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A Lateral Theory of Phonology

What is CVCV and why should it be?

by

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1 Editorial note: two volumes

When I set out to write this book in fall 2001, I merely intended to make my habilitation thesis available to the English speaking audience (all academic work in France must be written in French). The initial division included three chapters that were designed to explain what CVCV is (chapter one), why it should be (chapter two) and which place is assigned to locality, morphology and phonology in this kind of theory (chapter three). A draft version of the first two chapters circulated since late summer 2002. While work on the last chapter progressed in spring 2003, it appeared with increasing clarity that the original project would not fit into one volume.

The most natural seam was after chapter two: at this stage of the discussion, the reader has been fully introduced to CVCV. The remaining text, then, refines this basic model, explores its potential and positions it in regard of other modules of the grammar and its general architecture.

For one thing, the system is made strictly local in the syntactic sense (Relativised Minimality): two constituents can contract a lateral relation only if there is no other constituent of the same kind intervening (locality in phonology). A consequence thereof is the "dephonetisation" of phonology or, in positive terms, the phonologisation of phonology: being a good governor or a good licensor does not depend on any phonetic condition anymore ("only phonetically expressed Nuclei can govern"). Rather, phonology alone decides: all and only those Nuclei which are ungoverned possess lateral actorship.

It is also attempted to draw a red line between the area that is properly and exclusively phonological, and other domains such as phonetics and morphology, or eventual blends thereof with phonology (phonology in phonology). In a nutshell, everything that is located above the skeleton (and only this) belongs to the "immaculate" phonology and qualifies for Universal Grammar. The concept of UG must include natural language that uses non-vocal interfaces, i.e. sign language. Hence, "phon" in phonology is a misunderstanding. "Phon"ology is the study of how neuronal linguistic structure is translated back and forth to the extra-neuronal world. The particular interface used is a secondary parameter that must not condition any property of the universal human capacity to translate neuronal into extra-neuronal structure (and *vice versa*). In this context, a number of recent neo-behaviourist raids on phonology are

examined, and it is shown why phonology, rather than syntax or semantics, is singled out for behaviourist attack.

Finally, the incidence of CVCV on the representation of morpho-syntactic and semantic information in phonology is examined (morphology in phonology). After a look at how higher level information has been implemented into phonology since American Structuralism, I argue for an interface which is privative, representational and translational: morphological, syntactic and semantic information must be *translated* into the phonological language since phonology is only able to interpret truly phonological objects. Privativity holds that only phonologically relevant information is shipped off to phonology: higher levels do not communicate with the phonological module at all in case it has been decided that a given higher level division will have no phonological effect. Whether some morpho-syntactic property is phonologically relevant or not is a sovereign decision made by the higher modules; in the minimalist perspective, Chomsky's (2000,2001a,b) *phase* theory manages the mailing of postcards to the semantic and phonological interfaces.

Assuming privativity, thus, morpho-syntactic information is either shipped off to phonology or not; unlike in SPE, phonology is necessarily underfed with higher level divisions. Also, there are no negative messages: a non-intervention of higher levels simply makes phonology follow its regular domestic rule. For example, specific domains across which phonological units do not "see" each other are only created upon an explicit morpho-syntactic order. In absence thereof, heteromorphemic strings are one phonologically speaking. Higher level information materialises as a modification of the phonological representation. The set of possible modifications reduces to four (see §406): either a CV unit is parachuted, or the properties of final empty Nuclei are modified. In the latter case, final empty Nuclei can either be authorised to remain empty (which on autochtone phonological grounds they would not; they are then governed). In addition, they may be granted lateral actorship to which they do not have access according to domestic phonological rule (they then can govern and/ or license).

Finally, the only portion of the representation that is accessible for morpho-syntactic modification is immediately adjacent to the morphological boundary at hand (hence spanning from the last Nucleus of the preceding morpheme to the first Onset of the following morpheme). Higher levels have no power over the morpheme-internal area, nor can they access the melody below the skeleton.

The general architecture of the grammar that this approach requires is parallel, rather than continuous: phonology is not simply the terminal structure of a big tree that begins with syntax and "hands down" information to phonology (via morphology). Rather, the different modules of grammar have a parallel organisation. According to work by Ray Jackendoff (1992,1997,2002) and Michal Starke, syntax, semantics and morphology on one hand and phonology on the other constitute two (or even three) separate worlds whose communication is not top-down. The different modules can talk to each other only via a lexical access (correspondence rules in Jackendoff's vocabulary): they send and receive postcards. This is required because phonology and the other modules do not speak the same language: while syntax, morphology and semantics all know what "plural", "case" or "gender" is, phonology is unable to interpret these concepts. By contrast, things like "labial" or "Coda" make no sense to higher level modules.

This supposes that higher level information is translated from the language that is common to morphology, syntax and semantics into the phonological idiom. Such a translational process can only be achieved by a lexical access in the sense that higher levels send a signal to some dictionary, whose entry is associated with a specific phonological property on the other end. As mentioned earlier, I argue that the outlet of this translator's office on the phonological side is made of exactly four slots (further discussion is provided in §402, which actually anticipates on Volume 2).

CVCV interprets syllable-based generalisations as the consequence of lateral relations that hold among segments. The resulting structure is entirely flat: there is no syllabic arborescence left at all. In a parallel perspective, nothing withstands a flat structure in phonology since different worlds may implement different architectures: the existence of a tree-building device in syntax, semantics and morphology does not imply its replication in phonology. If arboreal structure is indeed absent from phonology, as suggested by CVCV, a long-noticed contrast between phonology and syntax falls out automatically: there is no recursion in phonology because recursion supposes arborescence (a structure is recursive iff a given node dominates a node of the same type). The foreword §2 offers further discussion of this issue.

The preceding paragraphs describe the volume to come. The first volume is now in the hands of the public. When this editorial note was written (August 2004), the second volume was almost completed in draft.

The constant reference that is made to it here should therefore reflect its divisions quite closely.

Foreword

This book presents a development of Jean Lowenstamm's idea that phonological constituent structure can be reduced to a strict sequence of non-branching Onsets and non-branching Nuclei. This approach is known as "CVCV", and emerged from Government Phonology.

The book is divided into two parts, which expose what CVCV is (Part One), and why it is worth considering this idea a valuable and viable approach to phonology (Part Two).

The primary goal is not to locate Government Phonology in general and CVCV in particular within the contemporary or foregoing phonological scene. Before general comparisons in the popperian sense can be made, the properties of each competitor need to be known. Therefore, the present book aims at establishing a player in the game: it exposes the characteristics of CVCV as explicitly as possible.

In the current OT-dominated phonological scene, then, CVCV appears as a true theory of the 80s insofar as it is representational at core: representations contribute a sovereign and unoutrankable arbitral award that is not subjected to any further computation. Structure and process are related but independent; a theory that dispenses with the autonomy of one of these poles of the natural world must fail. In other words, there *is* something like ill-formedness (and not just more or less well-formedness). Grammar may assess an arbitral award regarding the grammaticality of a form in complete absence of any competition with other forms. Representations exist. They are primitive, autonomous and contribute a sovereign arbitral award that owes nothing to the computational component of the grammar. Therefore, they are not the result of any competition (such as constraint interaction). Representations do not emerge; they *are* (see §309).

The genuine research programme of Government Phonology is to build "a syntax of phonological expressions" (first page of Kaye et al. 1990).

> "What is at stake here goes well beyond a mere search for interesting or suggestive similarities. Rather, if (some of) the same principles can be shown to underlie phonological as well as syntactic organisation, the idea that such principles truly express special, idiosyncratic properties of the mind (such as the kind of asymmetries typical of natural language) will be correspondingly strengthened." Kaye et al. (1990:194)

This programme was implemented by *lateralising structure and causality*. That is, syllable-related processes do not root in contrasting arboreal structure. Rather, they are due to lateral forces that hold among constituents. The present book further develops this line of thought: it shows that Standard Government Phonology ran out of breath half way when pursuing the lateral idea. As a result, a permanent in-between was installed: some arboreal structure and causality was lateralised, but other chunks of the traditional syllabic tree were left in place (see chapter I,8 §165). Therefore, Standard Government Phonology is a hybrid animal. Quite some problems, many of them long-noticed (such as its inability to handle word-final consonants that behave like Codas, see chapter II,12 §524), originate in this hybridity.

For example, an important consequence of the arboreal-lateral hybridity is the redundancy of arboreal structure, something that was made crystal-clear in a largely underquoted article by Takahashi (1993) called "A farewell to constituency" (see also Takahashi 2004:141ss). If co-occurrence restrictions are expressed in lateral terms (e.g. a branching Onset: the obstruent governs the sonorant), rather than in regular arboreal fashion (the obstruent and the sonorant are sisters of the same node), the former should take over the function of the latter. This, however, is not the picture that Standard Government Phonology draws: lateral relations *cohabitate* with the old arboreal structure. The latter is thus redundant. It is obvious that no theory can afford encoding the same information twice, on top of that by two devices that ought to concurrence each other. Takahashi (1993) demonstrates the redundancy of arboreal structure by simply showing what would happen if it were not there: nothing. Since it can be entirely deduced from lateral relations, Standard Government Phonology would have exactly the same face without any mention of arboreal constituency (see §209s).

If one were to choose, then, between the classical arboreal expression of syllable structure and the lateral alternative, it appears that the latter is certainly to be considered the null hypothesis. For, unlike in syntax, co-occurrence restrictions in phonology are defined by the *relative* sonority of adjacent consonants (segments). Hence by a lateral, not an arboreal, relation between neighbours. Arborescence only enters the picture when the

analyst translates this primary lateral reality into a secondary kind of structure. I argue that of course there is no counter-indication to do so. However, the null hypothesis ought to be lateral. The burden of proof should lie on the side of secondary approaches such as the one embodied by arboreal syllable structure (§211 details this line of reasoning).

Therefore, there is good reason to complete the missing steps on the way towards a complete lateralisation of structure and causality. This is what CVCV sets out to do: it takes the lateral idea of Kaye et al. (1990) to its logical end. In the light of the preceding discussion, it appears that this is actually a condition on the survival of the lateral enterprise: hybrid models are doomed to failure. Completing the lateral programme, then, produces a result that is entirely flat: no arboreal syllable structure is left at all. Its functional load has been shifted onto lateral relations.

Lateral relations are thus the central tool of CVCV: they define both syllable structure and cause phonological processes. When compared to Standard Government Phonology, their number has been shrunk quite radically (see §§136,147). On the other hand, they have been endowed with a clear functional identity. The architect of this evolution is the Coda Mirror (Ségéral & Scheer 2001a): Government and Licensing alone define syllable structure and a good deal of phonological computation.[1] Also, they have a stable effect on both consonants and vowels: *Government inhibits, Licensing backs up the melodic expression of the target*. It this sense, CVCV may well be interpreted as a minimalist enterprise in the Chomskyan sense: too many devices that have been added over the years without any clear definition of their function in the overall structure are cut down to a minimal number: two.

A programme that aims at unifying phonology and syntax and at the same time comes up with a flat structure may strike as self-contradictory. Quite obviously, no syntactician is prepared to buy anything that is flat: hierarchically ordered structure seems to be a genuine property of language. Therefore, I try to show two things in this book. First, a flat structure associated with lateral relations is not just a notational variant of the familiar arborescence. It is different in a way that produces theoretical and empirical advantages.

Second, nobody has ever claimed that syntax and phonology are *identical*. Obviously, unifying phonology and syntax supposes that one is aware of what is similar and what is not in the first place. Nobody has ever

[1] See §149 and Vol.2,I.8 on the peculiar status of Infrasegmental Government.

suggested that every single bit of one area is replicated on the other side. Rather, the research programme at hand seeks to identify cases where phonological structure and processes, eventually against intuition and the surface mirage, have syntactic peers and hence could be unified with them. This implies the existence of areas where phonology and syntax are different in kind. One such case, co-occurrence restrictions, is discussed in §211. Kaye et al. (1990) also express a balanced view on similarities and differences between syntactic and phonological structure:

> "Allowing for fundamental distinctions between the objects under study in sentence syntax and in phonology, such as the recursive nature of syntactic, but not phonological categories, it is conceivable that some of the same principles at work in syntax will be seen to be operative in phonology, and *vice versa*." (emphasis in original) Kaye et al. (1990:193)

When comparing both areas of grammar, then, the most prominent difference that springs to one's eye is certainly the one mentioned by Kaye et al. (1990): there is no recursion in phonology. It is interesting to note that this hard fact, which is a long-standing observation, actually follows from flat structure: if, as I argue, phonology lacks a tree-building device (i.e. Merge in the minimalist vocabulary), there could not be any recursion. For recursion is defined as a node that dominates a node of the same type.

A phonological landscape along these lines is also consistent with the general picture that is drawn by Chomsky et al. (2002), who make a difference between the faculty of language in the broad (FLB) and in the narrow sense (FLN). The latter is the abstract linguistic computational system; it "comprises only the core computational mechanisms of recursion as they appear in narrow syntax and the mappings to the interfaces" (p.1573). More technically speaking, thus, FLN is made of Merge and Phase. FLB, on the other hand, includes FLN and the two interfaces themselves: the phonological and the semantic module (which the authors call "sensory-motor" and "conceptual-intentional" systems, respectively). Chomsky et al. (2002) argue that FLB is shared with animals, while FLN is uniquely and specifically human. Or rather, to be precise, their only claim is of diachronic nature: the present-day human FLB may have evolved through a series of gradual modifications on the basis of animal pre-homo FLB. The FLN may not. It is a device which specifically and uniquely characterises human communication, and therefore has no biological basis in any non-human ancestor. It must have emerged during the times when

the homo species was alone in its evolutionary branch, i.e. in the past six million years or so. FLN is a human invention, FLB is not.[2]

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[2] Chomsky et al. (2002) is often condensed into "the only thing that UG contains is recursion (i.e. Merge)", suggesting that no phonological property could be part of UG and, worse, that there is nothing to be shared by syntax and phonology. This would then be the precise expression of neo-behaviourist stances such as Carr's (2000): phonology lies outside of UG. It is important to understand that this interpretation is incorrect. Chomsky et al. (2002) are explicitly agnostic with respect to this issue: "Liberman and his associates [...] have argued that the sensory-motor systems were specifically adapted for language, and hence should be considered part of FLN. There is also a long tradition holding that the conceptual-intentional systems are an intrinsic part of language in a narrow sense. In this article, we leave these questions open, restricting attention to FLN as just defined but leaving the possibility of a more inclusive definition open to further empirical research" (p.1571). On another occasion, they even include FLB into those properties that make human communication specifically human: "we take as uncontroversial the existence of some biological capacity of humans that allows us (and not, for example, chimpanzees) to readily master any human language without explicit instruction. FLB includes this capacity, but excludes other organism-internal systems that are necessary but not sufficient for language (e.g., memory, respiration, digestion, circulation, etc)" (p.1571). On page 1573, however, they say that the strongest form of their hypothesis holds that "all peripheral components of FLB are shared with other animals, in more or less the same form as they exist in humans, with differences of quantity rather than kind".
This is all consistent with the diachronic focus which, recall from the main text, is the only purpose of their article: it may well be true that FLN is the only part of human language that has been "invented" by humans alone; that FLB is some kind of evolved version of the old animal FLB. The synchronic characteristics of UG as implemented in the human genome, however, do not care for how they have come into being: they may well possess properties that have been invented by the homo family and others that have an animal ancestor - both sets may be genetically encoded and conjointly produce the effect that mankind speaks, while animals do not.
In other words, the old animal FLB that humans have inherited may have evolved in such a way that its present version is quite different from the shared animal-human ancestor. Different enough to include specifically linguistic features to which animals, through their unevolved FLB, do not have access. The present-day human genome, then, contains a set of specifically linguistic properties of two different evolutionary origins: some are based on the common animal ancestor, others are "human inventions". In any event, at least some features of FLB are part of the present-day UG, hence of the human genome.

Hence, the critical difference that Chomsky et al. (2002) establish between syntax on one hand and phonology/ semantics on the other precisely concerns recursion: following their logic, any adequate phonological theory must be unable to produce recursive structure. One way to do that - a radical way - is actuated by CVCV: there is no recursion in phonology because there is no tree-building mechanism in this module. If the minimalist philosophy regarding Merge is taken seriously, this is actually a necessary consequence: since Merge is responsible for tree-building, hence for recursion, eliminating the latter means to eliminate the former. Or, in other words, there could be no non-recursive tree structure on minimalist assumptions. Either Merge is active and results in both arboreal structure and recursion, or it is not, and none is produced. CVCV arrives at this result "from the other end", and for entirely independent reasons that root in the original research programme of Government Phonology, i.e. the lateralisation of structure and causality.

This is to say that the flat result of CVCV is at the same time the consequence of the programme that attempts at unifying syntax and phonology, and the grounds on which the most fundamental difference between both modules may be understood.

It goes without saying that Government Phonology is by no means the only or the first theory that attempts at accounting for phonological and syntactic phenomena with the same set of principles. Dependency Phonology, a sister theory not only in this respect, has a genuine tradition and an longer experience in this area. John Anderson (1985,1986,1987,1992, Anderson & Ewen 1987:283ss among others) has always promoted what he calls *structural analogy*: in the formulation of Hulst (2000:209), "grammar recapitulates, rather than proliferates, structures and principles". Further work that brings together syntax and phonology includes Riemsdijk (1982), Sauzet (1996,1999) and Michaels (1991,1992).

Before moving on, a disclaimer is in order: this book sets out only to flatten syllable structure. Other types of supra-skeletal units that are known from Prosodic Phonology since Selkirk (1984a) and Nespor & Vogel (1986) such as feet, prosodic or phonological words, phonological phrases and the like are not its primary focus. Only chapter II,11 (§501) argues that nothing else than flat CVCV is needed in order to implement the parameter known

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The issue of whether there is some phonology in UG will be addressed at length in Vol.2,II where neo-behaviourist raids on phonology are discussed.

as Weight by Position, and to explain why Onsets are weightless. Whether higher areas of phonology need to be represented by arboreal structure or not is a question open to further debate. My intuition is that they do not. In any event, this question is discussed at length in Vol.2,III where the relation between phonology and other modules of the grammar is addressed.

Let us now turn to some features regarding the internal organisation of the book (see also §3). For the sake of better legibility, a stenographic overview of the melodic and syllabic properties of Standard Government Phonology is provided in appendix 4 (§623) (and also in a nutshell at the outset of Part One in §§10s,15). These pages are designed to serve as a shortcut to relevant information for the reader who is less familiar with certain aspects of the theory as it stood in 1990. Moreover, the relation of CVCV with Standard Government Phonology is established in some detail in chapters I,7 (§135) and I,8 (§165). The reader who is accustomed with earlier versions of Government Phonology will be put in a position to judge the differences. People coming from other horizons can gain an impression of the genuine properties of Standard Government Phonology, of its tools (Government and Licensing) as well as of their evolution. In any event, historical information is not central in scope and does not represent a condition on the understanding of the book. Therefore, its core is not located at the outset of the text. While chapters I,7 (§135) and I,8 (§165) concentrate relevant discussion, they do not exhaust the matter. Rather, reference to earlier versions of Government Phonology is made throughout the entire book whenever this suits the demonstration.

It was mentioned earlier that the same holds true for the position of CVCV with respect to other phonological theories. This not withstanding, Part Two is the natural location for some comparative discussion since it is designed to explain why CVCV is worth to be considered a serious competitor in the field. Arguments are drawn from the comparison of solutions for particular phenomena that are proposed by CVCV and other approaches. These range from traditional Kahnian syllabification algorithms over Lexical Phonology and Standard Government Phonology to Optimality Theory. I have tried to focus the discussion on theory-neutral tools that were developed by phonologists over the past 30 years and have become common theoretical background. These include concepts such as branching Onsets, Coda-Onset sequences, disjunctive contexts, bogus clusters, sonority, extrasyllabicity, syllabification algorithms, resyllabification, morae, autosegmental representations and the issues related to the debate on abstractness vs. concreteness.

It is also worth mentioning that the representational orientation of Government Phonology in general and of CVCV in particular leads to the development of precise identities for basic phonological objects and processes. These include Codas, closed syllables, long vowels, geminates, syllabic and trapped consonants, the beginning and the end of the word, vowel-zero alternations, Closed Syllable Shortening, Tonic Lengthening, compensatory lengthening, lenition and the like. Throughout the book, each issue is examined with particular attention to diachronic evidence in its relation to the synchronic state of affaires. Needless to say, as well: the phenomena and languages discussed represent but an arbitrary choice that reflects my personal interests and the empirical field that I am best familiar with. As far as languages are concerned, this translates as a focus on (Western) Slavic, French, German and some Semitic.

Finally, attention needs to be drawn on the fact that the view expressed in this book represents only one possible implementation of Jean Lowenstamm's idea. Other interpretations of CVCV that may or may not be compatible with the present approach in whole or in part include the following. Szigetvári (1999a,2001) (also Dienes & Szigetvári 1999) advocates strings that obey strict CVCV, but begin with a Nucleus and end in an Onset (VC skeletons). Rennison (1999b) and Rennison & Neubarth (2003) develop an x-bar theory that roots in CVCV, and Brandão de Carvalho (2002a) operates with a "double CVCV helix". Cyran (2001,2003) abandons Proper Government or any other lateral device for the description of vowel-zero alternations. Finally, Rowicka (1999a,b,2001) holds that lateral relations are head-initial rather than head-final, while Polgárdi (1998,1999,2002,2003) rejects final empty Nuclei ("loose CV"). Also, the latter two implementations of CVCV share the view that Government Phonology and Optimality Theory are not incompatible. This is certainly true since OT, in its own understanding, is a metatheory that can work with any input (linguistic or not: "theory X with an OT-top"). Encouraged by the possible marriage of both theories, the two approaches mentioned operate with various OT-type constraints that apply to Government Phonology representations.

While writing this book, I was lucky enough to be able to spend some time in Warsaw (repeatedly, thanks to Jerzy Rubach), Leipzig (also repeatedly, thanks to Gerhild Zybatow), Lublin (thanks to Gienek Cyran) and Brno (thanks to Petr Karlík). These stimulating environments have

greatly contributed to the venture, and actually quite some text was produced there.

Another important source of inspiration have been the EGG Summer Schools (Central European Summer School in Generative Grammar, coolschool.auf.net), particularly the editions in Plovdiv/ Bulgaria (1999), Niš/ Serbia (2001), Novi Sad/ Serbia (2002), Lublin/ Poland (2003) and Cluj/ Romania (2004). Various parts of the book have been "tried out" in classes that I have taught at EGG, and other people's classes as well as further discussion at the school have greatly contributed to the result that now appears in print.

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Le Boulou, August 2004

3 How to use this book

This book is not a textbook. It does not aim at being pedagogical: there is no linear progression (in the sense that you have to have read through chapter n-1 in order to understand chapter n), issues are not presented by a "neutral" or "impartial" observer who does not personally support either of the views discussed, and of course there are neither exercises nor learn-by-heart summaries. On the contrary, this book is written from a partial point of view: the one of Government Phonology in general and of CVCV in particular. The goal is to demonstrate that CVCV is worthwhile; all the rest follows from this premise.

The book is thematically organised. Most probably, it will therefore be best used like a dictionary: you want to know what CVCV says about X, so you look it up. Provisions have been made to facilitate this look-up function. A fairly detailed subject index (§633) is available at the end of the book, and a language index (§634) refers to the languages mentioned and offers a list, language by language, of all individual alternations discussed. Two appendices also enhance the look-up function: appendix 1 (§620) lists and references all parameters that have been discussed, and a short guide to 1990 Government Phonology is offered in appendix 4 (§623) (cf. the foreword §2).

All sections and sub-sections are identified by a running number in the page margin, the paragraphs § (see the general conventions §5 for details). All cross-reference in this book (from the main text, from footnotes, from indexes) targets this running number. Within §s, the reference system may point towards relevant thematic units. These are identified by alphabetic characters after the § number. For example, §476c refers to the third paragraph of §476. When following a cross-reference, thus, the reader does not need to go back to the table of contents in order to identify the page number and finally look up the page: he can jump directly to the running number.

Each chapter has a thematic unity and may thus be accessed independently. This, I admit, is less true for the very beginning of the book, i.e. chapters I,2 (§14) to I,6 (§110), where the bare skeleton of CVCV is exposed. Once this system is understood, however, the order in which the remaining chapters are approached does not matter a lot.

Given this dictionary-like organisation, I do not really expect anybody to read through the entire book from the first to the last page.

Also, the rather scary size that the text has grown into should not be dissuasive for that reason. Finally, the relative thematic independence of the chapters supposes a particular effort for making information from other chapters available. As was mentioned before, I have tried to meet this challenge by using constant cross-reference and offering fairly detailed (and thematically organised) indexes and appendices. Another means of prompting relevant information are short thematic summaries. These appear whenever I found that they may enhance the reader's task, at the risk of some repetition and redundancy here and there.

To round off this practical description, it is useful to be aware of the following fact: the book which you hold in hands has changed quite a bit with respect to the various drafts that have circulated over the past two years. The comments that I was lucky enough to receive, as well as a thorough final revision of the text have eliminated a number of errors (though I apprehend in advance all those that have managed to seep through) and prompted minor, but also some major changes in all areas: organisation, presentation, style and content.