of the conceptual archetypes that define the relations between the signs of language as constructs of consciousness at the most profound, supra-rational or transpersonal level mirror in significant ways the structure and functioning of reality in the quantum realm.

We have provided in this study a carefully reasoned and broadly documented picture of the production of meaning via language as a truly dynamic, self-organizing system. In this view, the linguistic sign itself and its relational properties at the most profound level of human consciousness provide the energy necessary to produce the events that keep the system alive as a genuine evolutionary process operating in real time. This process, we have insisted, necessarily functions in two directions. On the one hand, the generating power of the system resides in a relational structure of linguistic signs defined by indeterminacy, capable of producing a potentially infinite number of contextual possibilities. These contextualizations, in their turn, are then legislated by the community in which the particular set of signs occurs, providing the feedback that determines the ultimate trajectory of the system. Thus the process is both a cognitive one and a social one at the same time.

On the cognitive side, the contextual applications of a sign, the polysemous meanings we associate with individual signs once inserted in a context, are properly viewed as the results that the system produces at the rational level of consciousness, where everything occurs in a context. When we assert that individual signs by themselves have no meaning, that is because the specific meanings we associate with them are necessarily engendered by the context in which they occur. The meaning-generating power of the system, on the other hand, resides in the pre-contextual environment at the supra-rational level where signs constitute a truly relational structure. This structure, moreover, is ultimately defined by a particular set of conceptual archetypes established, as we have demonstrated, by the evolution of the linguistic sign itself from the signaling activity of antecedent species. It is this process that allows for the expansion of our cognitive domains as emergent properties of the very use of signs.

On the social side, the process functions as a somatic selection system, one where the legislative activity of the community determines which contextual applications will have survival value and which not. Thus the system operates as a stochastic process where a spontaneous generator is coupled with a selection mechanism, a process that has consequences in the social sphere in which it necessarily operates. It is this process that produces our sense of polysemy, where some contextual applications are perceived to have more value than others based upon their relevance in certain situations.

In the final analysis, these two fundamental aspects of the production of meaning via signs suggest a more than superficial affinity between the principles being put forth here and those of quantum physics. On the one hand, the nature of the system of signs as we have described it, as a relational structure with an open-ended potential for contextualization, mirrors how quantum physics describes the manner in which we perceive objects in the real world, as we have just shown. And on the other hand, the conceptual archetypes that we have derived from a systematic analysis of the use of signs in all areas of language structure, from the grammatical, including the syntactic, to the lexical, recapitulate the space-time continuum of quantum physics. Surely this affinity has implications beyond the confines of this one study, pointing to the possibility that the consciousness of the universe resides in all of us, embodied in the relations between the signs of language.

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Index

In this his latest book, Sangster presents a comprehensive theory that takes the cognitive view of language in a promising new direction, based upon how linguistic signs relate to one another at different levels of consciousness. At the rational level, where signs are necessarily experienced in context, they are primarily polysemic. At the transpersonal or pre-contextual level, however, they are monosemic, constituting a dynamic and self-organizing relational structure capable of producing a potentially infinite variety of contextual applications. The two levels are united by a stochastic or somatic selection process called contextualization, where feedback from experience assures the evolution of the system. The relational structure itself is composed of archetypes of space and time consciousness that derive from the evolution of the linguistic sign from the signaling behavior of antecedent species. Detailed analyses are provided to explain how the archetypes structure meaning in both the grammatical and lexical spheres, as well as in syntax.

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