

# The Generative and the Structuralist Approach to the Syllable



# The Generative and the Structuralist Approach to the Syllable:

*A comparative analysis  
of English and Slovak*

By

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## LIST OF ABBREVIATIONS

V	vowel
C	consonant
X	vowel or consonant
FG	Feature Geometry
Supra node	<b>Supralaryngeal node</b>
Soft Pal	<b>Soft Palate</b> node
s	standard deviation
x	arithmetic mean, average
C <sub>v</sub>	variation coefficient
msec	millisecond
Σ	sum of
~V	nasalised vowel
N	nasal consonant
C <sup>s</sup>	complex segment, complex sound
v	unstressed vowel
LP	<b>Lexical Phonology</b>
SSG	<b>Sonority Sequencing Generalization</b>
SSA	<b>Syllable Structure Algorithm</b>
N	nucleus
N'	rhyme node
N"	syllable node
σ	syllable node
MSD	<b>Minimal Sonority Distance</b>
OSP	<b>Obstruent Sequencing Principle</b>
O	obstruent
L	liquid
ES	<b>Exhaustive Syllabification</b>
SPE	<b>Sound Pattern of English</b>
SPT	<b>Synthetic Phonological Theory</b>
HPh	hypophone
Ph	phone
Phm	phoneme
MPhm	morphophoneme
HMPPhm	hypermorphophoneme
I	the <b>individual</b>
U	the <b>universal</b>

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# INTRODUCTION

In the first half of the 20th century, structuralism flourished in European linguistics. Linguistic structuralism<sup>1</sup> as introduced by Ferdinand de Saussure (1922) manifested itself in the theories of several schools that differed from each other in their theoretical orientation. The most important schools of European structuralism are the Prague School of Linguistics, the Geneva School, the Copenhagen School, the Moscow School, and the London School (see, e.g., Albrecht 2011 for a detailed description of the individual schools). Considering the sound level of language, the Prague School of Linguistics with its functional approach to language analysis is the most inspiring one (cf., e.g., Sampson 1980; Sabol 1989; Goldsmith 2011). The contribution of the Prague Linguistic Circle to the field of phonology is immense and indisputable (see, e.g., Černý 1996). The phonologists of the Prague School differentiated between phonetics and phonology and distinguished between sounds and phonemes. They believed the functions of the individual sounds played an important role, and emphasized the distinctive function of phonemes. Trubetzkoy's theory of phonological oppositions is still valid without substantial changes (*ibid.*, 155), and so are his concepts of neutralization and archiphoneme. Thus, for simplification and clarity, I have labelled the phonology of the Prague School of Linguistics (i.e., phonology developed within the framework of European structuralism) as “structuralist phonology” in this work.<sup>2</sup>

In the 1960s, Noam Chomsky presented his theory of generative grammar, which became the basis for the phonological theory known as *generative phonology* (Sampson 1986, 188). Generative phonology<sup>3</sup> itself was the result of the work of Noam Chomsky and Morris Halle

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<sup>1</sup> Unless the attribute ‘European’ is used, the label ‘structuralism’ still refers to ‘European structuralism’ in this work. The survey of the fundamental tenets of European structuralism and the comparison of this linguistic stream to the so-called American structuralism can be found, for example, in Sampson (1980) or Albrecht (2011).

<sup>2</sup> Detailing a depiction of structuralist phonology developed by the linguists in the main linguistic schools or, at least, co-operating with them, is not the aim of this work. That is why I think that this type of simplification is possible.

<sup>3</sup> The core values and beliefs of generative phonology can be found, for example, in Sampson (1980) or in Goldsmith and Laks (2011).

(Goldsmith and Laks 2011, 6). “Proponents of generative grammar [...] believed that generative grammar was the first truly scientific account of language” (*ibid.*, 7).

Taking into account various extraneous conditions that play a role in the spreading of new ideas (for details, see Everaert and Reuland 2011), the generative approach to language received immediate attention in the USA and in the countries of Western Europe, while structuralism, including structuralist phonology, has remained popular in the territory of, geographically speaking, Central and Eastern Europe. The generative ideas were only marginal there (*ibid.*).

One of the crucial notions in both structuralist and generative phonological theory is the notion of the syllable. (However, early generativism ignored the syllable as the unit of analysis, see Chapter 1.) The syllable as the basic sound unit of continuous speech encompasses all components of the speech signal: articulatory, acoustic, and perceptual (Sabol 1994, 217). It is a complex-sound unit connecting segmental and suprasegmental subsystems of a language (Sabol 1997, 27). Moreover, the syllable is the fundamental unit in phonological analysis (Blevins 1995, 206). For example, Pauliny (1979) sees the syllable as the smallest unit necessary for the identification of phonemes. And the syllable is used for the analysis of the phonological constraints of a given language. The syllable is thus also the central unit of phonotactic analysis. All in all, structuralist and generative linguistics agree the syllable is an important phonological constituent of a language.

Much has been done in connection with the syllable in generative linguistics (see, e.g., Blevins 1997; Cairns and Raimy 2011; Goldsmith 2011) and in structuralist phonology (see, e.g., Sabol 1994). However, little has been done to compare or contrast structuralist and generative approaches to analysing syllable structure and function. There are two significant books on the subject. Brief notes about the understanding of the syllable in structuralism and in generative linguistics can be found in Cairns and Raimy’s (2011, 1–18) introduction to *Handbook of the Syllable*. The chapter, however, is descriptive rather than explanatory or comparative. A condensed classification of various approaches to the syllable, encompassing its position in structuralism and generativism, appears in Goldsmith’s (2011) chapter on the syllable in *The Handbook of Phonological Theory*. Otherwise, those whose attention is focused on generativism either ignore structuralist ideas or evaluate structuralism as an improper linguistic theory (Emonds, personal discussion; see also

Turner 1987).<sup>4</sup>

I have been researching the syllable from the very beginning of my linguistic work (Gregová 1998; Gregová 2004). Studying linguistics in Central Europe gave me a structuralist linguistic education, and I became acquainted with the generative understanding of language through working with English linguistics. As I gradually specialized my research interest, examining comparative phonetics, phonology, and morphophonology, I saw many situations in which structuralism and generativism seemed to clash.

Thus, the aim of this work is to compare and contrast the structuralist and the generative approaches to the syllable, which, as specified above, is the basic unit of phonological analysis. Since both linguistic streams manifest themselves in a number of schools and theories, a simplification is necessary, and only the most significant and typical representatives of each approach are evaluated here.

Prior to the specification of the generative theories chosen for the analysis, the basic aspects of the syllable in generative phonology as a whole are presented in chapter 1. Generative phonology originated as an enlargement of Roman Jakobson's work on phonological universals (Sampson 1980, 188), an underlying phonological system common for all languages. The essence of Chomsky's theory—as explained in detail in chapter 1—is the belief about linguistic universals in syntax (*ibid.*, 131). This idea was further developed in the theory of universal grammar that achieved incredible popularity among both linguists and non-linguists. Generativists and generative phonologists concerned with language universals usually characterize their theories as valid across languages (see, e.g., Chapter 2). Therefore, the secondary aim of this work is to evaluate the alleged universal nature of the generative theories presented here.

Due to the reasons explained at the end of chapter 1, the generative approach to the syllable is exemplified by two theories, the CVX theory of syllable (Chapter 2) and Lexical Phonology (Chapter 3). The outcomes of the analyses of the syllable from the point of view of these two generative theories are summarized in chapter 4, where also a re-evaluation of the tenets of the generative approach to the syllable introduced in chapter 1 is made. Chapter 5 encompasses the most important issues of the syllable in structuralism represented by one theory, the synthetic phonological theory, which is introduced in chapter 6. Chapter 7 offers the comparison of the

<sup>4</sup> The proponents of the structuralist approach to language seem to be less radical in advocating their linguistic beliefs and ideas. They simply disregard generativism and do not comment on it.

generative and the structuralist approaches to the syllable typical of CVX syllable theory, Lexical Phonology, and the synthetic phonological theory. The outcome of the work can be found in the Conclusions.

All three syllable theories introduced in this book are thoroughly examined using data from two languages – English and Slovak – which differ from the viewpoint of morphological typology. English is an analytic language belonging to the West Germanic branch of the Indo-European language family, and Slovak is a synthetic language from the West Slavic branch of the same family (for details, see, e.g., Brown and Ogilvie 2009).<sup>5</sup> One can object that the comparative analysis of two languages is not sufficient when evaluating the universality of a certain theory or at least the tendency towards universality. In other words, the limited extent of the research material may give the impression that the results of the comparative and contrastive analyses presented in the Conclusions are nothing more than mere speculation.

The studies of the syllable usually adopt one of two approaches: either a rather superficial survey of a large number of languages or an exhaustive analysis of a small number of languages (Duanmu 2009, 3). In order to be consistent with the authors whose theories are included in this work, I have chosen the latter approach. The CVX syllable theory is applied to five languages (Duanmu 2009); the initial ideas of the Syllable Structure Algorithm in Lexical Phonology were presented in the analysis of one language only (Mohanan 1982), and the basic aspects of the synthetic phonological theory were also exhibited on only one language (Sabol 1989).

The ordering of the theories is based on the principle of a reverse chronology – the CVX theory was launched in 2009. Although the description of the syllable from the point of view of Lexical Phonology was introduced in 1982 (see above), the detailed algorithm of the syllable structure used in this work was created by Rubach (1993). The synthetic phonological theory originated in 1989. The reverse chronological order simultaneously follows the principle of the inner logical connection between these theories: the CVX theory is the peak of the generative understanding about language, Lexical Phonology is the gate between pre-generative structuralist phonology and classical generative phonology (Goldsmith and Laks 2011, 14), and synthetic phonological theory can be characterized as the summary of the structuralist approach to language.

All analyses and evaluations included under the roof of the individual syllable theories are supported by the comprehensive data that can be

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<sup>5</sup> Despite an obvious genetic kinship, the languages have different vocabulary, syntax, and, of course, phonology.

found in the Appendices (Appendix 1–8). All English and Slovak consonant clusters<sup>6</sup> and the results of their various examinations are included in this work to avoid objections that the author presents only those data that follow the given theory and ignores those that probably do not. For example, Scheer (2012) argues that the CVX theory of syllable “is not tested on the grounds of language data” (*ibid.*, 719). Some consonant clusters are encompassed in the analysis and others are simply left unmentioned. A similar objection is made to Sagey’s evaluation of consonant clusters as complex segments (see Chapter 2).

In brief, this work – as indicated by its title – presents comparative and contrastive analyses of the generative and structuralist approaches to the syllable on the basis of a detailed investigation of data from English and Slovak according to three syllable theories. The theories are described and their principles and rules are applied to the data. The results of the thorough analysis are assessed and compared. The conclusions may only be indicated since the work, of course, does not aspire to solve the clash between structuralism and generativism. Finding the truth is outside the scope of the study. The goal of this book is to point out the differences and find possible similarities between different methods of analysing the syllable and the issues associated with it.

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<sup>6</sup> Or rather, most consonant clusters from both languages are included in all detailed investigations. Taking into account the fact that language is a vivid system, only the most productive clusters from both languages were analysed (see also note 15 in Chapter 2).



# CHAPTER ONE

## THE SYLLABLE IN GENERATIVE PHONOLOGY

In Chomsky and Halle's (1968) *Sound Pattern of English* (henceforth, *SPE*), the assumption was that the individual speech segments, boundaries, and rules governing possible combinations of these segments in morphemes and words were satisfactory for the description of the sound systems of languages (Katamba 1989, 164). Thus, although “the syllable is one of the oldest constructs in the study of language, and most studies of phonology have found a place for the syllable within them” (Goldsmith 2011, 214), the syllable is not referred to as a formal phonological unit in early generative phonology. Prosodic structure is governed by the principles of universal grammar (see, e.g., Goldsmith and Laks 2011) and the existence of the syllable can only be deduced from the rules that seem to take this unit as the domain of their application (Sampson 1980, 193).

Goldsmith, in Goldsmith and Laks (2011), gives two of the most important principles of generative linguistics reflected in the syllable theories appearing in the decades after *SPE*: (1) the main goal of a linguistic theory is the development of a formal theory, and (2) attention should be paid to the algorithmic explanation of the generation of surface forms on the basis of underlying forms (*ibid.*, 9–10, see also, below). In brief, formalism and algorithmic explanations are the fundamental notions in generative linguistics, that is, also in generative phonology. This “abstract formalist logic” (*ibid.*) of classical generative phonology as presented in the *SPE* was questioned by the representatives of natural phonology (or natural generative phonology) in the 1970s (for details, see, e.g., Donegan and Stampe 2009). However, although criticising *SPE* as a kind of artificial phonology, natural phonology continued its surface-oriented analysis, based on phonological derivations and ordered rules. One of the significant differences between the *SPE* and natural phonology is that the *SPE* dismisses the syllable while natural phonology understands the syllable as a unit of phonological analysis (Goldsmith and Laks 2011, 12, 16). It became clear that many phonological processes affect syllable structure rather than the structure of the morpheme or single segments. For example, the concept of the syllable has been used to account for such

prosodic features as stress, tone, and duration (Hooper 1972, 531, 533). Hooper (1976, 525) further demonstrates that “the syllable can be formally and universally defined by a rule, which inserts [...] syllable boundaries between certain sequences of segments”. Consequently, the aim of numerous phonological theories within generative phonology has been to propose a universal definition of the syllable in terms “of conventions for the placement of syllable boundaries” (*ibid.*). The study of the syllable and its structure has become the essential part of phonological theories evolved within the framework of generative phonology (cf., e.g., Goldsmith 2011; Goldsmith and Laks 2011).<sup>1</sup> The most influential were the following: autosegmental phonology<sup>2</sup> and metrical phonology<sup>3</sup> in the 1970s; Lexical Phonology,<sup>4</sup> three-dimensional phonology<sup>5</sup> and CV-phonology<sup>6</sup> in the 1980s; and Optimality Theory<sup>7</sup> in the 1990s (see also note 1).

## 1.1 The Internal Structure of the Syllable

One of the features distinguishing among various syllable theories is whether they postulate flat syllables or an internal syllable hierarchy (Cairns and Raimy 2011, 15). The flat syllable structure (Fig. 1-1) in which there are only syllable segments with the identical direct relationship to the syllable node and no sub-constituents, can be found, for example, in Kahn (1976) or in Clements and Keyser (1983). Nevertheless, following the basic ideas and principles of the generative approach to language (see, e.g., Rocca 2013, and see also, above), the flat, linear representation of the syllable as the unit of phonological analysis is not sufficient, and a non-linear, hierarchical representation is preferred (Fig. 1-2, 1-3). This means that in generative phonology, the syllable is seen as a multitiered unit with an internal hierarchically organized structure. For example, Blevins (1995, 210) provides several pieces of sonority-based, feature-based, and position-based evidence in favour of the hierarchical internal structure of the syllable. The syllable models that have binary

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<sup>1</sup> The detailed account of the history of the syllable before and after the arrival of the generative approach to language as well as the classification and description of various approaches to the syllable can be found, for example, in Goldsmith 2011 or in Cairns and Raimy 2011.

<sup>2</sup> Goldsmith (1976).

<sup>3</sup> Liberman (1975).

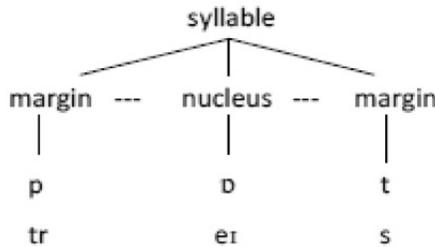
<sup>4</sup> Mohanan (1982).

<sup>5</sup> Halle and Vergnaud (1980).

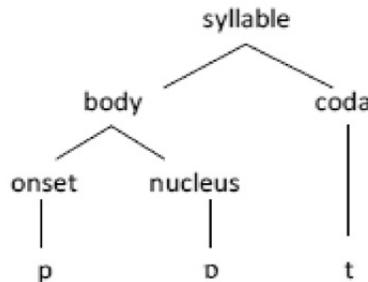
<sup>6</sup> Clements and Keyser (1983).

<sup>7</sup> Prince and Smolensky (1993).

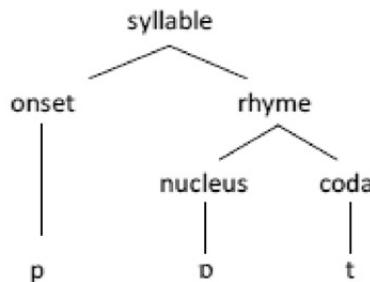
branching either with body (Fig. 1-2) or with rhyme (Fig. 1-3) are the most frequently used (*ibid.*).



**Figure 1-1** The Flat Syllable Structure



**Figure 1-2** The Hierarchical Syllable Structure–binary Branching with Body



**Figure 1-3** The Hierarchical Syllable Structure–binary Branching with Rhyme

In general, the syllable theory is based on two hypotheses: (1) universality, which assumes that there are syllables in all languages, and (2) exhaustiveness, which requires all segments in a word to belong to syllables (Cho and King 2003, 183). Another common feature of the syllable theories within generative phonology is that syllabification is not always exhaustive (*ibid.*; see also Cairns and Raimy 2011, 16) and many consonants are left unsyllabified, that is, they are extrasyllabic.

### 1.1.1 Extrasyllabic Consonants

Syllable theories that accept the existence of unsyllabified consonants (e.g., Clements and Keyser 1983; Rubach 1993; Duanmu 2009) offer various solutions to account for these extra consonants (i.e., extrasyllabic consonants) at syllable edges. One of the easiest solutions is the distinction between the syllable core (or a core syllable) and the appendix, where the Sonority Sequencing Generalization (SSG, see section 3.1) holds only in the core syllable, and the segments violating the SSG are labelled as the appendix.

For example, in English, the maximum number of segments at the onset of a core syllable is two and their sonority increases towards the peak. The sonority of segments at the coda decreases from left to right. Peak and coda form a phonological unit, which is called a *rhyme*. The maximum number of segments in rhymes is three. Any consonants that represent a violation of the pattern described above or to the sonority generalization are referred to as the appendix. The description of the word *strings* /striŋz/ in terms of its syllable structure is, then, as follows: [s]trɪŋ[z], where [trɪŋ] is the core syllable, the segment ‘s’ is the appendix to the onset, and the consonant ‘z’ is the appendix to the rhyme (Giegerich 1992, 146–50).

Extrasyllabic consonants can also become syllabified through vowel epenthesis or may be incorporated into higher prosodic structures when they are extrasyllabic on the surface (Green 2003, 243).

The other way of accounting for the extrasyllabic consonants is to remove them by Stray Erasure, which says if a segment cannot be incorporated into a syllable, it should be deleted (McCarthy and Prince 1995, 330).

Blevins exemplifies the existence of the so-called stray consonant in English with the monosyllabic word *damn*.

In English, stem C/∅ alternations as in *damn/damnation* and *hymn/hymnal* can be accounted for by recognizing that \*mn is an ill-formed coda

sequence in English, and hence, the pre-surface representation of /dæmn/ is /dæm.n/ where C' represents an unsyllabified C, which is deleted by stray erasure, resulting in [dæm]. (Blevins 1995, 218)

The latest approach to the problem of surface violations of the SSG by certain consonants is the idea of complex segments<sup>8</sup> and the notion of semisyllables. It is supposed that “complex segments in several [...] languages obey both the SSP and ES<sup>9</sup> once the notion of semisyllables are incorporated and proper morpheme analyses are given” (Cho and King 2003, 187).

This means that the question of the syllable structure is solved together with the question of the morpheme structure because “morpheme boundaries play a crucial role in the distribution of semisyllables” (*ibid.*, 199).

Therefore, the following section concentrates on the morphological domain of syllabification.

## 1.2 Syllabification and Morphology

There is no doubt that the syllable is a sound unit, and as a “phonological prime” (Jones 1976, 121), it is the field where many phonological processes take place. One cross-linguistic phenomenon occurs when the independent domain of syllabification is formed by each constituent in a compound and by prefixes; or, in other words, “the fact that word-internal compound boundaries and prefix boundaries always form edges of a syllabification domain seems to be a universal tendency” (Rubach and Booij 1990, 45).

Otherwise, syllabification does not have to respect the morphological structure of words (Laeufer 1995, 103). As for the suffixes, vowel-initial suffixes are syllabified with the preceding morpheme but consonant-initial suffixes are not, and they can (but do not have to) form an independent domain of syllabification. A detailed cross-linguistic comparison has proven that in languages with fixed stress (e.g., Czech and French), the word rather than the morpheme is the domain of syllabification. In contrast, in languages where morphology plays a role in stress assignment (e.g., English), the morpheme is the domain of syllabification (*ibid.*, 118).

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<sup>8</sup> The details about the theory of a complex segment can be found in section 2.2.

<sup>9</sup> ES stands for exhaustive syllabification (note made by the author of this work).

### 1.3 The Underlying Representation and the Surface Representation

In traditional generative phonology, a single underlying form is capable of accounting for the phonological variations that relate grammatical structures. For example, in the pair of words *divine–divinity*, there is a single, underlying representation – /divīn/ – that, together with the rules relating this representation to its surface alternants, accounts for the native speaker’s awareness of the relationship between grammar and phonology (Crystal 2008, 475).

The underlying representation or form of a language unit is thus understood as the form stored in the mental lexicon. It is the form used before the application of phonological rules and processes (Matthews 2007, 420). The actual pronunciation is then indicated as the surface form. For the current generative phonology, the underlying form is equal to the phonemic form of a word. For example,

(1)    graphic form *can't* → underlying form //kænt//<sup>10</sup> →  
 surface form [k<sup>h</sup>æ?]

Considering this popular example, the underlying representation can be labelled as the phonemic representation of the given word, and the surface form is identical with its detailed phonetic form or representation. This idea of the difference between the underlying form and the surface form is also supported by Mannell, who mentions

underlying forms are expressed in terms of phonemes and a surface form is the broad, phonemic transcription of how a word or morpheme is actually pronounced in a particular context, [...] phonetic features are surface realizations of underlying phonological features. (Mannell 2008, 3)

A similar interpretation can be found in Odden’s introductory course to phonology. The author differentiates between the spelling of words, their phonetic representation, which is in square brackets, and the underlying forms placed in slanted brackets (Odden 2005, 20). However, several pages later, when refining the notion of underlying forms, the author provides a more precise explanation of what this concept indicates: “The underlying form of a word is whatever comes out of the morphology and is fed into the phonology, before any phonological rules have been

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<sup>10</sup> The underlying form is typically notated either as double slashes surrounding the phonemic form or in capital letters.

applied" (ibid., 72). The underlying form is thus seen as a component standing somewhere between morphology and phonology.

Obviously, as indicated above, despite their importance in phonological theory, the content of these two terms – the underlying representation and the surface representation – has become slightly ambiguous. That is why it is necessary to explain what the underlying representation is in traditional generative phonology. Chomsky and Halle say in the *Sound Pattern of English* (1968) that the underlying lexical as well as phonological representation is abstract when compared with phonetic representation, although both are given in terms of phonetic features (Chomsky and Halle 1991, 8, 11). The symbols used in the underlying representation are understood as informal abbreviations for a certain set of phonological categories, that is, distinctive features (ibid., 12). The underlying representations are abstract and, in general, very close to conventional orthography (ibid., 46, 48). This means that sometimes the underlying representation has the form of the orthographic representation of the given word, for example, /erase/ (ibid., 27), but sometimes not, for example, /sinNg/ (ibid., 85). The cases where the underlying representations are identical with the spelling of the given words have led to misunderstanding the underlying forms as mere orthographic notations. Although,

[...] English orthography in general, reflects the SPE "underlying forms" rather accurately [it] is not because (as Chomsky and Halle believe: SPE, p. 49) our spelling is a near-perfect encoding of the pronunciation of our words as they are stored in our (subconscious) minds, but because the underlying forms correspond phonetically to the distant ancestors of our modern words, and English spelling is highly conservative. (Sampson 1980, 203)

It seems that some generative theories mix up the graphic and the sound forms of a language. Recall now the word *damn* and its representation /dæmn/ used by Blevins (section 1.1.1 above). Is this really the form that the native speakers have in their mental lexicon? It is well known that the sound form (speech) is the primary means of communication. Writing is just a device people invented to preserve their thoughts and ideas, etc. (see, e.g., Lyons 1999, 14). It is well known that in languages, there is rarely a one-to-one correspondence between letters and phonemic (sound) units. The particular realization of the individual segments – vowels and consonants – in their linear sequences (words, phrases, and sentences) is influenced by various pronunciation and phonological rules of the given language (e.g., assimilation), and not all

combinations of graphemes are reflected in speech. Even native language users may have difficulties with the spelling of the words in their own language.<sup>11</sup> The ‘n’ in the word *damn* is only a grapheme that has no realization in the pronunciation. Which form is part of the mental lexicon, /dæmn/ or /dæm/? Which one is the correct underlying form? The literate speaker will probably automatically connect the form /dæm/ with the orthographic form as an underlier. But what about the speaker that is illiterate? Although “it is not possible to provide direct psycholinguistic evidence for the underlying representations” (Giegerich 1999, 165), the nature of the relationship between the grapheme (orthography) and the sound form (pronunciation) of the word is one that promotes the latter. The spelling-pronunciation analysis has shown “that orthographic information in many cases facilitates speakers’ access to items stored in the mental lexicon” (ibid., 166). However, a number of research studies provide contrary results (Gibson et al. 1962).

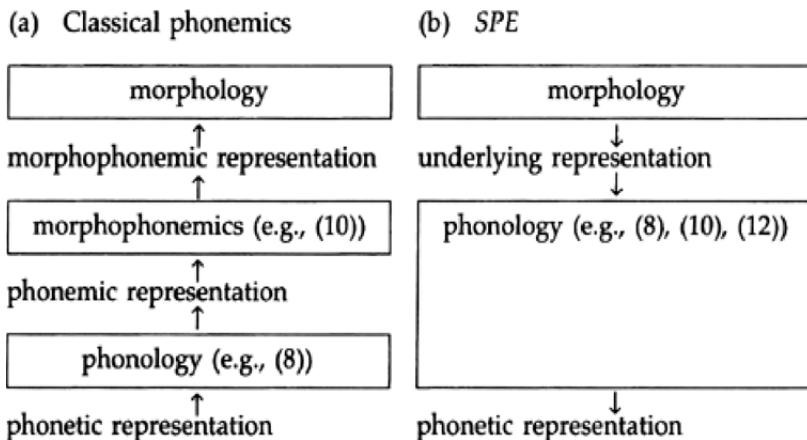
Analysing Chomsky and Halle’s (1968) *Sound Pattern of English*, it is clear that in generative phonology, there is no place for the third distinct level between the level of morphophonemes (underlying representations) and the phonetic level (surface representations), and thus “the phoneme level must go” (Sampson 1980, 200). Simply said, the level of phonemic representation is not included in the theory of generative phonology proposed by Chomsky and Halle (1968, as cited in Mohanan 1995, 26). However, apart from the abstract level of morphophonemes and the concrete level of physical phonetics, they too assumed the existence of “the level of universal binary distinctive features, or what Halle and Chomsky call ‘systematic’ (as opposed to ‘physical’) phonetics” (ibid.). The level of systematic phonetics<sup>12</sup> encompassing the universally fixed and finite set of possible distinctive features, although not explicitly present in the SPE, is the level of phoneme.

Thus, the discussion about the dichotomy of *surface form – underlying form* can be concluded by the assumption that in traditional generative phonology, surface forms represent the actual pronunciation and underlying forms refer to the abstract level of morphophoneme, with phonology hidden somewhere in between, as illustrated by Mohanan’s (1995) schema (Fig. 1-4).<sup>13</sup>

<sup>11</sup> Writing is a matter of convention and has to be learnt.

<sup>12</sup> Some generative phonologists use the term “systematic phonemics” instead of this original term, “systematic phonetics”, and some of them use both to refer to different levels of representation in generative phonology (see, e.g., Crystal 2008).

<sup>13</sup> It is important to note here that “phonemics” was not equivalent to “phonology” in early generative phonology (for details see, e.g., Mohanan 1995).



**Figure 1-4** The Position of Phonology in Classical Phonemics and in the SPE (Mohanan 1995, 37)

Nevertheless, in the 1970s and 80s, the necessity to reintroduce the level of phonemic representation into phonology appeared. Lexical Phonology introduced the idea that “even though phonological rules/constraints themselves do not fall into types, the interaction between phonology and morphology leads to a level of phonological representation that is distinct from underlying and phonetic representations” (ibid., 26).

## 1.4 Universality and Diversity

It is well known that we tend to look at other languages from the viewpoint of the language we speak; we tend to analyse other languages from the viewpoint of the categories suitable for the language of which we are native speakers. This tendency to analyse all languages in terms of the categories and principles valid in one’s own language is widespread in generative phonology. Chomsky’s universal grammar is based on the idea that part of our knowledge of language is innate. In detail, Chomsky argues that “the explanation for the fact that all languages of the world are cut to a common pattern (assuming that they are) is that the inherited structure of Man’s mind forces him to use languages of that particular type” (Sampson 1980, 147).

And, thus, many linguists think that “according to Chomsky, a visiting Martian scientist would surely conclude that aside from their mutually unintelligible vocabularies, Earthlings speak a single language” (Pinker

1994, 232); that is, following generative tradition, there is a common belief that “all languages are English-like but with different sound systems and vocabularies” (Evans and Levinson 2009, 429). As a consequence, it has become popular among linguists to attribute the results of their research as language-universal, ignoring the fact that considerable “diversity can be found at almost every level of linguistic organization” (*ibid.*, see also section 7.3 in this work).

I agree with Sampson (1980, 148) when he says that Chomsky is right about the existence of a certain degree of universality in linguistic structure but “the existence of linguistic universal is, for Chomsky and his followers, not so much a finding, which has emerged from their research despite their expectations, but rather a guiding assumption, which determines the nature of the hypothesis they propose in order to account for data” (*ibid.*). Therefore, generative linguistics suggests “universalist” theories and terms that may have the “non-universalist” explanations if we wish. Sampson (1980) calls this tendency a “rush to universals” (149).

It is widely known that although native language users can usually intuitively count the number of syllables in a word or a word-form, linguistic definitions of the substance, origin, structure, and function of this unit are not uniformly subscribed to (cf., e.g., Abercrombie 1967, 34; Romportl 1985, 107; Roach 2000, 70). The existence of the syllable as a sound unit can be considered a language-universal phenomenon (cf., e.g., Duběda 2005, 135). Most linguists agree that the theory of the syllable should be able to cover the wide extent to which syllable types vary cross-linguistically and, at the same time, account for those aspects of the syllable structure that remain constant across languages (Blevins 1995, 213). The relationship between the language-particular and language-universal features of syllables and the whole process of syllabification has been best expressed by Pulgram:

If the syllable is an operative unit of all languages, it is also a universal of language. Its definition must be [...] the same for all languages, regardless of the varying unit inventories in the different [languages] ... there arises the interesting question whether it might not be possible to arrive at a phonotactic definition of the syllable, which [...] does have universal validity for all languages. The question is, in other words, whether the phonotactic rules on syllabification might not be formulated in such a way that they are applicable to all languages, even though their implementations in the different languages must differ because of the underlying differences of phonotactics. I believe that such general phonotactic rules on syllabicity are not only possible but also necessary for the proper syllabification of any utterance in any language. (1970, 23)