ANGLICA WRATISLAVIENSIA XVI

ANGLICA
WRATISLAVIENSIA
XVI

CONTENTS

LANGUAGE

LITERATURE

LANGUAGE

RENATA BARZYCKA

RECENT PHONETIC CHANGES IN THE RECEIVED PRONUNCIATION OF BRITISH ENGLISH: VOWELS

The aim of the present paper is to provide an accurate description of phonetic changes taking place within the received pronunciation of British English during the 20th century with respect to vowels. The data for the analysis were derived from the literature dealing with the problem of change in RP as well as from some experimental research the results of which have been published recently. The second part of the study attempts to present a phonological interpretation of the observed phonetic changes. Its ancillary objective is to make some tentative predictions about a possible further development of the English vowels.

Since any phonetic material may be treated phonologically in many different ways, it seems necessary to specify, at least in some respects, the phonemic interpretation of the English vowels underlying the considerations included in the second part of the following work. The main divergencies in the process of allocating the English vocoids to appropriate phonemic categories concern diphthongs. The position assumed in this paper is the one taken by Jassem (1983): diphthongs are regarded as biphonemic sequences. As for monophthongs, Gimson's twelve vocalic phonemes have been preserved as the input to the phonetic changes described below. These are the following values: /ɪ, e, æ, ɒ, ʊ, ʌ, ə, iː, uː, ɑː, ɔː, ɜː/ (Gimson 1970: 97). In the output, one is left with a basic system of ten vowels distinguished by quality: /ɪ, e, æ, ɒ, ʊ, ʌ, ə, ɑː, ɔː, ɜː/. This reduction in number of the monophthongs results from the diphthongization of /iː/ and /uː/.

Gimson's transcription is used throughout this paper.

RECENT PHONETIC CHANGES

1. ISOLATIVE CHANGES

Isolative changes affect the realization of a phoneme in all its occurrences. They are independent in the sense that they are not caused by any immediate, outside influence (Gimson 1970: 68).

1.1 Lowering and fronting

The most evident example of such a change going on at present is the fronting and lowering of the vowel /ʌ/ as in *much, hut, cup*, etc. The formal description of the RP ʌ-sound given by Daniel Jones (1972: 86) is as follows: "i. height of tongue: half-open; ii. part of tongue which is the highest: the fore part of the back". Thus Jones' principal variant is half-open and rather retracted, more retracted than the central /ɜː/ and /ə/, though the author admits that the vowel may be realized variously with some southern English speakers.

According to Gimson the variety described by Jones is popular with conservative RP speakers, whereas the sound of general RP as used by younger people is produced with the centre raised just above the fully open position. This new phonetic shape can be ascribed to the Cockney influence or more generally to London pronunciation, which has an open front vowel very close to card. [a] in such words as *hut* or *cup* (Gimson 1970: 107–108).

Wells (1978: 49) and Jassem (1983: 180) show the ʌ-sound on their vowel diagrams as being central (Wells) or even front-retracted (Jassem) and almost, but not quite, open. Thus, as Jassem (1983: 278) describes the process, the shift has been from a half-open [ʌ̈] to a centralized [ä].

If the above descriptions can be trusted, the fronting of /ʌ/ appears to be one of the clearest changes in RP in the 20th century. However, the movement of the vowel from back to front becomes less obvious if Bauer's (1985) most recent experiments are taken into account. The research consists in the analysis of the recordings made between 1949 and 1966. Thirty-seven speakers, students and staff members coming into the Department of Phonetics, University of Edinburgh, were asked to read a standard passage. The recordings were analysed with respect to four vowels: /uː/, /æ/, /ɑː/ and /ʌ/. While /uː/ and /æ/ showed noticeable variation, there was no apparent shift for /ʌ/ and /ɑː/. A follow-up experiment using recordings from 1982 confirmed the results obtained previously.

When the normalized data for /ʌ/ are considered, the change observable on the major axis of variation is not that which is expected, i.e., it is not one from half-open centralized back to open centralized front. The observable movement points to raising but Bauer (1985: 74) does not seek any regular pattern of diachronic change in this apparent shift, as no significant correlations can be noticed with any of the time variables (year of birth and year of recording).

Furthermore, Bauer's (1985) research indicates that /ʌ/ and /ɑː/ are resistant to diachronic change. They may vary in their phonetic realizations, but over 20 years they have not shown any regularity in the changes of their articulation. One may assume then, that they are stable. Bauer (1985: 71) compares Wells' results from 1963, according to which there was a certain amount of overlap between the values of F_1 and F_2 for /ʌ/ and /ɑː/ but none for /ʌ/ and /æ/. In his data Bauer (1985: 71) observes an overlap between the figures for /ʌ/ and /ɑː/ as well as for /ʌ/ and /æ/. The qualitative relationship between /ʌ/ and /ɑː/ is maintained and the two phonemes have proved to be static. Thus /æ/ must be interpreted as encroaching on the territory of /ʌ/, which means, provided /ʌ/ has not undergone the fronting, that /æ/ must have been retracted.

This might be surprising since the authors do not show any doubts as to the kind of change the vowel /æ/ is undergoing. The shift expected is a movement towards a more open sound, although that change may be preceded by a shift in the opposite direction. Jassem (1983: 277) mentions the recent lowering of /æ/, the reversal of the earlier tendency to raise the sound nearly to the position of card. [ɛ]. The reasons for the process given by the author are as follows: 'a. the speech of educated people in the north of England, and b. a "congestion" of contrasting phones in the front vowel region between the half-open and half-close'. The change is easily noticeable with young speakers, especially with women. who use the variety described by Jassem as a very open front vowel, only slightly higher than card. [a].

Gimson's (1970: 105–106) RP /æ/ is also a front vowel whose quality is nearer to card. [ɛ] than to card. [a], i.e. [g]. According to the author the only RP speakers who use a more relaxed /æ/ (a sound approaching card. [a]) are children in the south of England, but they usually adopt the tenser and closer variety of /æ/ as adults. Young women, however, tend to maintain a lower /æ/, and it may be the case for them that /æ/ and /ʌ/ are merged, as /ʌ/ is realized as the low front variety.

Bauer's (1985) findings constitute the only departure from the position taken in the literature. His both raw and normalized data prove that the amount of variation in the front-back dimension for /æ/ is striking in comparison with open-close variation expected on the basis of the published descriptions of RP /æ/. The retraction is thus the most significant change to /æ/. This movement is actually attested in Henton's (1983) study as well (see below).

1.2. Raising

The next isolative change of recent years involves the raising of the vowel /ɔː/. Its height is described by Jones (1972: 79) as between half-open and open. It differs from card. [ɔ] in two respects: that it is made with the tongue slightly lower than for card. [ɔ] and that the lips are more closely rounded than for

card. [ɔ]. Barber (1964: 42) suggests that /ɔ:/ has nearly reached half-open, and it is articulated with slight lip-rounding. His observations have been confirmed by further formal descriptions of the sound given by Gimson, Jassem and Wells.

Gimson (1970: 115) describes his RP variant as being produced with medium lip-rounding and the back of the tongue raised between the half-open and half-close positions. The quality of the principal variant lies between card. [ɔ] and card. [o], i.e. [ɔ̞] or [o̞]. Yet when discussing the admissible RP allophones of the phoneme Gimson remarks that in advanced RP the quality of /ɔ:/ approaches card. [o]. Jassem (1983: 277) describes the development as the shift from [ɔ̞] with strong lip-rounding to [o̞] with the jaw less open.

1.3. Retraction

The influence of the Cockney pronunciation can be noticed in regard to the third isolative change of present-day English, i.e., the retraction of the 1st element in the diphthong /aɪ/ as in *lie*, *try*, etc. There is a tendency for the glide to begin from a more retracted position than formerly.

Jones (1972: 105) describes the sound as beginning at card. [a] and proceeding in the direction of /ɪ/. He adds, however, that many RP speakers begin it at a point between card. [a] and card. [ɑ], while others between [a] and [æ]. In Gimson's (1970: 130) description of the diphthong its starting point is slightly retracted, similar to the advanced RP /ʌ/, as the glide begins at a point slightly behind the front open position, i.e. card. [a]. This view is shared by Wells (1978: 49). However, Gimson (1970: 130) remarks that the pronunciation of the diphthong may vary among RP speakers. The articulation of /aɪ/ is connected with that of /eɪ/. Since RP /eɪ/ must fall within the limits of [eɪ] and [ɛɪ], the starting point in /aɪ/ cannot be closer than card. [ɛ] so that the contrast between /aɪ/ and /eɪ/ may be preserved. Therefore those RP speakers whose /eɪ/ is nearer to [eɪ] will begin the glide /aɪ/ with [æ], whereas those who use a more open variety [ɛɪ] will pronounce /aɪ/ with a more retracted variant of [a] or even a fronted type of [ɑ].

In popular London speech /eɪ/ is realized as [æɪ] or [aɪ]. Therefore /aɪ/ must be articulated as [ɑɪ], i.e., with the first element much more retracted. Probably under this influence many people today begin the diphthong nearer to the position of English /ɑ:/, as in *father*. Jassem (1983: 278) describes the starting point of the glide as that half-way between card. [a] and card. [ɑ].

1.4. Centring

The last phonetic change to be mentioned under the heading of isolative changes concerns English checked vowels, which, according to Barber (1964: 42), all share a centripetal tendency. All checked vowels, especially in rapid and careless speech, manifest a tendency to be pronounced nearer to the centre of

the mouth, i.e., they tend to approach /ə/. Barber (1964: 42) mentions only two checked vowels for which the change seems to be more easily observable as examples illustrating the above development, namely /e/ and /u/ in such words as *yes* and *good*. Thus /e/ and /u/ move towards /ə/, and the latter loses its lip-rounding. Jassem (1983: 227) notices that /i/ as in *bit* is also affected by the above change. Both Barber and Jassem remark that the same tendency has influenced the starting point in the diphthong /ou/ as in *bone*, which for many speakers has become /əu/. The shift is easily noticeable if one compares Jones' principal variant of the diphthong with that described by Gimson (1970: 133). The former starts in a more retracted region, at the point slightly lower than card. [o], the latter begins at a central position between half-close and half-open.

Henton's (1983) experiments concerning changes in the RP vowels seem to be noteworthy in connection with vowel centring since the results obtained from them constitute a source of empirical evidence for the development. Henton's research consists in a comparison of the formant frequencies for eleven pure RP vowels measured twice — 20 years apart. The results of the measurements taken in 1982 by the author proved to be significantly different from those taken by Wells in 1962.

It can be seen from the comparison of RP English vowel formants for male speakers (Fig. 1; the experiments were carried out only for male sepakers) that:

1. /i:, e, æ, ɑ:, ɒ, ɔ:, ʌ/ reflect a common tendency which manifests itself in a decrese of the formant values (F_1 and F_2 lower than in 1962);

2. /ɪ/ has a higher F_1 and a lower F_2;

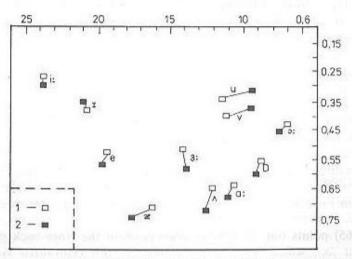Fig. 1. Vowel formant values for Wells (1962, 1) and Henton (1982, 2), showing the movement in phonetic space (Henton 1983: 358)

3. /ɜ:/ has a lower F_1 and a higher F_2;
4. /u, u:/ have higher F_1 and F_2.

When interpreted in articulatory terms, the above data point to the raising and retraction of /i: e, æ, ɑ: ɒ, ɔ:, ʌ/, to the lowering and retraction of /ɪ/, to the raising and fronting of /ɜ:/, finally to the lowering and fronting of /u, u:/.

The perceptible changes in frequencies for F_1 and F_2 in nearly all vowels indicate the overall centralization and point to the possibility of a change in the phonetic space for male speakers. Six vowels, /i, e, æ, ɜ:, u, u:/, contribute to the centring pattern, though through different processes. Thus the centripetal movement may be considered a general trend.

Henton discusses manifold possible external reasons for this dramatic change, including sampling abnormalities, atmospheric pressure changes, position of informants' heads, contextual differences, and physiological motivations (increase in the height and weight of the population). Yet, though some of the factors she takes into consideration might have influenced the results, they can be responsible for the observed decrease only to a certain rather insignificant extent. Therefore Henton looks for support of a different kind, i.e., phonological motivation.

Henton states that her experimental findings agree well with the formal descriptions of RP vowels found in recent literature. She refers to Wells' (1982) most recent examination of accents in English. Wells remarks that /i, e, æ, ɔ:, u:/ are relatively more central with younger speakers. His next observation concerns /æ/ and /ʌ/. The lowering and centring of the /æ/ phoneme (cf. Bauer 1985: 80), which might be connected with the analogous processes for /ɪ/ and /e/, results in an approximation of /æ/ and /ʌ/, so that for many speakers it would lead to a confusion of the two phonemes. Henton's (1983: 358) figure showing the movement in phonetic space over twenty years supports Wells' remarks, at least in the front-back dimension where the distance between the two vowels has decreased.

Another pair of sounds which in Henton's experiment contribute to the general centralizing movement is /u/ and /u:/. Henton (1983: 365) rightly observes that this process is very frequently remarked upon in the literature concerned with the problem (Barber, Gimson, Jassem, Wells). In 1962 Wells (1962: 25) noticed that /u:/ was sometimes centralized as well as diphthongized. Yet what he considered to be rather a minor effect has become much more generalized since 1962.

When discussing the RP /u:/ variant Gimson (1970: 119) mentions [ü]. The reason for this considerable centralization is, according to his explanation, the absence in English of any opposition between /u:/ and a front close rounded vowel /y/. Thus phonetic space is somewhat "empty" here, whereas, as Henton (1983: 365) points out, in a more open position the close back pair would encounter /ɔ:/, which is becoming closer. As this centralized type of RP pronunciation is especially popular in the London region, the London accent

seems to be the immediate source of the spreading influence. Gimson (1970: 120) states also that with the majority of RP speakers /u:/ is diphthongal.

On the basis of his findings, Bauer (1985) suggests that the change affecting /u:/ is really dramatic. His analysis indicates that /u:/ is being fronted to a greater extent than it is admitted in the literature. The process appears to be on the increase, as the results of the follow-up experiment prove that the fronting of /u:/ has continued for another 15 years beyond the last recordings used in the main body of the research.

About /u/ Wells (1982: 25) observed in his 1962 data that some occurrences of the phoneme were so much centralized as to approach the position of /ə/. Henton's (1983) study demonstrates that this tendency has also become more generalized. This view is supported by Gimson's (1970: 117) description of the vowel, where the raised part of the tongue is nearer to centre than to back.

Since F_2 of /ɜ:/ has increased in Henton's research, this vowel too is becoming centralized. F_1 is reduced, which accounts for the transition to a more close position. In his description of the phoneme Gimson (1970: 122) states that its RP allophones may vary from a sound in the half-close region or even above to one in the half-open region or slightly below.

To sum up: one can observe an overall convergence on the centre. There are three possible means to achieve it:
1. the lowering of F_1 and F_2 — /e, æ/,
2. the raising of F_1 and F_2 — /u, u:/,
3. the raising of F_2 (it moves the sound to the front) — /ɜ:/.
/i:/ in Henton's (1983) experiment proves to be very resistant to any change. In search for an explanation one may refer to its position of 'anchorage' (of reference). /ɪ/ in the experiment is moving towards /ə/ which seems to confirm the centring tendency of /ɪ/ mentioned by Jassem (1983: 277).

Henton's research has some limitations. Conclusions drawn from her findings cannot be generalized as applying to the whole RP speaking community, for only male speakers were tested. Besides, the time-scale is too short to assert that a particular recently observed pronunciation is spreading and therefore the process might be phonologically significant, i.e., may bring about some changes in the phonemic structure. It may as well be an example of change in fashion with no linguistically important consequences.

2. COMBINATIVE CHANGES

These changes affect the realization of phonemes too, but they are dependent, which means that they are brought about by the occurrence of phonemes in particular contexts (Gimson 1970: 68).

2.1. Change of /ɔ:/ to /ɒ/ before /f/, /s/, and /θ/.

In present-day English /ɔ:/ has changed to /ɒ/ when followed by the voiceless fricatives /f, s, θ/ in such words as, e.g., cross, broth, lost, often, etc.

Yet not all words where /ɔ:/ precedes the voiceless fricative have undergone this process. Barber (1964: 43) explains this inconsistency by the fact that the observable change is not restricted to the present time. It goes back to the 17th century, when short /ɒ/ earlier pronounced in all the words in question became lengthened before /s, f, θ/ (Late Middle English /ɒ/+fric. > Early New English /ɔ:/) with some speakers. These lengthened forms came into fashion in the 18th century, though two pronunciations existed in different styles of speech. What we are observing now is the reverse process. The 'long' forms are dying out, as they have become unfashionable. The /ɔ:/ phoneme survives in Modern English as an obsolescent form alternating with /ɒ/.

2.2 Change of /ju:/ to /u:/

There is an example of a combinative change in present-day English that is taking place at present, though the phonetic process originated in Late New English. In certain positions /ju:/ becomes /u:/ (Barber 1964: 43—44). In Late New English the falling diphthong /iu/ (</eu/, /iu/ and /y:/) underwent stress shift, thus becoming a rising diphthong which changed into the sequence /ju:/ — very common in the second half of the 17th century (Wełna 1978: 238—239). First the new pronunciation appeared in initial positions, later elsewhere (Barber 1964: 44). The sequence was used in words of French origin involving [y], e.g., *argue, beauty, due, duke, future, issue*, etc. At the beginning of the 18th century when preceded by some consonants, especially /r/, /tʃ/, /dʒ/, and /ʃ/ or the cluster consonant-plus-/l/, /ju:/ acquired mono-phthongal pronunciation, e.g., *blue, chew, cruel, Jew, June*, etc. The articulation with the sequence /ju:/ has been retained, however, after plosives, nasals, /f/, /v/ and /h/, e.g., *huge, music, pew, few*, etc., as well as after /l/ when it is preceded by an accented vowel, e.g., *value*. Barber (1964: 44) distinguishes an additional intermediate group where both forms are heard. This particular group of words is in the course of change. Two pronunciations are heard in the following contexts:

1. after /s/ as in *suit* /sju:t/ and /su:t/,
2. after /θ/ as in *enthusiasm* /in'θju:ziæzm/ and /in'θu:ziæzm/,
3. after /z/ as in *resume* /ri'zju:m/ and /ri'zu:m/,
4. after initial /l/ as in *lute* /lju:t/ and /lu:t/,
5. after medial /l/ when preceded by an unstressed vowel as in *absolute* /'æbsəlju:t/ and /'æbsəlu:t/.

In all words where the two forms are used the pronunciation with /u:/ is becoming increasingly popular. For some positions the change is more marked than for the others. In *lunatic*, for instance, /u:/ is almost always heard, in *lunar* it is very popular. After /s/, though /ju:/ is still very common, /u:/ is at least acceptable and more advanced. Thus *suit* is quite frequently pronounced /su:t/, and as Barber (1964: 44) observed, even BBC announcers sometimes use /ə'su:m/ and kən'su:m/ in *assume* and *consume*. After /z/ the process is not so

advanced. Until recently the /u:/ sound in this position was a trait of a regional accent. Yet the new forms are gradually gaining ground and even with RP speakers *resume* may be pronounced /ri'zu:m/. In such words where /u:/ is descended from Middle English /ɔ:/ as in *food, soon*, etc., there is obviously no alternation between /u:/ and /ju:/.

2.3. Diphthongization of /i:/ and /u:/

Barber (1964: 44—45) suggests that the diphthongization of /i:/ and /u:/ should be discussed under the heading of combinative changes, since the process is more marked and more frequent in word-final position, though it would probably spread to all positions. Jones (1972: 66—83) describes the principal variants of the sounds as pure vowels. But he adds that with some speakers the slightly diphthongized varieties may be used. Similarly, Gimson (1970: 97) includes /i:/ and /u:/ into the group of 'pure' vowels, even though, as he admits, in the case of /i:/ a slight glide from an open variety of [i] to a closer position, and [uw] or [ʊu] for /u:/ are more usual finally than pure vowels amongst RP speakers. The diphthongization of /u:/ begins at the position of /u/ and is achieved by a gradual increase of the lip-rounding (a glide to the /u:/ position).

The boundary between isolative and combinative changes is not very sharp. It seems justifiable to treat the diphthongization of /i:/ and /u:/ as an isolative change, as it is inevitably going to affect the realization of the two phonemes in all their occurrences. Another reason why the diphthongization should be so interpreted is that it is hardly possible to find any immediate contextual effects which might have set the process in motion. Moreover, the resemblance of the /i:/ and /u:/ diphthongization to the Great Vowel Shift, the acknowledged example of an isolative change, favours such an interpretation.

As an isolative change the diphthongization of the two phonemes is likely to affect the phonemic structure of English. One feels compelled to draw a parallel with the remarkable evolution of values known as the Great Vowel Shifts, during which the diphthongization was just one part of a complete change in the structure of the long vowels. It is highly conjectural to predict a similar course of events, but the diphthongization will certainly bring about structural imbalance. According to the drag-chain theory the two long-class vowels diphthongize, thus leaving an empty space, i.e., vacated slots in the system which should be filled. One intimation of a phoneme moving up to fill the vacant place is the raising of /ɔ:/ (cf. Henton's results for long vowels: all the long vowels are raised).

Bauer's (1979) speculations about the potential repetition of the same circle sound quite convincing, though some of the assumptions may be refuted on the basis of his most recent findings (1985). Bauer (1979: 65) interprets the 20th-century Great Vowel Shift in terms of a push-chain theory and ascribes the initiating role to /ʌ/, which as a low unrounded, centralized vowel is

generally assumed 'unnatural' and 'instable'. Thus /ʌ/ has become fronted and as such runs the risk of overlapping with /æ/. To avoid the merger /æ/ may be raised ([ɛ] or [ɛ̝]) or diphthongized to [æə] or [ɛ̞ə].

A raised /æ/ may in turn encroach on the territory of /e/. The strategy for avoiding the overlap is the raising of /e/. Now /ɪ/ should move either towards /i:/ or towards /ə/. If /ɪ/ approaches /i:/, the latter will diphthongize. The diphthongization in RP is quite narrow, i.e. [ɪi]. But Bauer (1979: 61) puts forward the hypothesis that it may become fairly wide. His predictions are based on the observations of the changes affecting Australasian English, because the author finds that in many important respects New Zealand English or Australian English represent a later stage in the evolution of English than RP does, or show more extreme development in the same direction as the changes in RP (Bauer 1979: 59). In Australasian English the diphthongized /i:/ becomes as wide as [əi]. In the 16th century the vowel in the word *fire* was most likely pronounced [əi]. Were the circle to be completed, a current /i:/ would be pronounced /ai/.

/ai/ in turn is also changing, as it might be realized with a more retracted type of [a] or fronted [ɑ] (Gimson 1970: 130). In advanced RP the variety used has an extra-long first element, usually fronted [a:] and very little or no vocalic glide. But the gap left by /ai/ has two competitors for the empty slot: /i:/ already mentioned, and /ei/, the first element of which has been lowered. In popular London speech as well as in Australasian English the starting point of the diphthong may be as open as card. [a]. Bauer (1979: 61) speculates about the possible outcomes of this 'competition' for the place deserted by /ai/. There seem to be two likely solutions. /ei/ may monophthongize, which is quite probable as in advanced RP there may be little or no vocalic glide in the realization of the diphthong (Gimson 1970: 128 and Jassem 1983: 278). The other possibility is that /i:/ and /ei/ can remain distinct, either as [əi] and [ai] or as [æi] and [ai] respectively.

The diphthongization of /u:/ is said in the literature (Barber 1964: 51, Wełna 1978: 245) to anticipate the Great Vowel Shift. Bauer's (1985) most recent findings indicate that /u:/ appears to take part in the potential large-scale change not only because it has become diphthongized but also because it has been fronted. Moreover, the data suggest that the process of the /u:/ fronting has gone far beyond the stage allowed in the descriptions or even attested in Henton's (1983) study. Bauer (1985: 70) observes that the most fronted tokens of /u:/ approximate the front version of /æ/.

Australasian English may once again provide an interesting point of comparison. Bauer (1979: 64) observes that in New Zealand English /u:/ is realized as [əʊ], which can be treated as the first step towards [aʊ]. The author refers also to Bernard's (Bauer 1979: 64) comment on the Australian presumable pronunciation of /u:/ − [ɛʊ], 'which would already suggest [aʊ] to

the Australian ear'. The considerable fronting of /u:/ appears to announce a similar course of events in RP.

When comparing the 15th and the 20th century Great Vowel Shift Bauer (1979: 64) notices that whereas the 15th century change involved only 'long' vowels, both checked and unchecked alike seem to be participating in the modern circle. His observation points to the fact that in Modern English there is no distinction between these two types of vowels.

2.4. Smoothing of diphthongs and triphthongs

There is a strong tendency towards monophthongization of some diphthongs and triphthongs. In the inventory of the English phonemes Jones (1972: 61) distinguished the diphthong /ɔə/ to be found in such words as, e.g., *coarse, course, door*, etc. Yet he admitted that this sound had coalesced in the pronunciation of many RP speakers including the author himself with the monophthong articulated in such words as, e.g., *talk* or *broad*. Thus the words *coarse, course, score, four* are now pronounced /kɔ:s/, /kɔ:s/, /skɔ:/, /fɔ:/ respectively.

The analogous process is observed, though less markedly, in the diphthong /uə/, as in *sure, pure*, etc., these words being sometimes realized with /ɔ:/, e.g. /ʃɔ:/, pɔ:/.

The smoothing of diphthongs is also seen in /ei/, as in *day, game* or *made*. The resultant monophthong varies between card. [e:] and [ɛ:]. Jassem (1983: 278) describes it as [ɛ(:)]. There is a weaker tendency for the diphthong /ɛə/, as in *pair, fair* or *bare*, to be pronounced by conservative and advanced RP speakers with a greater opening than that for the principal variant and with a slight glide (Gimson 1970: 143), i.e. [ɛ̞ə], [æə]. Another advanced RP form which seems to be a step further uses a monophthongal vowel, often centralized, especially in a nonfinal syllable, as in *careful* or *scarcely*. Gimson (1970: 144) uses [ɛ:] to transcribe this sound, whereas for Jassem (1983: 278) it is rather [æ(:)].

Barber (1964: 45−46), Jassem (1983: 193), and Wełna (1978: 245) mention /ai/ and /au/ as the two diphthongs subject to the smoothing process when followed by /ə/. Gimson (1970: 138−139), however, states that there are as many as five diphthongs which become smoothed before /ə/, viz. /ei, ai, ɔi, əu, au/. In slow speech the third vocalic element /ə/ may be added to the two elements of the diphthong. But in rapid RP there is a tendency to omit the second element /i/ or /u/, especially when /ə/ is felt as not belonging to a separate morpheme. Thus [aiə], e.g., becomes [a:ə] and [auə] becomes [a:ə]. Since, as Jassem (1983: 193) observes, the difference in the first element, i.e., [a] vs [ɑ]; is very slight or does not exist at all − both sequences may be represented by single sequence [ɑə], which will produce new homophones of the type *tyre* vs *tower*, *shire* vs *shower*, *sire* vs *sour*. In addition this newly

created diphthong tends to be further reduced, i.e., monophthongized, as the difference in tongue position and loudness between the two successive segments is so small that with many speakers in rapid speech a long pure vowel is used. It is different from the allophones of /ʌ/ as well as from the allophones of /ɑː/. The monophthong used can be described as a fully open vowel half way between the card. [a] and card. [ɑ]. This new phoneme might in turn coalesce with /ɑː/ already existing in the inventory. As the results of the above simplification *tire* (or *tyre*), *tower* and *tar* are all pronounced with the same sound, i.e. /tɑː/.

/eɪ/ plus /ə/ suffix result in [eːə]. The diphthong is often pronounced /ɛə/, in such words, e.g., as *player or layer* thus producing some homophones, e.g., *lair* and *layer*. The monophthongization of [əʊə] into [əː] (= /ɜː/) leads to the levelling between *mower* and *myrrh*, *slower* and *slur*. [ɔɪə] may become [ɔːə] in general RP. The first element of this new diphthong differs from the pure vowel /ɔː/ in the degree of openness, as it is not higher than half-open.

2.5. Split in final /ɪə/ and /uə/

A word final position is characteristic of another change of present-day English, i.e., the replacement of the diphthong /ɪə/ by the disyllabic sequence /ɪ/+/ə/, as in *Rhodesia* [rəʊˈdiːsɪ-ə] or *nausea* [nɔːsɪ-ə]. A similar tendency affects /ɪə/ even if it is not final but unstressed, as in *dubious* [djuːbɪ-əs].

Barber (1964: 47) mentions a similar though less marked tendency for the diphthong /uə/ to be replaced by the disyllabic sequence /u/+/ə/ in unstressed positions, as in *influence* or *arduous* [ˈɪnflu-əns], [ˈɑːdju-əs]. Although Barber (1964: 47) has never heard the i-ə pronunciation for /ɪə/ in final stressed positions, as in *cavalier* or *chandelier*, he supposes that the ɪ-ə forms are quite possible.

It was pointed out by Jones (1972: 118—122) that in unaccented syllables the sequence ɪ+ə did not represent the falling diphthong /ɪə/ with prominence on the ɪ-element but rather that of the rising type with the first element weaker of the two, i.e. [ɪə], which he distinguished as a separate diphthongal phoneme Nr 22. Since /ɪə/ is always either fully or partially stressed, whereas /ĭə/ is always unstressed, one may conclude that the difference between the two is not phonemic. However, in such words as *reindeer* or *nadir* /ɪə/ has the minimum stress which might count as complete lack of stress. On the other hand, the distinction between /ĭə/ and a weakly stressed /ɪə/ is hardly perceivable, which would support the view that the two sounds are not phonemically different.

The syllabic status of /ĭə/ is also difficult to establish. Jones (1972: 119) would suggest a monosyllabic interpretation of his Nr 22. Such a treatment of the diphthong seems justifiable as it is often realized with a monosyllabic pronunciation [jə]. In unaccented syllables the i-element is equivalent to [j], e.g., *period* [ˈpɪərɪəd] or [ˈpɪərjəd] (Gimson 1970: 142). However, Jones (1972: 119) admitted that the exact nature of /ĭə/ was doubtful, as many English

speakers pronounced it as a disyllabic sequence of /ɪ/ and /ə/. Thus in unaccented syllables the pronunciation of /ɪə/ shows variation between monosyllabic [jə] and disyllabic [ɪ-ə]. Jones' original distinction between /ɪə/ and /ĭə/ seems to be preserved: /ɪə/ vs /jə/, or /ɪə/ vs /ɪ/+/ə/. Jassem (1983: 652) suggests that the diphthong /ĭə/ can be described as tending to disyllabicity.

It can be observed that the current split in final i-ə concerns what was distinguished by Jones as Nr 22, i.e., /ĭə/, as the process is reported to be taking place only in unaccented positions. The tendency to disyllabicity overrides the tendency for /ĭə/ to be replaced by monosyllabic /jə/. Jones' Nr 22 is split into /ɪ/+/ə/, and the accentual contrast between a weakly accented, falling /ɪə/ and an unaccented, rising /ĭə/ is superseded by the opposition between a monosyllabic diphthong and a disyllabic sequence of two phonemes.

The same kind of argumentation will account for the change in u-ə. The diphthong is affected when unstressed, which means in the light of Jones' analysis that the process concerns /ŭə/ rather than /uə/. Though once again Jones (1972: 122—124) distinguished the rising diphthong as a separate phoneme, he admitted that the syllabic nature of /ŭə/ was doubtful. Some English speakers use monosyllabic pronunciation /wə/, whereas others realize it as a disyllabic sequence /u/+/ə/. Barber's (1964: 47) observations may confirm the fact that the tendency to disyllabicity has proved to be stronger. This means that instead of two different phonemes /uə/ and /ŭə/ one has the phoneme /uə/ and the disyllabic sequence /u/+/ə/.

The question is, however, whether the above reasoning correctly describes the phonetic data, i.e., whether it meets the level of observational adequacy. It is doubtful whether one actually can define the syllabic status of the sounds discussed above. If not, then the conventional set theory cannot be applied in the considerations as the described phenomenon constitutes a fuzzy set, i.e., a class with unsharp boundaries of membership (Radecki 1980: 9). In the conventional set theory the transition from the membership state to the non-membership one is abrupt. In a fuzzy set, on the other hand, it is gradual. /ĭə/ and /ŭə/ are described as 'tending to disyllabicity', which means that the process is rather gradual than abrupt. One cannot definitely state how many syllables there are in such words as, e.g., *hideous* or *influence*. Thus it seems that the whole problem of /ĭə/ and /ŭə/ should be reconsidered in the light of the theory of fuzzy sets.

2.6. Final /iː/ for /ɪ/

Barber (1964: 46) remarks that with some speakers final /ɪ/ is much closer and sometimes longer than the principal allophone of /ɪ/. Many educated people from the south-east use a variety which is sufficiently long and close to sound like their /iː/. They pronounce *pretty* and *Derby*, e.g., as /prɪtiː/ and dɑːbiː/ instead of /prɪtɪ/ and dɑːbɪ/. More orthodox RP speakers, on the other hand, use a more open variety of /ɪ/ moving towards /e/. The two words are

pronounced then [prɪtɪ^ᵀ] and [dɑːbɪ^ᵀ] respectively. If the /iː/ variety is articulated finally, it is retained even if inflexional endings are added. Thus *authorities* will be pronounced with final /iːz/.

Barber (1964: 46) observes that speakers who use /iː/ finally tend to diphthongize the phoneme /iː/. Their final /iː/ instead of /ɪ/ may also be diphthongized, which according to the author is the evidence that this finally used sound belongs to the /iː/ phoneme. The pronunciation of *pretty* with these speakers is [prɪtii] or [prɪtəi]. The replacement of /ɪ/ by /iː/ in final positions does not seem to representent the process of phonological significance, but rather a change of style. Barber (1964: 47) gives two examples from BBC of occasional use of /iː/ instead of /ɪ/ in other positions than final: *between* /biːˈtwiːn/ and *eleven* /iːˈlevn/.

Henton's (1983) results cannot support Barber's (1964) observations reporting that the final /ɪ/ may be sufficiently long and close enough to assert that it is in fact replaced by /iː/. No evidence of this trend is provided by Henton's (1983) data, the distance between the two phonemes being maintained. The only observable movement of /ɪ/ is towards /e/.

2.7. The spread of /ə/ in unstressed syllables

/ə/ is a sound which occurs very frequently in English. The speed and care with which one is talking predetermines to a certain extent the choice between alternative forms involving /ə/ or another vowel. Barber (1964: 49) suggests, however, that aside from the role /ə/ has in the accentual pattern of English, there is a tendency for the /ə/ forms to gain grounds. Alternations between /ɪ/ and /ə/ are quite numerous. As Gimson (1970: 101) observes, many English speakers, especially of advanced RP, use a lower and more centralized variety of /ɪ/ (= [ə]), particularly in unaccented syllables, most frequently in such suffixes as *-less*, *-ness*, *-ate*, *-age*, etc. If one takes into account the fact that /ɪ/ shares in the centripetal movement affecting some of the checked vowels, then the coalescence of /ɪ/ and /ə/ seems inevitable. It may be interesting to see how the situation has developed in New Zealand English. The opposition between /ɪ/ and /ə/ does not exist here (Bauer 1979: 57). In RP, however, only some words can be pronounced both ways, and in these forms /ə/ becomes increasingly popular.

Alternations between /ɪ/ and /ə/ are quite common, whereas those involving /ə/ and other vowels are relatively recent. Out of Barber's (1964: 49) numerous examples only several have been recorded in *English Pronouncing Dictionary* (Jones 1972). These are:

/ə/ replacing /ɪ/ — *system, ability, kitchen, become, remain, horrible*;
/ə/ replacing /ə/ — *September*;
/ə/ replacing /ɒ/ — *boycotted*;
/ə/ replacing /ɔː/ — *corridor*;
/ə/ replacing /ʌ/ — *income*.

One may conclude that the above alternations represent phonemic variability within the same variety of pronunciation. Only the distribution of phonemes in particular words is affected. The spread of /ə/ does not seem to have any phonemic consequences. It might lead to further obscuration of unaccented syllables. On the other hand, phonemic variability in words is not confined to the alternations involving /ə/. The permissible variations concern other vowels as well, e.g. /e/ ~ /eɪ/ *again*, /æ/ ~ /ɑː/ *translate*, /æ/ ~ /eɪ/ *patriot*, etc. (for further examples see Gimson 1970: 255).

3. CHANGES OF VOWEL LENGTH

The change of vowel length going on in our time is the lengthening of the traditionally 'short' vowels. Some exceptional cases of this process were noted by Jones (1972: 235). He noticed that in the south of England a fully long /æː/ was generally used in the adjectives ending in *-ad*, e.g., *bad* /bæːd/, *sad* /sæːd/, etc. This tendency, however, did not apply to all nouns ending in *-ad*, as *lad* and *pad*, for instance, have only one, i.e., short form /læd/ and /pæd/.

Barber's (1964: 50) remarks on his own speech confirm Jones' observations, as all the adjectives in *-ad* quoted by Barber have a long vowel. of the nouns *lad* has a long vowel, but *cad*, *fad*, *dad*, and *pad* have short ones. Jones (1972: 235) adds that long /æː/ is most frequently found before voiced consonants, but its occurrence is not confined to these situations, as the words *back* and *that* at the end of a sentence may be realized with long /æː/ by some southern speakers. The same group of speakers, especially Londoners, make a similar lengthening of /e/ in some words, e.g. *bed*, *men*, *said*, but, as Jones (1972: 235) observes, not in *fed* and *tread*. The lengthening of 'short' vowels is heard sporadically in any position in many words, but especially in monosyllabic words ending in a voiced consonant.

PHONOLOGICAL INTERPRETATION

The pronunciation of a language is subject to a process of a constant change. However, not all the changes going on at a particular stage are equally significant in regard to the linguistic consequences they may bring about. Isolative changes, set in motion by internal factors of the language, are most likely to cause some serious transformations in the phonemic pattern of a language. Therefore mainly these processes will be taken into consideration in the following phonological analysis.

Some changes qualified by Barber (1964: 42—49) as combinative are in Gimson's (1970: 69) more rigorous terminology named external, as they are external to the main line of evolution of the language. They are also caused by some external factors, such as changes in the culture and society of the speakers and in the environment in which this culture is created. These modifications of

pronunciation usually involve a replacement of one phoneme by another in a particular word, or, more generally, they consist in a change of distribution of phonemes among word and morpheme classes. They represent temporary phenomena relating to changing fashions, styles, phonetic preferences, etc. Since they have scarcely any linguistic consequences in the sense of an effect upon the phonemic system, they are excluded from the analysis.

Of the remaining combinative 'non-external' changes only those which are likely to spread to all phonetic environments and eventually affect all members of a phoneme will be taken into account.

1. THE NUMBER OF THE PHONEMES

In the speech of an RP speaker one can distinguish 20 different syllabic peaks. All these contrast with one another. The problem which arises is how their distinctness should be represented in a phonemic analysis. If diphthongs are phonemicized as single distinctive phonological units the process of monophthongization discussed above will inevitably reduce the number of the RP vowel phonemes.

The original system of the English vowels proposed by Jones (1972: 61) consisted of 21 vocalic phonemes, 9 of which were diphthongs. Of Jones' 9 diphthongal phonemes, viz. /eɪ, ou, aɪ, au, ɔɪ, ɪə, ɛə, ɔɔ, uə/, 7 have remained. These are: /eɪ, ou, aɪ, au, ɔɪ, ɪə, ɛə/ (approximate stages: 1940—1950 — one phoneme less, 1960—1970 — two phonemes less).

On the other hand, two so-called 'pure' vowels /iː/ and /uː/ have undergone the process of diphthongization. Thus the number of the diphthongal phonemes in the English inventory has not changed quantitatively. Consequently, however, the number of the monophthongal phonemes has decreased. As the result the present-day English system of the vocalic phonemes contains 10 monophthongs and 9 diphthongs.

The monophthongization described above will not reduce the number of the English vowel phonemes, if the diphthongs are treated as sequences of phonemes, which is the position taken in this paper. Thus the re-interpreted Jones' system of the English vocalic phonemes, which functions as the system of reference, consists of 12 monophthongal phonemes: /ɪ, e, æ, ʌ, u, ɔ, iː, uː, ɑː, ɔː, ɜː/. The diphthongization of /iː/ and /uː/ results in the reduction of the monophthongs. Thus the present-day English employs 10 vowel phonemes: /ɪ, e, æ, ʌ, u, ɔ, ə, ɑː, ɔː, ɜː/.

2. THE SYSTEM

2.1. Jones' system, long and short monophthongs, diphthongs

The 20 syllabic peaks that can be distinguished in the speech of an RP speaker have been traditionally arranged in classes. Two main classes have been differentiated: the class of the diphthongs and the class of the pure vowels

further subdivided into long and short. Three features: diphthongization, length and vowel quality have been relied on as the criteria for the classification. To ascribe a particular sound to the appropriate class has meant to decide which of these features is distinctive and which one is concomitant in each case.

The difference of length underlies the phonemic notation used by Jones and it has predetermined the traditional pairing of the vowels /ɪ, iː/, /u, uː,/, and /ɒ, ɔː/ for a long time. An interpretation arising from Jones' phonemic transcription is that [ɪ] and [iː], e.g., belong to the same phoneme but to two different chronemes: short and long (Jones 1976: 124—134). The changes involving quantity described in the first part of this paper reveal that the customary phonetic notations based on Jones' interpretation obscure the facts of English they are to represent. Thus the traditional division of the so-called 'pure' vowels into two types, long and short, is disturbed.

Since the trend of lengthening short vowels seems to be on the increase, Jones (1972: 236) and Barber (1964: 51) suggest that perhaps a new development of the language is beginning. It is possible that through the process currently going on the present combined qualitative and quantitative distinctions between vowels will give way to distinctions based on quality only. The phenomena observed in respect to vowel length constitute a consistent trend in the pattern of vowel change. This tendency may be connected with some isolative internal changes which affect vowel quality, thus increasing the perceptual qualitative distance between related 'long' and 'short' vowels. The isolative changes which appear to be co-ordinated with the lengthening of checked vowels are: the raising of /ɔː/, the diphthongization of /iː/ and /uː/, and the centring of /ɪ/ and /u/.

These three processes render the traditional pairing /iː, ɪ/, /uː, u/, and /ɔː, ɒ/, which have been transcribed with the same symbol for two members of each pair for many years, unfounded. Jassem's (1983a) experimental findings are noteworthy in connection with the problem of quality vs quantity distinctions among English monophthongs. The results of his computer-aided classification of English monophthongs give strong support to the quality first approach, because there was less confusion within the three pairs mentioned above than between members of other pairs of neighbouring phonemes (Jassem 1983a: 19).

The second part of the work, i.e., a discriminant analysis of inter-phoneme and inter-speaker distinctions confirmed the results obtained by Jassem in the first part of the study. Analysing similarities between the idiophonemes for each of the three speakers, Jassem (1983a: 25) observes that the three distances in the phonetic space, i.e., iː-ɪ, uː-u, and ɔː-ɒ are greater than the other distances, e.g., ʌ-ɑː (Fig. 2). The results obtained for the individual voices support a phonological analysis regarding phonetic quality as the main factor differentiating the English monophthongs.

There remains, however, the pairing /ʌ/ and /ɑ:/. Bauer (1975: 61) refers to Gimson's (1970: 110) comment on the two phonemes according to which they are very close to each other qualitatively and therefore can be treated as a long and short version of the same phonematic unit. The same view is shared by Sommerstein (1977: 31). According to the literature /ʌ/ has become fronted. The problem is whether the qualitative relationship between /ʌ/ and /ɑ:/ is maintained, i.e., whether /ɑ:/ is also being fronted. None of the published descriptions suggests such a movement. One may assume there is no change affecting /ɑ:/.
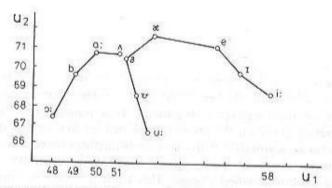

Fig. 2. Speaker's mean vectors in the u_1–u_2 discriminant function plane (Jassem 1983a: 25)

If /ʌ/ is moving forward and /ɑ:/ remains static, the perceptual distance between the two will increase. Thus the quantitative distinction may be replaced by the qualitative contrast. This, of course, would provide more evidence that a phonological analysis should first of all consider qualitative oppositions in regard to the English monophthongal vowels.

The question is, however, whether /ʌ/ has actually been affected by the fronting. Bauer (1985: 79) concludes on the basis of his results that there is no change currently taking place within RP to /ʌ/, though there might be variation in the phonetic realization of the phoneme. Moreover, overlap between the values of F_1 and F_2 for /ʌ/ and /ɑ:/ is observable but length is always available to distinguish the two vowels, and no ambiguity arises. In the light of Bauer's (1985) findings it seems that the distinction between /ʌ/ and /ɑ:/ is preserved by both quantitative and qualitative contrasts, though length is decisive.

The problem of grouping together the so-called 'short' vowels in opposition to the 'long' vowels of English gets even more complicated in that type of pronunciation where a new phonemic contrast based on mere length has arisen. Some speakers of English make a difference of duration in *jam*. Thus they use /dʒæ:m/ for "fruit conserve" and /dʒæm/ for "crush". Similarly, the pronunciation of the two words spelled *can* is dependent upon the meaning

they carry, /kæ:n/ — the noun, /kæn/ — the verb. The two varieties of the vowel /æ/ have exactly the same phonetic context. But this differentiation can be neglected as this type of articulation is not generally popular with speakers of RP.

1.2 Distributional considerations

It seems obvious, then, that if there are good grounds for dividing the English monophthongs into two groups the most significant difference between them is not that of length but that of distribution. First of all it can easily be found that /ə/ is different from the remainder in never occurring in stressed syllables. The criterion of stressability divides the English vocalic phonemes into two unproportional groups of stressable and unstressable vowels. Since the class of unstressable vowels contains merely one element, i.e., /ə/, one may proceed to investigate differences of behaviour within the other class.

/i, e, æ, ʌ, ɒ, u/ can occur only in stressed final syllables if followed by a consonant or a consonant cluster, whereas stressed /i:, ɑ:, u:, ɔ:, ɜ:/ can also appear word finally. The distributional criterion allows the division of the English 'pure' vowels into checked and unchecked.

The phonetic changes described in the first part might have altered the arrangement of the checked vowels in the phonetic space, but the vowels still form a phonologically homogeneous group. Although within the group of the stready-state vowels /i:/ and /u:/ have become diphthongized, their distribution has remained exactly the same as it is for the monophthongal 'long' vowels. Actually all the diphthongs can also appear in word final position under stress. This suggests certain affinity between diphthongs and 'pure, long' vowels. The conclusion is that perhaps the two types should be grouped together at the classificatory level. The morphophonemic data provide more evidence in favour of the dichotomous interpretation of the English vocalic system (checked monophthongs vs unchecked monophthongs and diphthongs). Diphthongs and 'long' vowels form a morphophonemic class as both the monophthongal and diphthongal members alternate quite regularly with the appropriate checked monophthongs. In an alternation set of that type one term is a member of the class containing checked vowels and the other belongs to the group of unchecked vowels, e.g. *divine* — *divinity*, /aɪ/ vs /ɪ/, *serene* — *serenity*, /i:/ vs /e/, etc. It seems reasonable then to arrange the English nuclear types into two classes: checked vowels: /i, e, æ, ʌ, ɒ, u/, unchecked vowels: /ɔ: ɜ:, ɑ:, the diphthongs/.

2.3. Centring diphthongs

Having recognized two basic types in the English vocalic system one may examine more thoroughly the mutual relationships among the phonemes

within the group of the unchecked vowels. The Jonesian tradition distinguishes between long 'pure' and long falling diphthongal vowels. The falling diphthongs can be further subdivided into three subgroups: fronting, backing, and centring. The position of the centring diphthongs appears to be rather unstable.

The disappearance from RP of the phoneme /ɔə/ previously used in such words as *door* or *coarse* has initiated the monophthongization of centring diphthongs, whose phonetic realizations are often scarcely diphthongal at all. It may as well become a fact that /uə/ will coalesce with /ɔ:/ through the immediate stage of /ɔə/ and eventually disappear altogether. Since /ɛə/ is in the course of a similar change, one may put forward a hypothesis that with time all the centring diphthongs will become smoothed and therefore can be identified with the monophthongs to which they have been reduced. In his illustrative analysis of the English phonemes Sommerstein (1977: 31) suggests interpreting the centring diphthongs /ɪə, uə, ɛə/ as distinguished from /ɪ, u, e/ by length.
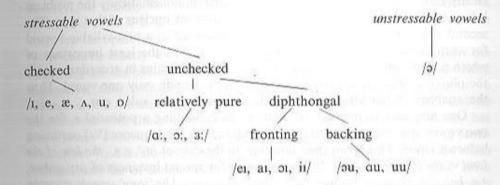
Similarly, Cohen (1965: 101) does not recognize the centring diphthongs as separate phonemic entities, though in other respects he remains faithful to the Jonesian interpretation of the falling diphthongs. But unlike Jones and Sommerstein, he does not identify the first element with one of the 'short' vowels, but with modifications of /i:/, /u:/ and the long variety of /æ/, i.e., [æ:]. The modifications of the vowel quality are ascribed to the influence of a potential /r/. According to this interpretation the centring diphthongs are contextual variants of the vowels /i:/, /u:/ and /æ/, as the variation is maintained even where *r* is not pronounced.

Were the first element in /ɪə/ identified with short /i/, as it frequently is (Jones, Gimson, Sommerstein, Jassem), the assumption regarding this centring diphthong as the positional allophone of the vowel phoneme conditioned by a following *r* would not be accepted as /i/ occurs in that position and is realized as its normal variant, e.g., *mirror*. Cohen, however, chooses to treat the initial elements of /ɪə/ and /uə/ as the modifications of the long vowels /i:/ and /u:/, for which his two-phoneme analysis [V:r] of single phones holds good.

Yet /ɛə/ on Cohen's conception constitutes a more controversial problem. The interpretation of this centring diphthong as the positional variant under the influence of a possibly following *r* can be questioned as /æ/ before *r* is otherwise represented by its normal variant, e.g., *marry*. The original qualitative opposition between *Mary* and *marry*, i.e. /mɛəri/ and /mæri/, is thus superseded by the purely quantitative contrast /mæ:ri/ vs /mæri/, which may be further neutralized so that the two words will finally have the same pronunciation either /mæ:ri/ or /mæri/ for both. The contrast then will disappear altogether. It may be claimed that the observable phonetic facts, i.e., a weak tendency for /ɛə/ towards the monophthongization into /æ/ support the phonological identification of the two previously distinct phonemes. On the other hand, there appears to be an opposite tendency affecting /æ/ so as to

guard the phonological differences between /ɛə/ and /æ/. The analysis of /ɛə/ as a sequence of the basic vowel + /r/ can be maintained if a new vowel phoneme of very restricted distribution is introduced. This might lead to excessive complexity of the vowel system. The attractive feature of Cohen's analysis, however, is that the centring diphthongs are not recognized as separate phonemic units, though the monophonematic interpretation of the other diphthongs is preserved. The general trend in the phonetic changes affecting the centring diphthongs in English point to the analytical solution that does not grant the phonemic status to the sounds in question.

The final picture of the English vocalic system where diphthongs are defined monophonematically is this:

stressable vowels   *unstressable vowels*

checked   unchecked   /ə/

/ɪ, e, æ, ʌ, u, ɒ/   relatively pure   diphthongal

/ɑ:, ɔ:, ɜ:/   fronting   backing

/eɪ, aɪ, ɔɪ, iɪ/   /ɔu, ɑu, uu/

2.4. Three biphonemic interpretations

Diphthongs, however, may be analysed as sequences of two phonemes. The most convenient way to phonemicize fronting and backing diphthongal sounds is to identify them as successions of the basic vowels phonetically closest to the first element and either a front or a back non-syllabic vocoid. Thus the following system of syllabic peaks can be recognized:

i	ij
e	ej
æ	aj
ʌ	ɔj
ə	ɔw*
ɒ	uw
u	ɑw
ɑ:	
ɜ:	
ɔ:	

This mode of presentation is consistent with the phonological and morphological facts discussed above.

* If the symbol /ə/ stands for a simple syllabic peak the vowel it represents is always unstressed. If it appears in a complex vocalic nucleus the above rule does not apply.

Since three vowels, /ɑ: ɜ: ɔ:/, manifest distributional and morphophonological affinity to the diphthongs, one feels tempted to make them similar in form,

too, i.e. to analyse them as 'complex' vocalic nuclei. Thus the dichotomy would embrace two categories of the syllabic peaks named after Trager and Smith (Lass 1976: 7) 'simple' (the left-hand column) and 'complex' (the right-hand column).

Such a division solves the problem of /ɔ/, which is set apart from the system of the checked and unchecked vowels as it can be classified with neither of the two groups. If the vowels of English are divided into simple and complex, /ə/ may be included in the former category.

Two, more or less distinctly perceivable qualities constituting a diphthong can be relatively easily identified with the values from the phonemic inventory phonetically closest to them. /ɑ:/, /ɜ:/, and /ɔ:/, on the other hand, are steady-state vowels. If they are to be interpreted biphonematically the problem is how to identify the second phoneme in the complex nucleus of that type. The second element of a diphthong has been recognized as a non-syllabic vocoid for various reasons (see Sommerstein 1977: 33), not the least important of which is non-syllabicity of /j/ and /w/. This choice remains in accordance with the phonetic generalization that a syllable may contain only one vowel. Thus the analysis of the long static vowels as geminates is ruled out.

One may choose to treat /ɑ:/ and /ɜ:/ as containing a potential r, for the two vowels are in complementary distribution with the sequence [Vr] occurring before a vowel. This is not true, however, in the case of /ɔ:/, e.g., *the law of the land* vs *the lore of the land*. It does not hold for special instances of /ɑ:/ either, e.g. *bah* (for further examples see Jassem 1983: 311). The 'long' vowels stand in the relation of complementary distribution with the succession [Vr] in those idiolects where a so-called 'instrusive' r is always inserted between /ɑ:/, /ɜ:/, /ɔ:/, and a following vowel. But though intrusive r may be heard with many RP speakers, this type of pronunciation is considered substandard by some linguists (Cohen, Gimson), especially if it is extended to all occurrences of the /ɑ:, ɜ:, ɔ:/-endings. and not just to several coined structures such as *Shah of Persia*.

Sommerstein (1977: 34) treats duration as the necessary phonetic invariant of the 'long' vowels and therefore regards it as a property accounting for the complex nature of /ɑ:/, /ɜ:/, and /ɔ:/. The position taken in *Modern Phonology* (1977: 34) is that length should be recognized as a phoneme. The static unchecked vowels composed of two phonemes have the same form as the diphthongs, with which they form a coherent class. The centring diphthongs in the analysis are interpreted as simple vowels + length phoneme. The final picture of the system is as follows:

basic vowels   non-syllabic vocoids: /j, w/
ɪ   ɜ   u   length phoneme: /:/
e   ə   ɔ
æ   ʌ   ɒ
     ɑ

/ɜ:/ and /ə/ are both central vowels. The quality of one frequently coincides with that of the other. The difference between unstressed /ɜ:/ and /ə/ is that of duration: /ɜ:/ is always longer than /ə/. *Canvas* and *converse* may be considered to constitute a near-minimal pair: /'kænvəs/ vs /'kɒnvɜ:s/. One may also assume that no qualitative opposition exists between /ɜ:/ and /ə/ in the pair *foreword* and *forward*, /fɔ:wɜ:d/ and /fɔ:wəd/. There is such a contrast between *forward* and the utterance *four words* — in the context *not three but four words* — where /ɜ:/ carries the secondary accent. *Foreword* and *foreward*, however, do not constitute a perfect minimal pair because /ə/ in *foreward* is slightly more retracted (back) than /ɜ:/ in *foreword*. Yet it is possible to find an ideal minimal pair the members of which are distinguished from each other merely by length: *concert* (= union) vs *concert* (= musical entertainment), i.e. /'kɒnsɜ:t/ vs /'kɒnsət/. Thus it is also possible to claim that the English vocalic system employs the quantitative contrast of /ɜ:/ and /ə/.

It can be clearly seen that the position of the /ɑ:/ phoneme disturbs the symmetry of the system. Though in this paper vowel quality is considered distinctive, thus primary, and length concomitant, it seems reasonable to diverge from the rule in this particular case. The divergence will not be inconsistent with the phonetic facts, as for the pair /ɑ:/ and /ʌ/ quantity has been found decisive. Even in its shortened form, i.e. before a closing fortis consonant /ɑ:/ is always longer than /ʌ/ whereas other long vowels when reduced may be of similar duration to short vowels, e.g. i:/i (Gimson 1970: 110). Furthermore, in the pronunciation of many RP speakers the words *march* and *much* sound very similar, the most conspicuous difference being that of length. One thus feels justified to use one symbol and additionally the length phoneme to differentiate the two vowels.

Eventually one comes up with symmetrical eight-vowel system:
basic vowels: non-syllabic vocoids: /j, w/
i   u   length phoneme: /:/
e   ə   ɔ
æ   a   ɒ

There are three heights and three front/back degress. A syllabic peak may be a simple one, i.e., it may consist of a basic vowel, or a complex nucleus, consisting of a basic vowel followed by a non-syllabic vocoid or the length phoneme.

To this, after Sommerstein (1977: 35), one may add a set of phonotactic restrictions for the system presented above:

basic vowels	zero	/:/	/j/	/w/
/ɪ/	yes	yes	yes	no
/e/	yes	no	yes	no
/æ/	yes	yes	no	no
/ə/	yes	yes	no	yes
/a/	yes	yes	yes	yes

/u/	yes	yes	no*	yes
/ɔ/	no	yes	yes	no
/ɒ/	yes	no	no	no

* It may be argued that in the word *ruin* there appears a monosyllabic diphthong /uj/ similar to /ɔj/ as in *coin*.

The first objection that may be raised against the analysis introducing the length phoneme is that the phonemic principles do not allow the recognition of a phoneme which is not realized by a phone. Moreover, the above conception is based upon the fallacy of regarding length as a reliable phonetic invariant of the habitually 'long' vowels. Measuring the length of the vowels reveals considerable overlapping of duration in the two groups, i.e. long and short vowels, conditioned by the nature of the following consonant. Furthermore, the recent phonetic changes to quantity (i.e., the process of lengthening the English 'short' vowels), which disturb the Jonesian systematization of the 'pure' vocalic phonemes based on the quantitative difference, also render the introduction of the length phoneme as the invariable and exclusive constituent of /ɑ:, ɜ:, ɔ:/ phonetically ungrounded. The length phoneme should be treated as an expedient artifice capable of solving the problem how to phonemicize the English 'long, pure' vowels in technical terms. It makes them complex and similar in form to the diphthongs, but, on the other hand, it ignores the phonetic facts.

Smith and Trager (Lass 1976: 7—9) suggest that /h/ might help in the interpretation of the 'long' vowels and centring diphthongs. Their arguments refer to complementary distribution. /h/ never occurs after one of the short vowels /i, e, æ, ʌ, u, ɒ/ with strong stress or before consonants. This means that it does not appear where /ə/ is found. Therefore /iə, uə, ɛə/ may be regarded as diphthongs with /h/. /h/ never occurs where lengthening does either. Thus for /ɑ:, ɜ:, ɔ:/ it may function as the length mark. As to phonetic similarity between /h/ and lengthening, the latter is defined as 'a voiced combination of a preceding vocalic sound with either the same or a progressively centralized tongue position' (Cohen 1965: 87).

The system of the English syllabic nuclei in the above interpretation is this:

ι		iy	
e		ey	
æ		ay	
a		ɔy	/uə/ has been omitted as in the light of the
ə		əw	phonetic changes described above it can be
ɒ		ɑw	interpreted as /ɔh/.
u		uw	
		ah	
(ɜh)		ɔh	
		ɔh	
(ih)	(iə)		
(æh)	(ɛə)		

The above analysis makes it possible to posit a small number of simple vowels in English, each of which can occur on its own or with one of /j, w, h/ (Smith and Trager use *y* in the transcription to represent the phoneme /j/) in a variety of diphthongs. The members of the right-hand column are treated as biphonematic units. If /ə/ is qualitatively identified at the phonemic level with the first element of /ɜh/, and /a/ with the initial element in /ɑh/, one arrives at the following system of the English vocalic phonemes:

   i   u

   e   ə   ɔ

   æ   a   ɒ

There are three degrees of height and three degrees of tongue advancement. A syllabic peak may be simple or complex, i.e., diphthongal — consisting of a simple vowel followed by /j, w/ or /h/.

3. DISTINCTIVE FEATURES

If a segment is represented by a bundle of simultaneous specified features, a certain categorization is imposed upon segments. This categorization makes it possible to capture generalizations pertinent to a given language. The problem which arises together with the notion of a distinctive feature is *how many possible values the feature should have at the phonemic level*. A single unit of the phonological description marking the presence of a feature in a segment, and not its absence, adequately names the phonological property but reveals nothing about the relation of the segment to the other segments of the system with regard to this particular feature. A 'singulary' (Sommerstein 1977: 110) feature, then, does not contribute to the recognition of some general patterns. Besides, 'singulary' features cannot be so formalized as to present certain general rules, e.g., morphophonemic, unless the principle of binarity is introduced, at least in the notation (see Sommerstein 1977: 110). Actually, though the features merely naming phonological properties have had long tradition behind them, binarity has always been tacitly assumed. A segment is frequently marked for the absence of the feature, which makes the feature binary in fact.

The superiority of the binarity hypothesis over the notion of 'singulary' features points to the direction of the analysis but does not solve the problem stated above. It seems convincing that distinctive features should be defined in terms of position on phonic axes, but the number of specifications does not have to be confined to two possibilities, viz. + and —. For certain phonetic dimensions a multivalued parameter appears to be the more desirable mode of description.

The vowel height in English constitutes the example where a multivalued feature specifies four degrees of openness more satisfactorily than a two-way distinction does. There being two features [high] and [low] and two possible specifications for each, there are only three degrees of aperture.

The original Jonesian vocalic system contains a four-way distinction. Thus it cannot be presented adequately in terms of binary features unless the feature [low] is replaced by [mid]:

```
+H        +H         -H        -H
-M        +M         -M        -M
close   half-close   open    half-open
```

	i:	i	e	æ	ʌ	ɑ:	ə	ə:	ɒ	ɔ:	u	u:
High	+	+	−	−	−	−	−	−	−	−	+	+
Mid	−	+	+	−	−	−	+	+	−	+	+	−
Back	−	−	−	−	+	+	+	+	+	+	+	+
Round	−	−	−	±	−	−	−	−	+	+	+	+

Sommerstein (1977: 102), however, points out that the above replacement should be treated as an arbitrary device, an artifice which serves to maintain the binarity hypothesis. Actually, it obscures the facts. On the basis of the above matrix one may argue that /i:/ and /æ/ form a natural class, as they are both [-mid], whereas /i:, i, e/ do not.

Ladefoged's (1975: 258) proposal is to give up the claim for binarity of the features, to introduce a single height feature and to distinguish four specifications on the axis:

```
i:   i   e   æ   ʌ   ɑ:   ə   ə:   ɒ   ɔ:   u   u:
4    3   2   1   1   1    2   2    1   2    3   4
```

The front-back dimension has been traditionally described by a ternary feature *front-central-back*. It is possible to classify the vowels of English in terms of the binary values +back/−back, but then another feature is required in the specification of the vowels, namely the degree of lip rounding. If /ə/ and /ɔ:/ are classified as back vowels (see the definition of the 'neutral position' in Chomsky, Halle 1968: 300), the height of which being 2, the distinction between them is preserved by the feature [± round], viz. /ə/ [− round], /ɔ:/ [+ round]. This, however, is not in accordance with the traditional approach to the English vowels which regards the lip rounding as a concomitant feature, for [+ back] are predictably [+ round] with the exception of /ɑ:/. If frontness and backness are treated as separate features, lip rounding will lose its distinctive character.

	i:	i	e	æ	ʌ	ɑ:	ə	ə:	ɒ	ɔ:	u	u:
High	4	3	2	1	1	1	2	2	1	2	3	4
Front	+	+	+	+	−	−	−	−	−	−	−	−
Back	−	−	−	−	−	+	−	−	+	+	+	+

(Jones' system)

The phonetic facts, however, point to the two-way distinction in the front-back dimension. Three traditionally separate regions, front-central-back, are no longer as distinctly apart in the phonetic space as they used to be.

Henton's (1983) results may supply the evidence: /i, e, æ, ɔ:, u/ have become centralized whereas /ʌ/ and /ɑ:/ have been retracted (Fig. 1). If the values of F_2 for /ʌ/ and /u/ (a definite back vowel) are compared (1050, 1103 respectively) it appears that there is no obstacle to classifying both sounds as back vowels. /ə:/, though slightly fronted, has preserved its central position, the one exactly half-way between the front centralized and the back fronted vowels. The feature [back], however, has been traditionally defined (SPE) with reference to the neutral position, which is that of a front vowel. Thus, accordingly, the central vowel /ə:/ is classified as [+ back].

In the matrix employing the multivalued feature of height as well as two binary features [± back] and [± round] /ʌ/ and /ɑ:/ have the identical specifications for all the features. These two phonemes, though phonetically related, belong to the two sets already discussed in terms of the different kind of syllables in which they can occur. Thus the feature [± checked], which specifies phonologically determined sets of vowels, is not definable in physiological terms like the features [back], [high], and [round] are. Simply there is no physical measurement corresponding to that distributional property. This means that the condition of phonetic specifiability is not fulfilled.

Of course, the same problem arises with the major-class features such as syllabicity and consonantality to which the requirement does not apply either. The difficulty is surmounted if the two features are abstracted from the basic feature system and treated as 'cover features' or 'labels' for groups of phonological properties (Ladefoged 1975: 96).

In the case of [± checked] division attempts have been made to relate this distributional criterion to some determinable articulatory or acoustic correlates. Chomsky and Halle associated the difference of quality between the two groups of vowels with tension involving 'considerable muscular effort' resulting in 'a greater deviation from the neutral or rest position' (Sommerstein 1977: 105, 106). Actually, the English lax ([+ checked]) vowels are shorther, lower and more centralized than their tense counterparts. From the acoustic point of view lax vowels have been found to reveal:

> a more even intensity distribution over the frequency range [...], more vaguely defined formant outlines, less regular structure of the formants [...], a higher level of disturbance, generally a blurring of the features that serve to emphasize the individuality of particular vowels (Sommerstein 1977: 105).

It seems possible, then, to introduce the feature [± tense] to preserve the opposition between the two sets of the English vowels.

	i:	i	e	æ	ʌ	ɑ:	ə	ə:	ɒ	ɔ:	u	u:
High	4	3	2	1	1	1	2	2	1	2	3	4
Back	−	−	−	−	+	+	+	+	+	+	+	+
Round	−	−	−	−	−	−	−	−	+	+	+	+
Tense	+	−	−	−	−	+	−	+	−	+	−	+

The binary feature [± tense] also solves the problem of /ɔ/ and /ɔ:/, which have the same specifications for all the other features. Now they become differentiated. (Since /ə/ constitutes a special case, the distributional division into checked and unchecked vowels does not apply to the above pair of the vowels).

Ladefoged (1975: 73), however, maintains that the phonetic differences between the two groups are not simply a matter of tension. Therefore the terms lax/tense if used should be regarded merely as 'labels'.

Two major-class labels, two tongue body features, rounding and tenseness constitute the basic feature system which can adequately describe the vocalic phonemes of English. Of these features height is a multivalued one with the specification represented by an integer. All the other features are binary, i.e. capable of two specifications. A complex segment has for some features a complex specification, i.e. a sequence of two simple specifications. Daniel Jones' system:

	i:	i	e	æ	ʌ	ɑ:	ɔ	ə	ə:	ɒ	ɔ:	u	u:	ei	ai	ɔi	au	ou	iə	ɛə	ɔə	uə
Syll.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Cons.	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−
High	4	3	2	1	1	1	2	2	1	2	3	4	23	13	23	13	23	32	22	22	32
Back	−	−	−	−	+	+	+	+	+	+	+	−	+	−	+	+	−	+	+	+
Round	−	−	−	−	−	−	+	+	+	−	−	+	−	+	−	+	−	+	+	+
Tense	+	−	−	−	−	+	−	+	−	+	−	+	+	+	+	+	+	+	+	+

Gimson's vocalic system looks almost identical. The only difference involves the change in the diphthong /ou/ into /əu/.

	ou	əu
Syll.	+	+
Cons.	−	−
High	23	23
Back	+	+
Round	+	−+
Tense	+	+

(Of course Gimson's vocalic system contains one phoneme less. i.e./ɔə/.)

The features [high] and [back] are also used with reference to consonants. Actually, palatal and velar consonants have the same place of articulation as high front vowels and high back vowels. It is also possible to use these features in the description of non-syllabic vocoids. Thus /j/ is [4 height] and [− back], whereas /w/ is [4 height] and [+ back]. If the diphthongs are treated as the monophthongs + /j/ or /w/, then a complex specification for height will change:

ej	aj	ɔj	əw	aw
24	14	14	24	14

The final picture of the English vowel system resulting from the phonetic changes described above is this:

	i	e	æ	ʌ	ɑ:	ə	ə:	ɒ	ɔ:	u
Syll.	+	+	+	+	+	+	+	+	+	+
Cons.	−	−	−	−	−	−	−	−	−	−
High	3	2	1	1	1	2	2	1	2	3
Back	−	−	−	−	+	+	+	+	+	+
Round	−	−	−	−	−	−	−	+	+	+
Tense	−	−	−	−	+	+	+	−	+	+

In the system presented above only three degrees of openness are contrastive. Thus it is possible to supersede the quaternary feature of height by a pair of two binary features: [high] and [low]. English syllabic peaks:

	i	e	æ	ʌ	ɑ:	ə	ə:	ɒ	ɔ:	u	aj	ej	ɔj	əw	aw	ij	uw
Syll.	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Cons.	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−	−
High	+	−	−	−	−	−	−	−	−	+	−	+	−	+	−	+	+
Low	−	−	+	+	+	−	−	+	−	−	+	−	+	−	+	−	−
Back	−	−	−	+	+	+	+	+	+	+	−	−	+	−	+	−	+
Round	−	−	−	−	−	−	−	+	+	+	−	−	+	−	+	−	+
Tense	−	−	−	−	+	−	+	−	+	+	+	+	+	+	+	+	+

The essential change in the English vocalic system from the point of view of the distinctive features is that it has become possible to posit a three-way distinction in the degree of openness at the classificatory level. The three-height system can be adequately described in accordance with the claim that at the level of the phonological analysis all features are binary.

REFERENCES

Barber, Charles (1964), *Linguistic Change in Present-day English*, Edinburgh: Oliver and Boyd.
Bauer, Laurie (1979), "The Second Great Vowel Shift?" *Journal of the International Phonetic Association*, 9, 57−65.
Bauer, Laurie (1985), "Tracing Phonetic Changes in the Received Pronunciation of British English", *Journal of Phonetics*, 13, 61−81.
Chomsky, Noam, Morris Halle (1968), *The Sound Pattern of English*, New York: Harper and Row, Publishers.
Cohen, Antonie (1965), *The Phonemes of English*, The Hague: Martinus Nijhoff.
Gimson, A. C. (1970), *An Introduction to the Pronunciation of English*, London: Arnold.
Henton, Caroline (1983), "Changes in the Vowels of Received Pronunciation", *Journal of Phonetics*, 11, 353−371.
Jassem, Wiktor (1983), *The Phonology of Modern English*, Warszawa: PWN.
Jassem, Wiktor (1983a), "Computer-Aided Classification of English Monophthongs", *Quantitative Linguistics*, 19, 1−27.

Jones, Daniel (1972), *An Outline of English Phonetics*, Cambridge: Heffer.
Jones, Daniel (1976), *The Phoneme. Its Nature and Use*, Cambridge University Press.
Ladefoged, Peter (1975), *A Course in Phonetics*, New York: Harcourt, Brace, Jovanovich.
Lass, Roger (1976), *English Phonology and Phonological Theory*, Cambridge University Press.
Radecki, T. (1980), *Retrieval System Models*, Wrocław: Wydawnictwo Politechniki Wrocławskiej.
Sommerstein, A. H. (1977), *Modern Phonology*, London: Arnold.
Wells, J. C. (1982), *Accents of English*, London: Cambridge University Press.
Wells, J. C., Greta Colson (1978), *Practical Phonetics*, London: Pitman.
Wełna, Jerzy (1978), *A Diachronic Grammar of English*, Warszawa: PWN.

PRZEMYSŁAW PAWELEC

CYCLIC PHONOLOGY AND THE INVENTORY OF MORPHEME-INITIAL CONSONANT CLUSTERS IN POLISH AND ENGLISH*

1. INTRODUCTION

This paper sets out to establish the inventory of underlying morpheme-initial consonant clusters in Polish and English. The discussion reveals that while in English the inventories of clusters at two levels are the same, in Polish there are fewer clusters at the underlying level than are attested on the surface. Although, due to shortage of space, no attempt is made here to describe the structure of the clusters, our analysis clearly shows that in Polish morpheme structure conditions, when formulated, must be much more restrictive than the surface phonetic data might suggest. The problem of formulating such conditions is addressed in a separate paper (Pawelec, forthcoming).

The theoretical framework of this paper is that of cyclic phonology, whose basic assumptions are outlined in section 2. In section 3 some relevant facts from English and Polish phonology are presented. The remaining sections of the paper deal with the subject proper, i.e. with the establishment of the lists of underlying clusters. The lists are presented in sections 9 and 10, while conclusions are summed up in section 11.

2. CYCLIC PHONOLOGY

Cyclic phonology is a new phonological paradigm whose development has been marked by the works of Kean (1974), Mascaró (1976), Halle (1978), Rubach (1981), Kiparsky (1982), and Rubach (1984a). The most important

---

tenets of cyclic phonology are the following (I repeat after Rubach (1981)):

(i) Phonological rules fall into two classes: cyclic rules and postcyclic rules. The two classes form distinct sets, i.e. cyclic rules and postcyclic rules cannot be interspersed in a derivation.

(ii) Cyclic rules precede postcyclic rules as a bloc. Cyclic rules in turn are preceded by allomorphy and word formation rules.

(iii) Cyclic rules apply in accordance with the principle of Strict Cyclicity, which Rubach (1981) quotes after Halle (1978):

(1)   The Strict Cyclicity Principle

"A cyclic rule applies properly on cycle j only if either (a) or (b) is satisfied:

(a) R makes specific use of information, part of which is available on a prior pass through the cyclic rules, and part of which becomes first available on cycle j. There are three separate cases subsumed under (a). R refers specifically to some A or B in:

    (i) $[_j XAY \ldots [_{j-1} \ldots B \ldots]Z]$;

    (ii) $[_j Z[_{j-1} \ldots B \ldots]XAY]$;

    (iii) $[_j X[_{j-1} \ldots A \ldots]Y[_{j-1} \ldots B \ldots]Z]$;

(b) R makes specific use of information assigned on cycle j by a rule applying before R".

(iv) A cyclic processing of a given structure proceeds in the order as dictated by internal bracketing. The bracketing mirrors the application of word formation rules (Rubach 1981: 19—20).

3. DESCRIPTIVE BACKGROUND

The inventory of underlying segments in English which we assume in this paper is that of Chomsky and Halle (1968) with later modifications which include, most importantly, changes in the vowel system introduced in Halle (1977) and the elimination of rounded velars $//k^w \ g^w \ x^w //$ as well as $//x//$ from the inventory of underlying consonants (cf Gussmann 1978).

As to the system of rules, which we assume after Rubach (1981), only two will be relevant to our discussion:

(2)   *j*-insertion $\emptyset \rightarrow j \ / \quad C - \begin{bmatrix} +syll \\ +high \\ +round \end{bmatrix}$

Rule (2) is responsible for the insertion of /j/ in e.g. *titular* vs *title*, *angular* vs *angle*, *tabular* vs *table*, etc.

(3)   *j*-preposing $\emptyset \rightarrow j \ / - \bar{\Lambda}$

Rule (3) inserts /j/ before tense /ā/ in e.g. *studious*, *assume*, *reduce*, *punitive*, etc. The major difference between the two rules, barring different environment, is that *j*-insertion (2) is a cyclic and *j*-preposing (3) is a postcyclic rule.

The interpretation of the structure of Polish which we assume in this paper is also taken from Rubach (1981). The system of underlying consonants contains both what were traditionally called "plain" or "hard" as well as "palatal" or "soft" consonants and it is as follows: //m n ń l ł r p b t d k g f v s z š ž ś ź x c ʒ č ǯ ć ʒ́//[1]. The system of underlying vowels includes, among others, two high lax (i.e. nontense) vowels (henceforth: yers): //ĭ// and //ɨ̆//. As has been amply motivated in Gussmann (1980) and Rubach (1981), they are necessary to distinguish those instances of surface *e*'s, *i*'s and *ɨ*'s which alternate with zero or with each other from those which do not. Their surface manifestations are governed by two cyclic rules: Lower (6) and D. I. Tensing (5) and two postcyclic rules: Vowel Spell-out (21) and Yer Deletion (12). As to the underlying semivowels there are two: //j// and //w//. It should be noted, however, that in the majority of cases phonetic [w]'s are derived from the underlying velarized lateral //ł// via the context-free rule of Lateral Vocalization (18)[2].

The following are the cyclic rules of Polish (for the sake of simplicity most of them are given schematically):

(4)   Fronting $ɨ \ ɨ̄ \rightarrow i \ ī \ / \quad [-\text{anter}] -$
           Condition: if /x/ then $\neq$ inflect. ending

Rule (4) turns //ɨ̆// into [i] and //ɨ̄// into [ī]. It accounts, e.g., for the occurrence of the nominal feminine gen. sg. ending //i// in two forms: [ī] and [i], as in *mat+a* 'mat' — *mat+y* vs *drog+a* 'road' — *drog+i*.

(5)   D.I. Tensing $ĭ \ ɨ̆ \rightarrow ii \ / - C_o \ aj]DI$

(6)   Lower $ĭ \ ɨ̆ \rightarrow e\vartheta \ / - C_o \begin{Bmatrix} ĭ \\ ɨ̆ \end{Bmatrix}$

Rule (5) says that yers are tensed to /i ɨ/ in Derived Imperfectives, i.e., before the suffix *-aj*, for example *po+pch+nǫ+č*[-px-] 'push' — *po+pych+aj+ǫ*[-pix-] 'they push'. They surface as [e] is they are followed by a yer in the next syllable. According to rule (6) //ĭ// changes directly to [e] and //ɨ̆// to /ɤ/, the mid back unrounded vowel, which is later changed to /e/ by a postcyclic Vowel Spell-out rule (21).

---

[1] Underlying representations are given in double slashes, intermediate representations appear in single slashes and phonetic forms are enclosed in square brackets. For Polish our transcription differs from the one used by IPA in the following points:

here:	ń	ś	ź	c	ʒ	č	ž	ć	ʒ́
IPA:	ɲ	ɕ	ʑ	ts	dz	tš	dž	tɕ	dʑ

This particular kind of transcription, known as the 'Slavic' version, has been adopted here for the sake of the clarity of description. In a paper on consonant clusters using diagraphs for affricates might be misleading, e.g. in *mszczę* 'I revenge' the initial cluster consists of three rather than four consonants, which is better shown by [mšč-] than by [mštš-].

[2] As phonetic [w] is almost always assumed to result from the application of Lat. Voc. (18) to underlying //ł//, in the present paper all surface phonetic clusters of consonants and [w] will be treated as clusters of consonants and //ł//.

(7) Ant. Pal. $\begin{Bmatrix} s \ z \\ t \ d \\ n \ l \ r \end{Bmatrix} \rightarrow \begin{Bmatrix} ś \ ź \\ ć \ ʒ́ \\ ń \ l \ ř \end{Bmatrix} / - \begin{bmatrix} +\text{syll} \\ -\text{back} \end{bmatrix}$

Rule (7) is responsible for the changes as in *głos* 'voice' vs. *głos+ik* [-ś +ik] (dimin.), *kot* 'cat' vs *koc+ie* [-ć+e] (loc.), etc. It also changes //r// to //ř//, the prepalatal sonorant, which is further changed to [ž] or [r] by r-spell-out rule (23).

(8) Lab./vel. $ø \rightarrow j / [-\text{coron}] - e$

Rule (7) accounts for e.g. different forms in which the loc. desinence //e// appears on the surface. It is [e] after coronals, e.g. *nos* 'nose' -*nos+ie* [-ś+e] (loc.), and [je] after noncoronals, e.g. *słup* 'pole' – *słup+ie* [-p'+je] (loc.), etc.

(9) 1st Velar $k \ g \ x \rightarrow č \ ǯ \ š / - \begin{bmatrix} -\text{cons} \\ -\text{back} \end{bmatrix}$

(10) Spirantization $ǯ \rightarrow ž / [+\text{sonor}] -$

Rule (9) turns underlying //k g x// into /č ǯ š/. Spirantization affects the /ǯ/ derived via First Velar Palatalization (9) and turns it into /ž/.

(11) Iotation $\begin{Bmatrix} ś \ ź \\ ć \ ʒ́ \end{Bmatrix} - \begin{bmatrix} š \ ž \\ c \ z \\ \langle č \ ǯ \rangle \end{bmatrix} / \langle [+\text{strident}] \rangle - j$

Rule (11) applies to the outputs of Ant. Pal. (7). It performs three kinds of operations: (i) prepalatal fricatives /ś ź/ are changed to postalveolar affricates /š ž/, (ii) prepalatal affricates are turned into postalveolar affricates /č ǯ/ if preceded by /s/ or /z/, (iii) otherwise they change to alveolar affricates /c ʒ/.

(12) j-deletion $j \rightarrow ø / \begin{matrix} [+\text{coron}] - \\ - \begin{Bmatrix} \# \\ C \end{Bmatrix} \end{matrix}$

Rule (12) is responsible for the absence of [j] at the phonetic level in some words in which Iotation (11) may be shown to have applied, e.g. *czyst+y* 'clean' – *czyśc+i* [-śc+i] 'he cleans' – *czyszcz+ą* [šč+õw̃] 'they clean'.

The application of the last two rules is limited to verbal system:

(13) j-insertion $ø \rightarrow j / - V \begin{bmatrix} V \\ -\text{tense} \end{bmatrix}_{]V}$

(14) V-deletion $[+\text{syll}] \rightarrow ø / - [+\text{syll}]_{]V}$

Rule (13) says that /j/ is inserted before any vowel followed by a lax vowel.
Rule (14) says that any vowel is deleted before another vowel.

The following postcyclic rules will also be relevant to our discussion:

(15) Yer Deletion $ĭ \ ɨ̆ \rightarrow ø$

Rule (15) says that the yers which have not been vocalized to /i/, /ɨ/, or /e/ (or /o/) by rules (5) and (6) delete.

(16) Surf. Pal. $[+\text{cons}] \rightarrow \begin{bmatrix} +\text{high} \\ -\text{back} \end{bmatrix} / - ([-\text{seg}]) \begin{Bmatrix} i \\ j \end{Bmatrix}$

Rule (16) palatalizes any consonant inside words and across word boundaries. It yields, e.g. [p'] in *pisk* 'scream', [č'] in *Chile*, etc.

(17) Retraction $i \rightarrow ɨ / \begin{bmatrix} +\text{coron} \\ +\text{back} \\ -\text{later} \end{bmatrix} -$

Rule (17) turns /i/ into /ɨ/. In the examples that follow the underlying //i// has palatalized the preceding consonant and later it has been changed to /ɨ/ by rule (17): *lek* 'medicine' – *lecz+y+ć* [-č+ɨ] 'to treat', *Polak* 'Pole' – *Polac+y* (pl.), etc.

(18) Lateral Vocalization $ł \rightarrow w$

Rule (18) states that all //ł//'s which have not been affected by Ant. Pal. (7) are vocalized to /w/.

(19) Strident Assimil. $s \ z \rightarrow \begin{Bmatrix} ś \ ź / - ć \ ź \\ š \ ž / - č \ ǯ \end{Bmatrix}$

Rule (19) can be seen operating in e.g. *mieśc+ie* [-śc] 'city' (loc.) *mieszcz+ani+n* [-šč-] 'citizen' vs *miast+o* [-st-] 'city' (nom.).

(20) Obstruent Unvoicing $[+\text{obstr}] \rightarrow [-\text{voiced}] / - \begin{Bmatrix} [-\text{voiced}] \\ \| \end{Bmatrix}$

Rule (20) accounts for alternations: *żaba*[3] 'frog' – *żabka* [-pk-] (dimin.), *wozu* 'cart' – *wózka* [-sk-] (dimin.: both gen.), *wóz* [-s] (nom.), etc.

(21) V-Spell-out $ɤ \rightarrow \begin{Bmatrix} [+\text{round}] / - CC \# \\ [-\text{back}] \end{Bmatrix}$

Rule (21) derives /o/ from /ɤ/ before a consonant cluster followed by a word boundary. In all other contexts /ɤ/ is changed to /e/.

(22) Noncont. Dep. $ć \ ʒ́ \ ń \rightarrow t \ d \ n / - \begin{bmatrix} +\text{cons} \\ +\text{coron} \\ +\text{sonor} \end{bmatrix}$

Rule (22) accounts for the alternations: *przechodzień* 'passer-by' – *przechodnia* (gen.), *dzień* 'day' – *dzienny* (Adj.), etc.

(23) r-spell-out $ř \rightarrow \begin{Bmatrix} r / - C \\ ž \end{Bmatrix}$

Rule (23) aplies to the outputs of Ant. Pal. (7). It is responsible for the surfacing of /ř/ as [r] before consonants and as [ž] elsewhere.

---

[3] When not relevant morpheme boundaries are omitted.

(24) Progr. Unvoicing $\begin{bmatrix} +obstr \\ +cont \end{bmatrix} \rightarrow [-voiced] \,/\, [-voiced] \left(\begin{bmatrix} +cons \\ +sonor \end{bmatrix} \right)$ —

Rule (24) is responsible for the devoicing of fricatives after voiceless segments, e.g. *listewek* 'board' (dimin., gen. pl.) — *listwa* [-tf-] (nom.), *bitwa* [-tf-] 'battle' — *bitewny* (Adj.), etc. The rule is also applicable if a liquid or a nasal intervene between the two segments.

4. THE INVENTORIES OF SURFACE PHONETIC CLUSTERS IN POLISH AND ENGLISH

In order to establish the inventory of underlying morpheme-initial consonant clusters in Polish and English we shall begin with listing the attested surface phonetic clusters in the two languages. The following sources have been used in the compilation of the two lists: for Polish: Bargiełówna (1950), Rubach (1971), Sawicka (1974), and the dictionaries: Jodłowski and Taszycki (1980[10]). Karaś and Madejowa (1977). and Stanisławski (1980[5]): for English: Cygan (1971). Gimson (1976) and the English Pronouncing Dictionary (Jones 1980[14]). Among these Bargiełówna (1950) is a unique position in that it is the only source which marks morpheme-boundaries within the clusters. Bargiełówna (1950) is also the only source which gives the list of word-medial clusters in Polish. Consequently, our list in (25) contains all morpheme-initial consonant clusters in Polish. It is different from the list of word-initial clusters in Bargiełówna (1950) in that it leaves out all polymorphemic word-initial clusters and at the same time it includes these morpheme-initial clusters which are attested word medially only.[4]

The following is the list of surface phonetic morpheme-initial consonant clusters in Polish. For the purposes of further presentation it is divided into three parts: (a), (b), and (c). The reasons for this division will become clear later.

---

[4] For reference let us note two other differences between our list and that of Bargiełówna (1950):
(i) The list in Bargiełówna (1950) contains five clusters which are attested only in rapid speech pronunciation of the following words: [ʒv'-] in *drzwi* 'door', [čp'-] in *trzpiot* 'flibbertigibbet' and *trzpień* 'pivot', [čm'-] in *trzmiel* 'bumble-bee', [čn-] in *trznadel* 'bunting', and [sś-] in *ssie* 'he sucks'. As we are going to come at the inventory of underlying rather than surface phonetic clusters, the least abstract level to start with is that of Generalized Phonetic Representation, which reflects the facts of slow, monitored and articulate speech (cf Rubach 1977, 1982). In slow speech the above given words contain the following clusters, which are included in our list in (25): [džv'-], [tšp'-], [tšm'-], [tšn-], and [sś-].
(ii) The list in (25) contains also the following clusters which are not found in Bargiełówna (1950): [cl-], because it appears in *cle* 'duty' (loc.), [ʒg-] in *dżgać* 'to stab', [brn-] in *brnąć* 'to flounder', [škf-] in *szkwal* 'squall', [žʒbl-] in *źdźble* 'stalk' (loc.), [brń-] in *brnie* 'he flounders', [zr-] in *zraz* 'lobe', [zb-] in *zbyt* 'too', [cf'-] in *ćwibak* 'plum-cake', [ćf-] in *ćwierć* 'quarter', [lž-] in *lże* 'he lies', [xšt-] in *chrztu* 'baptism' (gen.), and [-mst-] in *ze + mst + a* 'revenge'. The last item is the only morpheme-initial cluster in Polish which is attested word-medially only.

---

(25)(a)(i) CC-clusters

mn- mł- mž- mš- mr- ml- mń- mk- mx-
rv- rd- rt- rʒ- rž-
lv- ln- lń- lž- lg-
łb- łz- łg- łk- łž-

(ii) CCC-clusters

mdł- mdl- mst- mšč- mść- mgł- mgl- mgń- lšń-

(b)(i) CC-clusters

bz- bł- bž- br- bl- bź-
pt- ps- pn- pł- pš- pr- pl- pś- pń- px-
vd- vz- vn- vł- vž- vr- vl- vź- vʒ́-
ft- fc- fč- fć- fr- fl- fś-
db- dm- dv- dn- dł- dž- dr- dl- dń-
tf- tn- tł- tš- tr- tl- tń- tk- tx-
zm- zv- zd- zn- zł- zr- zg-
sp- sm- sf- st- ss- sc- sn- sł- sr- sl- sk- sx- sś-
ʒb- ʒv-
cm- cf- cn- cł- cl-
žm- žv- žn- žł- žr- žń- žg-
šp- šm- šf- št- šl- šn- šč- šr- šl- šk-
šš-
čm- čf- čt- čł- čč- čć- čk-
źr- źl- źʒ́-
śr- śl- śċ- śń-
ʒ́g-
ćp- ćm- ćf-
gb- gm- gv- gd- gz- gn- gł- gž- gr- gl- gź- gʒ́- gń-
kp- km- kf- kt- ks- kn- kł- kš- kr- kl- kś- kć- kń-
xm- xf- xc- xł- xš- xr- xl- xć-

(ii) CCC-clusters

bzd- bžd- bžʒ́- bźʒ́- brn- brń-
płć- pšt- pšč- plf- pxł- pxl-
vbr- vzr-
fsp- fst- fšč- fść-
drg- drv- drž-
trf- tkl- tšn- tšć-
zbr- zvł- zdr- zgž- zgr- zgl-
spr- stš- str- smr- skf- skn- skš- skr- sxl-
ckl- ckń-
špr- sčf- škf- škł- škl-
gzl- gžm- grd-
kšt- krf- krt- krn-

xšt- xšč- xšć-
(iii) CCCC-clusters
pstr- pstš-
vzgl-
fstr- fskš-
źʒbł- źʒbl-
(c)(i) CC-clusters
mg'- dm'- dv'- tf'- zm'- zv'- zg'- sp'- sf'- sk'- cf'- łb'-
žb'- žm'- žv'- šp'- šm'- šf'- šk'- rv'- lv'- śp'- śm'- śf'-
ʒv'- ćm'- ćf'- gm'- gv'- kp'- km'- kf'- xm'- xf'-
(ii) CCC-clusters
bžm'- brv'- drv'- džv'- tkf'- tšm'- tšp'- skf'- gžb'- gžm'- krf'-

Below we present the list of morpheme-initial consonant clusters in
English, which is by and large the same as the list of initial syllable margins in
Cygan (1971). The only differences are: the absence of clusters with the
semivowel [w], as not relevant to our discussion, and the presence of the cluster
[skl-], which Cygan (1971) leaves out as attested in one word only, namely
sclerosis. It must also be noted that the list in (25) contains only these clusters
which are attested word-initially. This is because none of the sources used (and
none of the sources that I have heard of) marks morpheme-boundaries within
word-medial consonant clusters in English.

The following is the list of word-initial monomorphemic consonant clusters
in English:
(26)(i) CC-clusters

bl-			gl-	pl-		kl-
br-		dr-	gr-	pr-	tr-	kr-
fl-		sl-				
fr-	θr-		šr-	sm-	sn-	
				sp-	st-	sk-

(ii) CCC-clusters

spl-	skl-
spr-	str- skr-

5. THE RULE OF SURFACE PALATALIZATION AND ITS EFFECTS

The list in (25) presents the inventory of the attested surface phonetic
morpheme-initial consonant clusters in Polish. As the first step in our analysis
let us formulate the following two hypotheses:
(A) All the clusters in (25) are present at the underlying level.
(B) There are no underlying morpheme-initial clusters of consonants which
would not be found in the list in (25).

We observe that if both (A) and (B) are correct, then the list in (25) is

identical with the inventory of underlying morpheme-initial consonant clusters
in Polish. We are going to show that this view is untenable.

Let us observe that not all consonants forming the clusters in (25) belong to
the inventory of underlying segments in Polish. Specifically, all consonants
with the secondary palatalization (i.e. [b' p' v' f' g' k' m']) are derived from their
nonpalatalized counterparts (i.e. /b p v f g k m/, respectively) via the rule of
Surface Palatalization (16). The rule operates before /i/ and /j/. Here is
a sample derivation:

(27)	dwa	dwie	swada	sfinks	zgaga	zgiełk	
UR	dv+a	dv+e	sfad+a	sfinks	zgag+a	zgiełk	
—		dv+je	—	—	—	—	Lab./vel. (8)
—		—	—	—	—	zgjewk	Lat. Voc. (18)
—		dv'+je	—	sf'inks	—	zg'jewk[3]	Surf. Pal. (16)

The words: *sfinks* 'sphinx' and *dwie* 'two' (fem.) (also: *zgiełk* 'tumult') represent
the application of Surf. Pal. (16) before /i/ and /j/, respectively. The rule does
not apply in *dwa* 'two', *swada* 'glibness', and *zgaga* 'heartburn', i.e. when the
same consonants stand before /a/.

Now recall that we have divided the list in (25) into three parts: (a), (b), and
(c). We observe that part (c) of the list in (25) contains all morpheme-initial
clusters in which secondarily palatalized consonants are found. As these
consonants are always derived from their nonpalatalized counterparts we
conclude that the clusters in (25c) cannot be present at the underlying level.
Consequently, hypothesis (A) must be rejected. The question we must ask now
is: what is the underlying form of the clusters in (25c) then? The answer seems
obvious: the same as on the surface except for the last segment, which must be
a consonant without the secondary palatalization. The next question arises at
this point: does the list in (25) contain all these clusters which are different
from the clusters in (25c) only in that their last segment is not secondarily
palatalized? The answer must be in the negative. Let us observe that the
following clusters are not found in the list in (25):
(28)(i) CC-clusters
mg- zb- šp- śm- śr- ʒv-
(ii) CCC-clusters
bžm- brv- džv- tkf- tšm- gžb-
Consequently, hypothesis (B) must also be rejected.

Our analysis of the clusters containing secondarily palatalized consonants
has shown that the list in (25) is not identical with the inventory of underlying
morpheme-initial consonant clusters in Polish. Let us notice, however, that we
do not have to abandon the idea of using the list in (25) altogether. We

---

[3] Some native speakers will also delete /j/. The optional character of this rule accounts for the
fact that two kinds of pronunciation, both acceptable, are current in contemporary Polish:
[mg'jew] and [mg'ew], [v'jeś] and [v'eś], [zg'jewk] and [zg'ewk], etc.

propose that the hypotheses
(A) and (B) be replaced with the following two principles:
(A') Every cluster from the list in (25) is present at the underlying level unless proved otherwise.
(B') Every underlying morpheme-initial consonant cluster can also be found in the list in (25) unless proved otherwise.

The principles (A') and (B') allow us to treat the list in (25) as the inventory of underlying morpheme-initial consonant clusters in Polish, providing that we eliminate from it (or add to it) all items which our analysis shows to be non-existent (or, existent, respectively) at the underlying level.

We end this section with two conclusions: first, the clusters in (25c) must be excluded from the list in (25); second, the clusters in (28) must be added to it.

6. EFFECTS OF ANTERIOR PALATALIZATION

From the comparison of the lists in (25c) and in (28) we can see that the number of items in our list in (25) has been considerably reduced. Before any attempt can be made to generalize about their structure, however, let us point to an important fact which is crucial for our further analysis. Namely, some of the clusters in (25) occur in a number of different words (e.g. [pr-] in *proszę* 'please', *praca* 'work', *prać* 'to wash', *pryskać* 'to splash', *prowadzić* 'to lead', etc.), whereas others are found in one or two words only (e.g. [rd-] only in *rdest* 'water-pepper'). The list in (25) does not reflect this difference.

The following is the list of words which contain some of the clusters in (25). The list is complete in the sense that for every cluster it contains it gives all words in which this cluster occurs. At the same time it does not enumerate, for obvious reasons, all derivatives of a given word.

(29)(i)   CC-clusters

mż- mżyć 'to drizzle',
    mrzonka 'day-dream',
    mrzeć 'to die'
mš- msza 'mass', mszyca
    'aphis', mszysty 'mossy'
mx- mchu 'moss' (gen.)
mk- mk+ną+ć 'to dash along',
    za+mk+ną+ć 'to shut'
mg- mgieł ([mg']) 'mist' (gen. pl.)
lv- lwa 'lion' (gen.),
    lwie ([lv'], loc.)
ln- lnu 'flax' (gen.)
lń- lnie 'flax' (loc.)
lg- lg+ną+ć 'to stick'
lž- lžyć 'to insult',

lžej 'light' (Adv., comp.)
lb- lba 'pate' (gen.)
    lbie ([lb'], loc.)
dnie 'bottom' (loc.)
lz- lza 'tear'
lž- lže 'he lies'
lg- lgać 'to lie'
lk- lkać 'to sob'
rv- rwać 'to tear', rwie
    ([rv']) 'he tears'
    rwetes 'hubbub'
rd- rdest 'water-pepper'
rt- rtęć 'mercury'
rž- ržeć 'to neigh',
    ržysko 'stubble',

rž+ną+ć 'to cut'
r3- rdza 'rust'
pń- pnia 'trunk' (gen.)
px- pchać 'to push'
fš- wsi 'village' (gen.)
dn- dno 'bottom'
dń- dnia 'day' (gen.)
tn- tną 'they cut'
tń- tnie 'he cuts'
ss- ssać 'to suck'
sś- ssie 'he sucks'
cn- cnota 'virtue'
cl- cło 'duty'

cl- cle 'duty' (loc.)
žn- žną 'they reap',
    rznąć 'to saw'
žń- žnie 'he reaps'
žr- žreć 'to devour'
čć- czci 'worship' gen.
33- dżdżownica 'worm',
    dżdżu 'rain' (gen.)
žl- źle 'badly'
ćm'- ćma 'moth',
    ćmić ([ćm]) 'to dim'
gž- gzić się 'to be in heat'
xc- chce 'he wants'
xć- chcieć 'to want'

(ii) CCC-clusters

mdł- mdły 'sickly'
mdl- mdlić 'to sicken'
mst- ze+mst+a 'revenge'
mšč- mszczą 'they revenge'
mść- mścisz 'you revenge'
mgł- mgła 'mist'
mgl- mgle 'mist' (loc.)
mgń- mgnienie 'twinkling'
lśń- lśnić 'to glitter'
brv- brwi ([brv']) 'eyebrow'
brn- brnąć 'to flounder'
brń- brnie 'he flounders'

płć- płci 'sex' (gen.)
pxł- pchła 'flea'
pxl- pchle 'flea' (loc.)
drg- drgać 'to vibrate'
drž- držeć 'to tremble'
škł- szkło 'glass'
škl- szkle 'glass' (loc.)
krf- krwawy 'bloody'
    (krwi [krf] 'blood' (gen.))
xšt- chrztu 'baptism' (gen.)
xšč- chrzczą 'they baptize'
xšč- chrzcisz 'you baptize'

(iii) CCCC-clusters

žзbł- źdźbło 'stalk'
žзbl- źdźble 'stalk' (loc.)

pstr- pstry 'motley'
pstš- pstrzyć 'to mottle'

Now, bearing in mind that the words in (29) are the only occurrences of the clusters with which they are paired one can easily foresee our strategy. If we can show that the only word in which a cluster is attested, as e.g. [mk-] in *mknąć* 'to dash along', does not have this cluster at the underlying level, we will be justified in eliminating it from our inventory.

Recall that the list in (25) has [lń-], [dń-], [tń-], sś-], [cl-], [žń-], [źl-], [gž-], [mdl-], [mgl-], [brń-], [pxl-], [škl-], and [żзbl-] among the attested consonant clusters. Their structure can be described as: one or two consonants followed by a phonologically palatalized consonant. Such a palatalized consonant can be either "palatal" underlyingly or it can be derived from a "plain" consonant

via one of the palatalization rules[6]. Let us remember at this point that Polish has a cyclic rule of Anterior Palatalization (7), which turns //s z t d n ł// into /ś ź ć ń l/, respectively. The rule applies before /i/ and /e/. From the list in (29) we observe that except for [dń-] each of the clusters in question is attested in one word only. We observe further that in each of these words the cluster is followed by [i] or [e] across a morpheme boundary. As this is precisely the environment for the application of Ant. Pal. (7) we conclude that the "palatal" consonants in these clusters may, but need not, be derived from underlying "plain" consonants.

Consider the following pairs:

(30)(a) lnu [-n+u] 'flax' (gen.)   (b) lnie [-ń+e] (loc.)
     dno [-n+o] 'bottom'   dnie [-ń+e] (loc.)
     tną [-n+õw̃] 'they cut'   tnie [-ń+e] 'he cuts'
     ssać [-s+a-] 'to suck'   ssie [-ś+e] 'he sucks'
     cło [-ł+o][7] 'duty'   cle [-l+e] (loc.)
     żną [-n+õw̃] 'they reap'   żnie [-ń+e] 'he reaps'
     zły [-ł+i] 'bad'   źle [-l+e] 'badly'
     gza [-z+a] 'oestrus' (gen.)   gzić się [-ż+i-] 'to be in heat'
     mdły [-ł+i] 'sickly'   mdlić [-l+i-] 'to sicken'
     mgła [-ł+a] 'mist'   mgle [-l+e] (loc.)
     brnąć [-n+o-] 'to flounder' brnie [-ń+e] 'he flounders'
     pchła [-ł+a] 'flea'   pchle [-l+e] (loc.)
     szkło [-ł+o] 'glass'   szkle [-l+e] (loc.)
     źdźbło [-ł+o] 'stalk'   źdźble [-l+e] (loc.)

The data in (30) bring the conclusive evidence. We observe that each of the words in which the clusters in question are found appears also with a nonpalatalized consonant (except for dni+a 'day' gen.)). Needless to say, the "palatals" ([l], [ń], [ś], and [ż] in the words in (30b)) show up in the context of front vowels, whereas the "plain" consonants ([ł], [n], [ss], and [z] in the words in (30a)) are found in all other contexts. We conclude that the words in (30b) (and, consequently, the clusters in question) contain "plain" consonants at the underlying level.

We have thus demonstrated that the following clusters should be excluded from the inventory of underlying clusters in Polish:

(31) lń-, tń-, sś-, cl-, żń-, źl-, gź-;
     mdl-, mgl-, brń-, pxl-, škl-;
     źʒbl-.

---

[6] For a discussion of the terms "phonologically palatal" and "phonologically plain" see Rubach (1981:12).

[7] The actual pronunciation is [cw+o] rather than [cl+o], where [w] is derived from underlying //ł// via Lat. Voc. (18). As, however, any morpheme which at the phonetic level begins with a cluster of a consonant (or: consonants) and [w] must at some late level of the derivation contain a similar cluster with /l/ we shall, to simplify our presentation, give these intermediate representations of such morphemes as their phonetic ones (see also (32) and (39), cf. fn. 2).

We have also shown that the structure of the word dni+e 'bottom' (loc.) cannot serve as an example of the underlying cluster //dń-// in Polish.

As a final remark let us notice that having excluded the clusters in (31) from our inventory we do not have to introduce there the clusters from which they are derived. If they are derived from the clusters with "plain" consonants, then these clusters, being attested in the words in (30a), are found in the list in (25) anyway.

7. THE ELIMINATION OF THE APPARENT CLUSTERS

7.1. Lower: alternations in the stem

Our discussion in the previous two sections has shown that many surface phonetic clusters do not exist at the underlying level. Conceivably, this can be caused by two kinds of phenomena:

(i) One of the consonants forming the cluster is derived, i.e. absent in the UR.

(ii) A surface cluster is created in the course of the derivation, after an underlying vowel has been deleted.

So far we have invariably dealt with the cases of the first type. The cases of the second type constitute the subject of our analysis in the next two sections of this paper.

Consider the following pairs:

(31)(a) płci [płć-] 'sex' (gen.)   płeć (nom.)
     lnu [ln-] 'flax' (gen.)   len (nom.)
     lwa [lv-] 'lion' (gen.)   lew (nom.)
     łba [łb-] 'pate' (gen.)   łeb (nom.)
     łza [łz-] 'tear'   łez (gen. pl.)
     cło [cl-] 'duty'   cel (gen. pl.)
     ćma [ćm-] 'moth'   ciem (gen. pl.)
   (b) szkło [škł-] 'glass'   szkieł (gen. pl.)
     mgła [mgł-] 'mist'   mgieł (gen. pl.)
     pnia [pń-] 'trunk' (gen.)   pień (nom.)
     wsi [fś-] 'village' (gen.)   wieś (nom.)
     mchu [mx-] 'moss' (gen.)   mech (nom.)
     pchła [pxł-] 'flea'   pchel (gen. pl.)
   (c) krwi [krf'-] 'blood' (gen.)   krew (nom.)
     brwi [brv'-] 'eyebrow' (gen.) brew (nom.)
   (d) dno [dn-] 'bottom'   den (gen. pl.)
     dnia [dń-] 'day' (gen.)   dzień (nom.)
   (e) ćmić [ćm'-] 'to dim'   ciemny 'dim'

As we remember from section 3, the alternation between [e] and zero, which can be observed in different forms of each of the nouns in (32), is

indicative of an underlying yer in the root of the word. The yer surfaces as [e] when it is followed by another yer (here a nom. sg. or a gen. pl. desinence), or it deletes. Below we present the derivations of the words in (32) as they are grouped according to the types of rules they involve.

The derivation of the words in (32a) is fairly straightforward. The three rules that are relevant to all of the words in (32), Lower (6), V-Spell-out (21), and Yer Deletion (15), are occasionally supplemented by Fronting (4) and Lat. Vocal. (18). The first turns underlying //ɨ// of the feminine gen. sg. ending into [i], while the latter derives [w] from underlying //ł//. The following is the derivation of three pairs of words from (32a): *płeć* 'sex' — *płci* (gen.), *len* 'flax' — *lnu* (gen.), and *ćma* 'moth' — *ciem* (gen. pl.):[8]

(33)	płeć	płci	len	lnu	ćma	ciem	
UR	płĭć+ɨ	płĭć+ɨ	lĭn+ɨ	lĭn+u	čĭm+a	čĭm+ɨ	
Cyclic	płĭć+ɨ	płĭć+i	—	—	—	—	Fronting (4)
	płʊ́ć+ɨ	—	len+ɨ	—	—	ćem+ɨ	Lower (6)
Post-	płʊ́ć	płć+i	len	ln+u	ćm+a	ćem	Yer Del. (15)
cyclic	płeć	—	—	—	—	—	V-Spell-out (21)
	pweć	pwć+i	—	—	—	—	Lat. Voc. (18)

The derivations of the words in (32b) are similar to those in (33), except that they involve a few more rules. Thus in the words *szkieł* 'glass' (gen. pl.), *mgieł* 'mist' (gen. pl.), *pień* 'trunk', and *wieś* 'village' the velars //k g// and the labials //p v// are additionally palatalized to [k' g'] and [p' v'], respectively, via Labio-Velar *j*-insertion (8) and Surface Palatalization (16). Lab./vel. (8) is fed by Lower (6), which, turning the front yer //ɨ̆// into /e/, creates for it a derived environment (see the principle of Strict Cyclicity (1b)). At the same time the labial //m// in *mech* 'moss' and the velar //x// in *pchel* 'flea' (gen. pl.) remain unaffected because the mid back unrounded vowel /ʊ/, which comes from the back yer //ɨ̆// via Lower (6), does not trigger Lab./vel. (8). The last thing to be noticed about the words in (32b) is that //v// in *wsi* 'village' (gen.) is devoiced to [f] by Obstruent Unvoicing (20). The derivations proceed as follows:

(34)	szkło	szkieł	mgła	mgieł	pnia	pień	
UR	-kɨł+o	-kɨł+ɨ	-gɨł+a	-gɨł+ɨ	pĭň+a	pĭň+ɨ	
Cyclic	—	keł+ɨ	—	gel+ɨ	—	peń+ɨ	Lower (6)
	—	kjeł+ɨ	—	gjel+ɨ	—	pjeń+ɨ	Lab./vel. (8)
Post-	kł+o	kjeł	gł+a	gjeł	pň+a	pjeń	Yer Del. (15)
cyclic	kw+o	kjew	gw+a	gjew	—	—	Lat. Voc. (18)
	—	k'jew	—	g'jew	—	p'jeń	Surf. Pal. (16)

	wsi	wieś	mech	mchu	pchła	pcheł
UR	vɨ̆ś+ɨ	vɨ̆ś+ɨ	mɨ̆x+ɨ	mɨ̆x+u	-xɨ̆ł+a	-xɨ̆ł+ɨ

Cyclic	vɨ̆ś+i	vɨ̆ś+ɨ	—	—	—	-xɨ̆ł+ɨ	Fronting (4)
	—	veś+ɨ	mʊx+ɨ	—	—	xʊł+ɨ	Lower (6)
	—	vjeś+ɨ	—	—	—	—	Lab./vel. (8)
Post-	vś+i	vjeś	mʊx	mx+u	xł+a	xʊł	Yer Del. (15)
cyclic	—	—	mex	—	—	xeł	V-Spell-out (21)
	fś+i	—	—	—	—	—	Obstr. Unv. (20)
	—	—	—	—	xw+a	xew	Lat. Voc. (18)
	—	v'jeś	—	—	—	—	Surf. Pal. (16)

Two words in (32c), *krew* 'blood' and *brew* 'eyebrow', belong to the class of the so called "soft labial stems", which end in //j// at the underlying level (cf. Rubach 1984b: 54). Here is the derivation of their nom. sg. and gen. sg. forms:[9]

(35)	krew	krwi	brew	brwi	
UR	krɨ̆vj+ɨ	krɨ̆vj+i	brɨ̆vj+ɨ	brɨ̆vj+i	
Cyclic	krɨ̆vj+ɨ	krɨ̆vj+i	brɨ̆vj+ɨ	brɨ̆vj+i	Fronting (4)
	krʊvj+ɨ	—	brʊvj+ɨ	—	Lower (6)
Post-	krʊv+ɨ	krɨ̆v+i	brʊv+ɨ	brɨ̆v+i	Prev. Del.
cyclic	krʊv	krv+i	brʊv	brv+i	Yer Del. (15)
	krev	—	brev	—	V-Spell-out (21)
	kref	—	bref	—	Obstr. Unv. (20)
	—	krf+i	—	—	Progr' Unv. (24)
	—	krf'+i	—	brv'+i	Surf. Pal. (16)

Before we present the derivation of the words in (32d) let us remember from the list in (29) that the cluster [dń-] is attested in two words: *dnie* 'bottom' (loc.) and *dnia* 'day' (gen.). These two words exhibit the following alternations:
— 'bottom': [dn+o] (nom.), [dń+e] (loc.), [den] (gen. pl.): zero — [e] and [n] — [ń];
— 'day': [ʒeń] (nom.), [dń+a] (gen.): zero — [e] and [ʒ] — [d].

In (21) we have shown that the [ń] in *dnie* [dń+e] 'bottom' (loc.) is derived via Anterior Palatalization (7) from //n//, which appears on the surface in *dno* [dn+o] (nom.). The alternations presented above indicate, however, that the root of *dn+o* 'bottom', the only occurrence of the surface phonetic cluster [dn-], must have a yer at the underlying level. Similarly, the root of *dnia* [dń+a] 'day' (gen.) cannot be an underlying cluster because it surfaces with [e] in the nominative: *dzień* [ʒeń]. We conclude that the URs of the two stems are

---

[8] We simplify the derivation by not giving separately the representation at the beginning of cycle 2 when there are only two cycles, i.e. when the representation at the beginning of cycle 2 is the same as the underlying representation.

---

[9] The derivations in (35) involve a rule which is not found in Rubach (1981). It is rule (298) from Rubach (1984a):

Prevocalic Deletion $j \rightarrow \emptyset\ /\ C - \left\{ {i \atop i} \right\}$

For a thorough discussion of its working see Rubach (1984a: 209ff.).

//dĭn// and //ʒĭn//, for 'bottom' and 'day', respectively. The appearance of [d] in *dnia* 'day' (gen.) is the result of Noncontinuant Depalatalization (22), which applies to //ʒ// in the context of //ń// after the intervening yer is deleted.

The following are the derivations of *dno* 'bottom' (gen. pl.), *den* (gen. pl.), *dnie* (loc.), *dzień* 'day' and *dnia* (gen.):

(36)	dno	den	dnie	dzień	dnia	
UR	dĭn+o	dĭn+ɨ	dĭn+e	ʒĭń+ɨ	ʒĭń+a	
Cyclic	–	–	dĭń+e	–	–	Ant. Pal. (7)
	–	dөn+ɨ	–	źeń+ɨ	–	Lower (6)
Post-	dn+o	dөn	dń+e	ʒeń	ʒń+a	Yer Del. (15)
cyclic	–	den	–	–	–	V-Spell-out (21)
	–	–	–	–	dń+a	Noncont. Dep. (22)

So far we have dealt with all the pairs in (32) but one: the root of *ćmić* 'to dim' surfaces with [e] before the Adjectivizing Suffix //ĭn//. The alternation is indicative of an underlying yer and we conclude that the surface cluster /ćm-/[10], being absent in the UR of *ćma* 'moth' (see the derivation in (33)) is not found at the underlying level in *ćmić* 'to dim' either.

This is the derivation of the last pair of words in (32):

(37)	ćmić	ciemny	
UR	ćĭm+i+ć	ćĭm+ĭn+ɨ	
Cycle 2	ćĭm+i	ćĭm+ĭn	
	–	ćem+ĭn	Lower (6)
Cycle 3	ćĭm+i+ć	ćem+ĭn+ɨ	
	–	–	Lower (6)
Postcyclic	ćm+i+ć	ćem+n+ɨ	Yer Del. (15)
	ćm'+i+ć	–	Surf. Pal. (16)

We have thus demonstrated that none of the words in (32) contains a cluster at the underlying level. As these words are the only occurrences of the clusters which they exhibit on the surface, we conclude that the following clusters are not attested morpheme-initially at the underlying level:

(38) ln-, lv-, lb-, łz-, cł-, ćm-, -pń-, fś-, mx-, dn-, dń-;
škł-, mgł-, krf-, brv-, pxł-.

7.2. Lower: alternations in prefixes

For another piece of evidence we shall turn to morphology.

There is a group of prefixes in Polish which appear in two forms: with and without the final [e]: *od-, ode-; bez-, beze-; w-, we-; roz-, roze-; z-, ze-*. The alternation is governed phonologically by the rule of Lower (6). All these prefixes contain a yer at the underlying level. A prefix surfaces with [e] if there

[10] On the surface there is [ćm-] in *ćma* and [ćm'-] in *ćmić*, but [m'] comes from /m/ via Surface Palatalization (16) (cf section 5).

is a yer in the first syllable of the stem to which it is added. It surfaces without [e] if the following syllable does not have a yer (but see also 7.3).

Consider the following pairs:

(39)	łgać [łg-] 'to lie'	ze+łgać 'to tell a lie'
	łkać [łk-] 'to sob'	roze+łkać się 'to burst out sobbing'
	lżyć [lż-] 'to insult'	ze+lżyć (perf.)
	mrzeć [mż-] 'to die'	ze+mrzeć (perf.)
	cn+ot+a [cn-] 'virtue'	beze+cn+y 'ignominious'
	rżeć [rż-] 'to neigh'	ode+rżeć 'to neigh back'
	mdlić [mdl-] 'to sicken'	ze+mdlić (perf.)
	mgła [mgł-] 'mist'	ode+mglić 'to devaporate'
	lgnąć [lg-] 'to stick'	ode+lgnąć 'to unstick'
	rwać [rv-] 'to tear'	ode+rwać 'to tear off'
	pchać [px-] 'to push'	we+pchać 'to push in'
	ssać [ss-] 'to suck'	we+ssać 'to suck in'
	żreć [żr-] 'to devour'	ze+żreć (perf.)
	źle [źl-] 'badly'	roze+źlić 'to irritate'
	chce [xc-] 'he wants'	ze+chce 'he will want'
	chcieć [xć-] 'to want'	ze+chcieć (perf.)
	mścisz [mść-] 'you revenge'	ze+mścisz 'you will revenge'
	mszczą [mšč-] 'they revenge'	ze+mszczą 'they will revenge'
	brnąć [brn-] 'to flounder'	we+brnąć (perf.)
	drgać [drg-] 'to vibrate'	roze+drgać 'to set vibrating'
	rżnąć [rż-] 'to cut'	ode+rżnąć 'to cut off'
	żną [žn-] 'they reap'	ze+żną 'they will reap'

The surfacing of prefixes with [e] in the pairs in (39) is indicative of underlying yers in the words to which they are added. Most of these words are the only occurrences of the clusters which they contain. The following clusters are found also in other words: [lż-], [mż-], [rv-], [žn-], [rż-], and [px-]. What follows, the clusters in (40) are not underlying morpheme-initial clusters in Polish:

(40) łg-, łk-, lg-, ss-, żr-, xc-, xć, cm-;
mść-, mšč-, brn-, drg-, mdl- (hence: mdl-).

The data in (39) give also further evidence that /mgł-/ and /źl-/ are not underlying clusters. Let us note, however, that although we have shown that in *mgła* 'mist' there is a yer between //g// and //ł// (see the derivation in (34)) we still do not know whether /mg-/ is or is not a cluster at the underlying level. And indeed, we have no way of answering this question. Even if there is a yer between //m// and //g//, it can never surface phonetically. Lower (6) is a cyclic rule and it has no access to a yer which is followed by another yer in the same morpheme.

Similarly, in (30) we have shown that the [l] in *mdlić* [mdl+i+ć] 'to sicken' is derived from //ł//, which appears on the surface in *mdły* [mdł+ɨ] 'sickly'.

The data in (39) indicate that the root /mdł/ must have a yer at the underlying level. What they do not show, however, is whether the yer is found between //m// and //d// or between //d// and //ł//. We observe that in the latter case we would have to postulate a new cluster //md-//, which is not attested anywhere else in Polish.

Let us now pass to a very interesting case of the clusters [mšč], [mśc-], and [mst-]. They are attested in different forms of one word only, namely *mszczą* [mšč+õw̃] 'they revenge', *mścisz* [mśc+i+š] 'you revenge' and *zemsta* [ze+mst+a] 'revenge'. Let us see how *mścisz* 'you revenge' and *mszczą* 'they revenge' are processed by phonological rules (for a discussion of the con-jugational paradigm see Rubach 1981):

(41)	mścisz	mszczą	
UR	-st+i+i+š	-st+i+om	
Cycle 2	st+i	st+i	
	only Ant. Pal. can apply		
	sć+i	śc+i	Ant. Pal. (7)
Cycle 3	sć+i+i	śc+i+om	
	—	śc+ji+om	*j*-inser. (13)
	sć+i	śc+j+om	V-deletion (14)
	—	—	Ant. Pal (7)
	—	śc+j+om	Iotation (11)
	—	sč+om	*j*-deletion (12)
Cycle 4	sć+i+š	sč+om	
	no rule applies		
Postcyclic	sć+i+š	sč+om	Strid. Assim. (19)
	—	šč+õw̃	Other rules

So we know that neither /mšč-/ nor /mśc-/ are attested at the underlying level. Is /mst-/ an underlying cluster, then? Let us recall the data from (39): the prefix z-/ze- surfaces with [e] in *zemścisz* [ze+mśc+i+š] 'you will revenge' and in *zemszczą* [ze+mšč+õw̃] 'they will revenge'. Also in the noun *zemsta* [ze+mst+a] 'revenge' the prefix z-/ze- (as in *zgoda* [z+god+a] 'agreement' from *godzić* [goʒ+i+ć] 'to agree') surfaces with [e]. We conclude that the root /mst/ must have a yer at the underlying level.

It would seem that this is all that our analysis can say about the underlying structure of this root. As in the case of the unsolved problem of /md-/ in *mdły* 'sickly' and /mg-/ in *mgła* 'mist' we do not know whether in /mst/ there is a yer between //m// and //s// or between //s// and //t//, or even two yers, none of them ever appearing of the surface. Note, however, that this time we have an excellent piece of evidence that there must be a yer between //m// and //s// and only there. Recall the rule of Iotation (11). When applying to /ć/ and /ʒ́/ it has two expansions: after a [+strident] segment it yields /č/ and /ǯ/, in all other contexts it gives /c/ and /ʒ/, respectively. Let us assume tentatively that in *mszczą* 'they revenge' there is a yer between //s// and //t//. Yer Deletion (15) is

a postcyclic rule, so at the point where Iotation (11) applies the /ć/ obtained from //t// via Anterior Palatalization (7) will still be preceded by a yer. The environment "after [+strident]" being not met, the rule of Iotation will turn /ć/ into /c/ and the word will surface as *[msc+õw̃]. This is not the correct result. On the other hand, if there is no yer between //s// and //t//, then Iotation (11) will change /ć/ to /č/ yielding the correct form [mšč+õw̃]. From the data in (39) we know that in /mst/ there must be a yer at the uderlying level. We have just demonstrated that there can be no yer between //s// and //t//; consequently, there must be one between //m// and //s//.

We conclude that neither *//mst-// nor *//ms-// are attested underlying clusters in Polish.

The reasoning employed in discovering the underlying representation of the root //mǐst// can be fruitfully followed in the analysis of another group of surface phonetic clusters. Recall from the list in (29) that there are three clusters: [xšć], [xšč], and [xšt], which are found in the derivatives of one word only: *chrzest* 'baptism'. The three clusters differ from one another by the quality of the third segment. It seems that this alternation is easily explicable in the following manner: in *chrzcie* [xšć+e] 'baptism' (loc.) //t// is palatalized to /ć/ via Anterior Palatalization (7) and the derivation of *chrzczą* [xšč+õw̃] 'they baptize' is identical with that of *mszczą* [mšč+õw̃] 'they revenge' (see the derivation in (4)), except that in the case of *chrzczą* the rule of Strident Assimilation (19) applies vacuously to //š//. At a closer examination, however, this analysis turns out to be insufficient. The cluster [xšć] is found not only in *chrzcie* [xšć+e] 'baptism' (loc.) but also in *chrzcisz* [xšć+i+š] 'you baptize'. Were the derivation of *chrzcisz* 'you baptize' identical with that of *mścisz* [mśc+i+š] 'you revenge' the word would surface as *[xšć +i+š]. We observe further that it is not only in this case where the rule of Strident Assimilation (19) fails to apply. The comparison of two pairs: *zemsta* [ze+mst+a] 'revenge' vs *zemście* (ze+mśc+e) (loc.) and *chrztu* [xšt+u] 'baptism' (gen.) vs *chrzcie* [xšć+e] (loc.) shows that here too, the expected form *[xšć+e] does not appear. What is the lack of assimilation due to? For an answer to this query we turn to the nominative of the word 'baptism': *chrzest* [xšest]. We observe that in *chrzest* 'baptism' there are two sibilants between [x] and [t]. We also notice that as [e] of [xšest] is lost when followed by a vocalic desinence (for example in xšt+u (loc.)), so is one of the sibilants. These observations lead to the following conclusions:

(i) The underlying representation of *chrzest* 'baptism' is //xšǐst+ɨ//.
(ii) There is a rule of Strident Deletion, which deletes the second of two sibilants whenever they stand next to each other, i.e. after the deletion of the intervening yer.

Consequently, the derivations of *chrzest* [xšest] 'baptism', *chrztu* [xšt+u] (gen.), *chrzcisz* [xšć+i+š] 'you baptize' and *chrzczą* [xšč+õw̃] 'they baptize' are as follows:

(42)

	chrzest	chrztu	chrzcisz	chrzczą	
UR	xšĭst+ĭ	xšĭst+u	xšĭst+i+i+š	xšĭst+i+om	
Cycle 2	xšĭst+ɨ̆	xšĭst+u	xšĭst+i	xšĭst+i	
	—	—	xšĭsć+i	xšĭsć+i	Ant. Pal. (7)
	xšest+ɨ̆	—	—	—	Lower (6)
	only Ant. Pal. and Lower apply				
Cycle 3	—	—	xšĭsć+i+i	xšĭsć+i+om	
	—	—	—	xšĭsć+ji+om	j-inser. (13)
	—	—	xšĭsć+i	xšĭsć+j+om	V-del. (14)
	—	—	—	—	Ant. Pal. (7)
	—	—	—	—	Lower (6)
	—	—	—	xšĭsč+j+om	Iotation (11)
	—	—	—	xšĭsč+om	j-del. (12)
Cycle 4	—	—	xšĭsć+i+š	—	
	no rule applies				
Post	—	—	xšĭsć+i+š	xšĭsč+om	Strid. Assim. (19)
cyclic	xšest	xšst+u	xšsć+i+š	xšsč+om	Yer Del. (15)
	—	xšt+u	xšć+i+š	xšč+om	Strid. Del.
	—	—	—	xšč+õw̃	Other rules

We have thus demonstrated that neither *//xšč-// nor *//xšć-// nor *//xšt-// are attested underlying clusters in Polish.

Before we end this section, let us examine one more cluster: [čć-]. From the list in (29) we observe that it is attested in one word only: *czci* [čć+i] 'worship' (gen.). When we compare the gen. sg. of this word with its nom. sg. form, *czci* [čć+i] vs *cześć* [češć], we discover two alternations in the stem: [e] — zero and [š] — zero. The first of them is indicative of an underlying yer, the second gives support to our rule of Strident Deletion. The derivation proceeds as below:

(43)

	cześć	czci	
UR	čĭsć+ɨ̆	čĭsć+ɨ̆	
Cyclic	čĭsć+ĭ	čĭsć+i	Fronting (4)
	češć+ĭ	—	Lower (6)
Postcyclic	češć	čsć+i	Yer Del. (15)
	—	čć+i	Strid. Del.

We conclude that *//čć-// is not an attested underlying cluster in Polish.

7.3. Effects of D. I. Tensing

Our discussion in the preceding section has shown that the prefixes with an underlying yer, when added to the words in (39), surface with [e]. On the basis of this observation we have analysed the words in (39) as structures containing yers. In this section we are going to show how our analysis can be further supported by the evidence resulting from the alternations in the stems.

Recall that Polish has two rules for surfacing of yers: Lower (6), which complemented with V-Spell-out (21) turns //ĭ// and //ɨ̆// into [e], and D. I. Tensing (5), which tenses them to [i] and [ɨ] after the Derived Imperfective suffix -*aj* is added to the stem. A question arises, what happens if a stem with a yer is both preceded by a prefix with a yer and followed by the -*aj* suffix. The answer will depend on which of the two rules applies first or, more precisely, which of the affixes is processed earlier. As it happens, the order of application follows from more general patterns and is fully predictable here. In accordance with a general rule of Polish, which says that suffixes are bracketed before prefixes (cf Rubach 1981), the yer of the stem is tensed by D. I. Tensing (5) to /i/ or /ɨ/, and at the point where Lower (6) should apply to the yer of the prefix the structural description of the rule is no longer met and the prefix surfaces without [e]. The interaction of the rules can be observed, for example, in the word *pchać* [px+a+ć] 'to push'. For comparison, we give also a word without an underlying yer: *pływać* /pł-/ 'to float'.

(44)(a) pchać [px-] 'to push' — po+pychać //-x+aj+ć// 'to push along' (D. I.)
     we+pchać 'to push in' (perf.)   — w+pychać [-pɨx] (D.I)
     we+pchnąć 'to push in' (perf.)   — w+pychać [-pɨx] (D.I)
     ze+pchnąć 'to push aside' (perf.)   — s+pychać [-pɨx] (D.I)
     ode+pchnąć 'to push away' (perf.)   — od+pychać [-pɨx] (D.I)
(b) płynąć 'to flow'   — pływać //-v+aj+ć// (D.I.)
     s+płynąć 'to drift' (perf.)   — s+pływać (D.I.)
     od+płynąć 'to flow away' (perf.)   —od+pływać (D.I.)

Now, consider the alternations in the following pairs of words:

(45) rwać [rv-] 'to tear' — ode+rwać [-rv-] to tear off
         — od+rywać [-rɨv-] (D.I.)
    ssać [ss-] 'to suck' — we+ssać [-ss-] 'to suck in'
         — w+sysać [-sɨs-] (D.I.)
    rznąć [žn-] to saw' — ode+rznąć [-žn-] 'to saw off'
         — od+rzynać [-žɨn-] (D.I.)
    mknąć [mk-] 'to dash along' — ze+mknąć [-mk-] 'to run away'
         — z+mykać [-mɨk-] (D.I.)
    po+mknąć [-mk-] 'to dash' — po+mykać [-mɨk-] (D.I.)
    za+mknąć [-mk-] 'to shut' — za+mykać [-mɨk-] (D.I.)

The data in (45) show that *//mk-// is not an underlying cluster in Polish. Further evidence is also given that *//ss-// and *//žn-// are not among attested underlying clusters and that the words *rwać* 'to tear' and *pchać* 'to push' do not contain clusters at the underlying level. The list in (29) quotes *pchać* 'to push' as the only occurrence of the surface phonetic cluster [px-]; let us note, however, that there is a three-term cluster [pxł-], which is found in one word only: *pchła* 'flea'. In (34) we have demonstrated that in *pchła* 'flea' there is a yer between //x// and //ł//. As we have neither positive nor negative evidence that

there is also the second yer between //p// and //x// we must leave the question of the cluster //px-// open.

8. SEVERAL SEPARATE CASES OF APPARENT CLUSTERS

In the last section of our analysis we are going to discuss the structure of several separate words from the list in (29) which could not be included into any of the hitherto discussed groups.

In (39) we have demonstrated that *łżyć* [łž+ɨ+ć] 'to insult' does not have a cluster at the underlying level. The other of the two Polish words beginning with [łż-] is *lżej*, the comparative of *lekko* 'lightly', which is an adverb formed from *lekki* 'light' (Adj.). According to Nykiel and Fidelholtz (1981) adjectives like *gorzki* 'bitter' or *lekki* 'light' contain an adjectival suffix //ĭk//. We observe that there must be two such suffixes: //ĭk// and //ɨk//. The first is responsible for the palatalization in *gorzki* [goš+k'+i] 'bitter' vs *gorycz* [gor+ɨč] 'bitterness', the second occurs when the root final consonant is not palatalized, e.g. in *rzadki* [žat+k'+i] 'rare', and, consequently, *rzadko* [žat+k+o][11] (Adv.) vs *rzadziej* (Adv. compar.). Thus we postulate that *lekko* 'lightly' is underlyingly //lĭg+ɨk+o// and *lżej* (comp.) is //lĭg+ej//. The derivation proceedes as follows:

(46)	lekko	lżej	
UR	lĭg+ɨk+o	lĭg+ej	
Cycle 2	lĭg+ɨk	lĭg+ej	
	—	lĭʒ+ej	1st Velar (9)
	—	lĭž+ej	Spirant. (10)
	leg+ɨk	—	Lower (6)
Cycle 3	leg+ɨk+o	—	
	no rule applies		
Postcyclic	leg+k+o	lž+ej	Yer Del. (15)
	lek+k+o	—	Obstr. Unvoicing (20)

We conclude that *//lž-//* is not an attested underlying cluster in Polish.

Recall that the list in (25) contains [łž-] and [drž-] among the attested consonant clusters. From the list in (29) we observe that each of the two clusters is found in one Polish word only: [łž-] in *łże* 'he lies' and [drž-] in *drżeć* 'to tremble'. We also observe that in each of the two words [ž] alternates with [g:] *łż+e* 'he lies' — *łgać* 'to lie' and *drž+e+ć* 'to tremble' — *drg+a+ć* 'to vibrate'. The alternation is easily explicable in terms of 1st Velar Palatalization (9) and Spirantization (10), which turn underlying //g// into /ʒ/ and later into /ž/. In (39) we have shown that both *łgać* 'to lie' and *drgać* 'to vibrate' have a yer at the underlying level. We conclude that the roots of the two pairs of

---

[11] The [t] in [žat+k+o] is derived from //d// via Obstruent Unvoicing (22).

words are //łɨg// and //drɨg//, respectively. The derivations proceed as below:

(47)	łgać	łże	drgać	drżeć	
UR	łɨg+a+ć	łɨg+e	drɨg+a+ć	drɨg+e+ć	
Cycle 2	łɨg+a	łɨg+e	drɨg+a	drɨg+e	
	—	łɨʒ+e	—	drɨʒ+e	1st Velar (9)
	—	łɨž+e	—	drɨž+e	Spirant. (10)
Cycle 3	łɨg+a+ć	łɨž+e	drɨg+a+ć	drɨž+e+ć	
	no rule applies				
Postcyclic	łg+a+ć	łž+e	drg+a+ć	drž+e+ć	Yer Del. (15)
	wg+a+ć	wž+e	—	—	Lat. Vocal. (18)

We have thus shown that neither *//łž-// nor *//drž-// are attested underlying clusters in Polish.

Let us now take a closer look at the cluster [tn-]. As indicated in the list in (29), it is found in one word only: *tną* [tn+õw̃] 'they cut'. In its surface manifestations the root of this word reveals all kinds of alternations: *tną* [tn+õw̃] 'they cut' — *odetną* [ode+tn+õw̃] 'they will cut off' — *odcinają* [ot+ćin+aj+õw̃] 'they cut off'. Clearly, the root contains a yer at the underlying level. It surfaces as [i] in *odcinają* 'they cut off' via D.I. Tensing (5), and is lost in other forms. Also the surfacing of the *od-/ode-* prefix with [e] in *odetną* 'they will cut off' and without [e] in *odcinają* //-n+aj+om// 'they cut off' is perfectly regular. The peculiarity of the root, the [ć] — [t] alternation, is explicable in terms of Noncontinuant Depalatalization (22). The following is the derivation of *odcinają* 'they cut off' and *odetną* 'they will cut off':

(48)	odetną	odcinają	
UR	odɨ+ćin+om	odɨ+ćin+aj+om	
Cycle 2	ćin+om	ćin+aj	
	—	ćin+aj	D. I. Tensing (5)
	—	—	Lower (6)
Cycle 3	odɨ+ćin+om	ćin+aj+om	
	—	—	D.I. Tensing (5)
	odʊ+ćin+om	—	Lower (6)
Cycle 4	—	odɨ+ćin+aj+om	
	no rule applies		
Postcyclic	odʊćn+om	od+ćin+aj+om	Yer Del. (15)
	ode+ćn+om	—	V-Spell-out (21)
	ode+tn+om	—	Noncont. Dep. (22)
	—	ot+ćin+aj+om	Obstr. Unvoicing (20)
	ode+tn+õw̃	ot+ćin+aj+õw̃	Other rules

We conclude that the cluster *//tn-// is not attested morpheme-initially at the underlying level.

As the last point in this section we are going to discuss some of the longest formations. Recall from the lists in (25) and (29) that among the few four-term clusters in Polish there are two pairs: [žʒbł-] — [žʒbl-] and [pstr-] — [pstš-]. In

our discussion in section 6 we have shown that the [l] in [źʒbl-] is derived from underlying //ʎ// via Ant. Pal. (7). Similarly, the [š] in [pstš-], which is attested in one word only, *pstrzyć* [pstš+ɨ+ć] 'to mottle', is derived via Ant. Pal. (7) from //r//, although in this case a few other rules are also involved. The underlying //r// of *pstrzyć* 'to mottle' is found on the surface in the word *pstry* [pstr+ɨ] 'motley', the only occurrence of the cluster [pstr-]. By-passing the problem of cyclicity let us see how the underlying //r// is processed by phonological rules in *pstry* and *pstrzyć*:

(49)	pstry	pstrzyć	
UR	pstr+ɨ	pstr+i-	
	—	-tř+i-	Ant. Pal. (7)
	—	tř+ɨ	Retraction (17)
	—	tž+ɨ	r-spell-out (23)
	—	tš+ɨ	Progressive Unvoicing (24)

We conclude that *//pstš-// is not an underlying cluster in Polish.

Having discarded [pstš-] let us take a closer look at the cluster [źʒbl-], which is found in one word only: *źdźblo* 'stalk'. The diminutive of *źdźblo* is *ździebelko* and the two forms are a perfect example of an [e] — zero alternation in the stem. There is a problem, however. If we divide the word *ździebelko* into the stem [źdźebel-], the diminutive suffix [-k-] (//-ɨk//), and the inflectional ending [-o], we are faced with the question how it is possible for Lower (6), which is a cyclic rule, to make the yer between //ź// and //b// surface as [e]. We conclude that there must be a morpheme boundary between [-b-] and [-elko]. Consequently, the underlying representation of the two words is: //źʒɪb+ɨl+o// and //źʒɪb+ɪl+ɨk+o//. The rule of Lower (6) applying to *ździebelko* in the consecutive cycles makes its yers surface as [e]'s and thus the form [źʒeb+el+k+o] is obtained. The isolation of the root //źʒɪb// is by no means an arbitrary choice; there is one more word where it can be observed: *ździebko* [źʒeb+k+o] 'bit' with the diminutive suffix //ɪk//[12]. On this interpretation a new problem arises, however: if the root //źʒɪb// surfaces as [źʒeb] before //ɪl// in *ździebelko*, we would expect it to behave similarly in *źdźblo*; but then the word would surface as [źʒeblo]. Although this is not an incorrect form (both *źdźblo* and *ździeblo* can be found in Szymczak 1978), we observe that the word *źdźblo* cannot be derived in a regular way from the root //źʒɪb// and suffixes //ɪl// and //-o//. It seems now that there are two possibilities: either *źdźblo* is an exception to Lower (6), a rule which is known to have plenty of exceptions (cf Gussmann 1980), or there are two roots: //źʒb// (not //źʒbl//, because the gen. pl. of *źdźblo* is *źdźbel*), which is found only in *źdźblo*, and //źʒɪb//, which is found in *ździebko*, *ździebelko*, *ździeblarz* 'saw-fly', etc. On the first assumption we have to include a new three-term cluster //źʒb-// into our

[12] The glosses might suggest that *ździebelko* and *ździebko* contain different roots, but the second meaning of *źdźblo* is 'bit', so both words are its diminutives.

list in (25), the only three-term cluster beginning with //ź//; on the second, the derivations of *źdźblo* and *ździebelko* are as follows:

(50)	*źdźblo*	*ździebelko*	
UR	źʒɪb+ɪl+o	źʒɪb+ɪl+ɨk+o	
Cycle 2	źʒɪb+ɪl	źʒɪb+ɪl	
	exception	źʒeb+ɪl	Lower (6)
Cycle 3	źʒɪb+ɪl+o	źʒeb+ɪl+ɪk	
	—	źʒeb+el+ɪk	Lower (6)
Cycle 4	—	źʒeb+el+ɪk+o	
	—	—	Lower (6)
Postcyclic	źʒb+l+o	źʒeb+el+k+o	Yer Del. (15)
	źʒb+w+o	źʒeb+ew+k+o	Lat. Vocal. (18)

We end this section with the conclusion that the clusters *//źʒbl-// and *//źʒbl-// are not attested at the underlying level in Polish.

9. THE INVENTORY OF UNDERLYING CLUSTERS IN POLISH

Our analysis in the preceding sections has shown that in Polish many surface phonetic clusters do not exist at the underlying level. It has also been demonstrated that several underlying clusters never appear on the surface and, consequently, are unattested phonetically (cf section 5). Now, the time has come when we should return to the list in (25) and, introducing there all changes that we have postulated, present have inventory of underlying morpheme-initial consonant clusters in Polish.

The new list reads as below:

(51)(a)(i)   CC-clusters

     mn- mń- mł- ml- mr- mž- mš- (mg- md- ?)

     rv- rd- rt- rž- rʒ-

  (ii)   CCC-clusters

     mgń-

     lśń-

 (b)(i)   CC-clusters

     bł- bl- br- bz- bž- bź-

     pn- pł- pl- pr- pt- ps- pš- pś- (px- ?)

     vn- vł- vl- vr- vd- vz- vž- vź- vʒ-

     fl- fr- ft- fc- fš- fč-

     dm- dł- dl- dr- db- dv- dž-

     tł- tl- tr- tf- tš- tk- tx-

     zm- zn- zł- zr- zv- zb- zd- zg-

     sm- sn- sł- sl- sr- sp- sf- st- sc- sk- sx-

     ʒb- ʒv-

     cm- cf-

     žm- žł- žv- žb- žg-

šm- šn- šł- šl- šr- šp- šf- št- šč- šk-
žž-
čm- čł- čf- čt- čč- čk-
źr- źž-
śm- śń- śl- śr- śp- śf- ść-
źv- źg-
ćp- ćf-
gm- gn- gń- gł- gl- gr- gb- gv- gd- gz- gž- gź-
km- kn- kń- kł- kl- kr- kp- kf- kt- ks- kš- kś- kć-
xm- xł- xl- xr- xf- xš-

  (ii) CCC-clusters

      bzd- bžm- bžd- bžž- bźž-
      pšt- pšč- plf-
      vbr- vzr-
      fsp- fst- fšč- fść-
      drv- džv-
      trf- tšm- tšn- tkl- tkf- tšč- tšp-
      zvł- zgl- zbr- zdr- zgr- zgž-
      smr- skn- sxl- spr- str- skr- stš- skš- skf-
      ckl- ckń-
      špr- ščf- škf-
      (źžb- ?)
      grd- gzł- gžm- gžb-
      krn- krt- kšt-

  (iii) CCCC-clusters

      pstr-
      vzgl-
      fstr- fskš-

The presentation of the list in (51) closes the Polish part of this paper. As pointed out in section 1, we are not going to describe the structure of the underlying clusters. Nevertheless, it seems worthwhile to record a few facts that a tentative comparison of the lists in (25) and (51) can reveal.

(i) Of the two lists, (25) and (51), the second is shorter. The total number of items in each of them is 289 and 213, respectively.

(ii) List (25) is divided into three parts: (a), (b), and (c). In each of these parts the reduction in the number of clusters is different. Specifically, list (51) lacks part (c), which in the list in (25) contains 45 clusters ending with a secondarily palatalized consonant. As has been pointed out in section 5, secondary palatalization is a feature assumed in the course of the derivation and thus absent from the underlying representation. Consequently, none of the clusters in (25c) is present at the underlying level.

(iii) The remaining clusters in the two lists are divided into those which begin with a sonorant (a), and the ones beginning with an obstruent, (b). The

respective numbers of items for lists (25) and (51) are: 33 and 14 for part (a), and 211 and 196 for part (b). Thus we can see that while there are almost as many underlying clusters beginning with an obstruent as are attested on the surface, more than a half of the surface phonetic clusters beginning with a sonorant do not exist at the underlying level. Finally, we can notice that among the 14 underlying clusters beginning with a sonorant there are only seven which are found in more than one word ([mn-, mń-, mł-, ml-, mr-, mž-] and [mš-], cf (29) and (39)).

As a final point of our discussion let us observe how the results of our analysis lend support to some of, already classical, Jerzy Kuryłowicz's views concerning Polish syllable structure.

In Kuryłowicz (1948) we find the concept of a quasi-symmetrical structure of a syllable. The syllable is described from the nucleus outwards. Segments surrounding the nucleus are said to appear in certain positions which are counted symmetrically. Thus position 1 is occupied by a segment next to the syllable nucleus (the last in a syllable-initial and the first in a syllable-final cluster), position 2 is that of a neighbouring sound, position 3 is still further away from the centre, and so on. At the same time it is claimed that there are whole classes of sounds which are ascribed to some position in a systematic way. Thus for Ancient Greek and Sanskrit position 1 is characteristic of sonorants, position 2 is regularly taken by stops, and in position 3 [s] is found (Kuryłowicz 1948).

In Kuryłowicz (1952) a similar structure is posited with respect to Polish: consonantal sonorants are said to appear next to the syllable nucleus, stops precede them in syllable-initial and follow in syllable-final clusters, and position 3 is regularly taken by [s]. In the face of the surface phonetic data which, especially with respect to sonorants, contradict this formula in many points (see list (25)) Kuryłowicz (1952) weakens his original claim and introduces several supplementary principles: the inner structure of a cluster, the reversibility of its constituents, etc. At the same time, however, the structure with consonantal sonorants in the first, almost central position remains the preferred one.

The reasons for this preference, implicit rather than explicit in Kuryłowicz's papers, are the following: there seems to be a correspondence between the place which a segment occupies in the sonority hierarchy[13] and the position it is likely to take in a syllable: the more sonorous a sound is, the more centrally it occurs. Polish surface phonetic data show how often this principle is violated. It is not uncommon for consonantal sonorants to appear in a marginal, syllable- (and, consequently, morpheme-) initial position in a cluster, where they, being relatively high in the sonority hierarchy, should not

---

[13] For an early use of the term Sonority Hierarchy see Jespersen (1904), for a recent one e.g. Kiparsky (1979).

be found. The results of our analysis demonstrate that the same principle, when applied to the underlying inventory, yields much more regular pattern: there are few such clusters at the underlying level.

10. THE INVENTORY OF UNDERLYING CLUSTERS IN ENGLISH

In order to establish the inventory of underlying morpheme-initial consonant clusters in English we must follow the same procedure that we adopted for the analysis of Polish (see section 5) We begin by assuming that the inventories of underlying and surface phonetic clusters are identical. Specifically, we are going to test the following two hypotheses:

(A) All the clusters in (26) are present at the underlying level.

(B) There are no underlying morpheme-initial clusters of consonants which would not be found in the list in (26).

As we remember from section 5, a similar assumption with respect to Polish has been refuted due to the existence of rules which create new clusters in the course of the derivation. In contradistinction to the system of Polish it seems, however, that for English both (A) and (B) are correct. In English there are no phonological rules that would turn one word-initial cluster into another, as e.g. Anterior Palatalization (7) does in Polish, nor are there rules which would create a new cluster by deleting an underlying vowel, as is the case with the Polish rule of Yer Deletion (15). The only two phonological rules in English that add new nonvocalic segments in the course of the derivation are *j*-insertion (2) and *j*-preposing (3). We observe that although there are clusters which are created by one of these two rules (e.g. [stj-] in *studious*) they are invariably clusters of consonants with a semivowel, which lie outside the scope of the present paper.

We conclude that the list in (26) presents the inventory of underlying word-initial consonant clusters in English.

11. CONCLUSION

Our analysis of the system of underlying morpheme-initial consonant clusters in Polish and English has revealed a significant difference between the two languages: in Polish there are fewer underlying clusters than are attested on the surface, whereas in English the inventories of the underlying and surface phonetic clusters are identical.

REFFERENCES

Bargiclówna, M. 1950. "Grupy fonemów spółgłoskowych współczesnej polszczyzny kulturalnej". *Biuletyn Polskiego Towarzystwa Językoznawczego* X. 1—25.
Chomsky, N., M. Halle, 1968. *The Sound Pattern of English*. New York: Harper and Row.
Cygan, J. 1971. *Aspects of English Syllable Structure*. Wrocław: Ossolineum.

Gimson, A. C. 1976². *An Introduction to the Pronunciation of English*. Bristol: Edward Arnold.
Gussmann, E. 1978. *Contrastive Polish-English Consonantal Phonology*. Warszawa: PWN.
Gussmann, E. 1980. *Studies in Abstract Phonology*. Linguistic Inquiry Monograph Four. Cambridge, Mass.: The MIT Press.
Halle, M. 1977. "Tenseness, Vowel Shift, and the Phonology of the Back Vowels in Modern English". *Linguistic Inquiry* 8. 611—625.
Halle, M. 1978. "Formal vs. Functional Considerations in Phonology". Indiana University Linguistics Club.
Jespersen, O. 1904. *Lehrbuch der Phonetik*. Leipzig and Berlin: B. G. Teubner.
Jodłowski, S., W. Taszycki. 1980¹⁰. *Słownik ortograficzny*. Wrocław: Ossolineum.
Jones, D. 1980¹⁴. *Everyman's English Pronouncing Dictionary*. Revised and edited by A. C. Gimson. London: J. M. Dent and Sons Ltd.
Karaś, M., M. Madejowa, (eds.) 1977. *Słownik wymowy polskiej*. Warszawa: PWN.
Kean, M. L. 1974. "The Strict Cycle in Phonology". *Linguistic Inquiry* 5. 179—203.
Kiparsky, P. 1979. "Metrical Structure Assignment is Cyclic". *Linguistic Inquiry* 10. 421—442.
Kiparsky, P. 1982. "From Cyclic to Lexical Phonology". In H. van der Hulst and N. Smith (eds.) *The Structure of Phonological Representations*. Part 1. Dordrecht: Foris. 131—176.
Kuryłowicz, J. 1948. "Contribution à la théorie de la syllabe". *Biuletyn Polskiego Towarzystwa Językoznawczego* VIII. 80—114.
Kuryłowicz, J. 1952. "Uwagi o polskich grupach spółgłoskowych". *Biuletyn Polskiego Towarzystwa Językoznawczego* XI. 54—69.
Mascaró, J. 1976. Catalan Phonology and the Phonological Cycle. M. I. T. Ph. D. diss., reproduced by the Indiana University Linguistics Club.
Nykiel, B., J. L. Fidelholtz. 1981. "On a Class of Foreign Suffixes in Polish and English: Some Remarks on +ism and +ist". *Studia Anglica Posnaniensia* 13. 57—77.
Pawelec, P. (forthcoming) "The Structure of Morpheme-Initial Consonant Clusters in Polish and English. A Cyclic Account".
Rubach, J. 1971. Initial and Final Consonant Clusters in English and Polish. University of Warsaw M. A. dissertation.
Rubach, J. 1977. *Changes of Consonants in English and Polish*. Wrocław: Ossolineum.
Rubach, J. 1981. *Cyclic Phonology and Palatalization in Polish and English*. Wydawnictwa Uniwersytetu Warszawskiego.
Rubach, J. 1982. *Analysis of Phonological Structure*. Warszawa: PWN.
Rubach, J. 1984a. *Cyclic and Lexical Phonology. The Structure of Polish*. Dordrecht: Foris.
Rubach, J. 1984b. "Soft Stems and the Problem of Abstractness". *Folia Linguistica* 18. 27—63.
Sawicka, J. 1974. *Struktura grup spółgłoskowych w językach słowiańskich*. Wrocław: Ossolineum.
Stanisławski, J. 1980⁵. *Wielki słownik polsko-angielski*. Warszawa: PWN.
Szymczak, M. (ed.) 1978. *Słownik języka polskiego*. Warszawa: PWN.

EWA TOMASZEWICZ

PHONOLOGICAL BOUNDARIES BEFORE STRESS NEUTRAL LATINATE SUFFIXES IN ENGLISH

1. It has been generally assumed that a suffix is neutral with respect to the placement of stress when the word internal boundary /#/ can be introduced between the string belonging to a lexical category and the suffix, so that /#/ blocks the application of the general stress rules (Bauer 1983, Chomsky, Halle 1968, Halle, Keyser 1971, Nessly 1973, Ohlander 1976, Siegel 1974). Among the English derivational suffixes for Nouns, Adjectives, Verbs (henceforth Ns, As, Vs) and adverbs, all the native (Germanic) suffixes are stress neutral; they attach to existing words and for this reason they are preceded by /#/, e.g. *-er, -ness, -ship, -hood, -ing* (nominalizing suffixes); *-less, -ish, -y, -like* (adjectival suffixes); *-en* (verbal suffix); *-ly, -wise* (adverbial suffixes). Romance *-age* and *-ment* are stress neutral too. Some problems arise with other Romance suffixes, i.e., *-able, -ent/ -ant, -ive* (adjectival suffixes); *-ize* (verbal suffix); *-ism, -ist* (nominalizing suffixes), which are generally preceded by /#/ and do not affect stress, but there are numerous examples of words with those suffixes acting as stress pattern changing suffixes.

2.1. The verb forming suffix *-ize* when attached to a complete word does not affect the stress pattern of the base (Chomsky, Halle 1968:154, Ohlander 1976:148), e.g., *skéletonize, álphabetize, prótestantize, díphthongize, módernize, stándardize, lócalize, légalize*; but in *cathólicize, grammáticize, políticize, gelátinize, análogize, commúnalize, diplómatize, démócratize* the morpheme boundary /+/ is inserted and the suffix *-ize* shifts the primary stress from the initial syllable to the syllable which is penultimate in the string before the suffix, cf. *cátholic* (N, A), *pólitic* (N, A), *gélatine, ánalogue, díplomat, démocrat*, but *grammátic(al)*. Because the adjectives ending in *-al* form the most potential bases for deriving verbs with the suffix *-ize*, we can intuitively assume

that the latter forms are derived from adjectives ending in -al[1], with /#/ before
-ize, e.g., *catholic+al#ize*, *grammatic+al#ize*, *politic+al#ize*. The general
stress rules, i.e., the SPE Main Stress Rule condition (a), (henceforth the Affix
Rule or AR), which stresses either the syllable immediately before the suffix or
the one which is the second before the suffix depending on whether the syllable
preceding the suffix forms a strong or weak cluster respectively, place the
primary stress on the antepenultimate syllable in the first cycle and in the
second cycle the suffix -al shifts the stress to the syllable before -ic.

(1) $*[[[kæθɔl+ik]_N+æl]_A \#\bar{\imath}z]_V$

1	AR
2 1	AR^2
3 1	SA

This sort of derivation is untenable within the present generative frame-
work of phonology, because the formative /æl/ must somehow get deleted
and morphological deletions are almost always prephonological (cf. Aronoff
1976:78, 79) or postphonological, and still worse, the final velar of the residual
string *catholic* will not undergo Velar Softening since the boundary /#/ blocks
the application of word level rules. Therefore the boundary before -ize in verbs
like *catholicize, grammaticize, politicize* must be the formative boundary /+/,
and the derivation of primary stress involves two cycles, the first on the base
word, the second on the base followed by -ize, which is a stress changing suffix
then. This is the position taken up in the SPE (154), i.e., there is a weakening of
/#/ to /+/ with the primary stress being correctly assigned to the penultimate
syllable of the string to which -ize is attached. To derive the correct stress
pattern in these words Chomsky and Halle have the bracketing as in (2), an ad
hoc weakening of /#/ to /+/, and a special rule (SPE rule [158]) for placing
the primary stress on the affix containing a tense vowel in addition to the
general stress rules, i.e., Affix Rule and Stressed Syllable Rule (henceforth
SSR) which moves the primary stress from the final syllable one or two syllables
to the front using the strong and weak cluster principle.

(2) $[[kæθɔl+ik]_A+\bar{\imath}z]_V$

1		AR
2	1	[158]
3 1	2	SSR
4 1	3	SA

It follows from the analysis above that -ize which is a very productive suffix

---

[1] In the SPE the adjectival suffix -ic exists as a variant of the underlying compound suffix
//+ik+æl//. The formative //æl// becomes deleted by an ad hoc rule before the boundary /#/
(SPE:87, rule [58]).

[2] For the details of stress rules that account for the weakening of [1 stress] to [2 stress] as well
as Stress Adjustment rules see the SPE:78,84.

attaching to both latinate and nonlatinate bases (cf. *bastardize, jeopardize,
gormandize, Americanize, Calvinize*) is generally neutral with respect to stress
placement but in many verbs acts as a stress changing suffix, and then as
Chomsky and Halle assume, the words containing -ize must be specified by
two not fully predictable features: the first determining whether the suffix -ize
is preceded by /#/ or /+/, and the second determining whether or not rule
[158] applies to -ize. Our suggestion is that it should be possible to delimit
a special class of latinate bases for this suffix on the grounds that they show
some other phonological and morphological peculiarities that would allow us
to class them as 'foreign' or [−native derivational pattern], so that the /+/
insertion before -ize would be automatic as well as rule [158] triggered by this
boundary and the tense vowel of the suffix. Some support in favour of this
suggestion can be adduced from the consideration of the stress patterns of
cómmunize and *commúnalize*. If we assume -ize to be preceded by /#/ in both
words, then the base underlying the former must be /komune/, i.e., with the
hypothetical stem final vowel /e/ needed to effect the tensing of /u/ in *cómmune*
(N). But it does not seem correct to derive *communalize* with /#/ before -ize
(as has been assumed in Aronoff 1976:22) from the underlying adjective
commúnal (pertaining to a *commune*) not only because it is semantically wrong,
but also because there is no *cómmunalize* with /#/ before -ize derived from
the adjective *cómmunal* (pertaining to a *community*). Thus the boundary before
-ize in these verbs must be /+/ and the stem underlying the derivations in
question is /komun+/ which presupposes a noncyclic derivation of stress for
the adjective *cómmunal*.

(3) $[[komun+æl]_A+\bar{\imath}z]_V$

1		AR
2	1	[158]
3 1	2	SSR
4 1	3	SA

It has been shown in (2) and (3) that the verbs *catholicize* and *communalize*
have the same morphological structure and they belong to the same morpho-
logical class. The verbal suffix -ize is not a stress neutral suffix and cannot be
preceded by /#/ in an environment which has a morphologically complex
structure, i.e.,

$$[stem+suffix]_{AN}$$

The verbs *gelatinize, analogize* will belong to this class too, if we take the
nouns *gelatine, analogue* to be morphologically complex.

(4) $[[gelæt+in]_N+\bar{\imath}z]_V$ $[[ænæ+log]_N+\bar{\imath}z]_V$

1		1		AR
2	1	2	1	[158]
3 1	2	3 1	2	SSR
4 1	3	4 1	3	SA

One may observe that the formative boundary /+/ before /+in/, /+log/ in *gelatine, analogue* is unmotivated since a monomorphemic analysis also gives a correct stress pattern by applying the SPE Main Stress Rule, condition (b) (henceforth MSR). This rule places the primary stress in nonderived Ns and As on the penultimate syllable if it forms a strong cluster or on the antepenultimate syllable if the penultimate one is weak (SPE:81).

(5) $[[\text{gelætin}]_N + \bar{\text{i}}z]_V$ $[[\text{ænælog}]_N + \bar{\text{i}}z]_V$

1		1		MSR$_b$
2	1	2	1	[158]
3 1	2	3 1	2	SSR
4 1	3	4 1	3	SA

The MSR$_b$ applies in all cases of Ns and As where /+/ can be claimed to be largely unmotivated (cf. Ross 1972:261), so its status of a cyclic rule is questionable in view of the Principle of Strict Cyclicity, according to which a cyclic rule is not allowed to apply morpheme internally but it can apply across /+/ (cf. Rubach 1981: 18—20). Actually, there is not a single case of stress derivation in the SPE where this rule would be found to reapply in the second cycle. And because the remaining rules involved in the derivation of (5), i.e., R [158] and SSR, satisfy the requirements of the Principle of Strict Cyclicity the MSR$_b$ being noncyclic cannot precede them. The analysis given in (5) is incorrect, as the weakening of /+/ to ø cannot be employed when one wants to explain why *-ize* acts as a stress changing suffix with certain bases. The boundary between the stem and the suffix in *gelatine, analogue* is not only morphologically real (with *-ine, -logue* being frequently recurring formatives, cf *saccharine, vaccine, catalogue, monologue*) but it is also well grounded in phonology.

The weakening of phonological boundaries is not an impossible situation in the sense of being psychologically real. Two different underlying representations of *capitalism* (*-ist*) can be assumed in order to account for the two different stress contours, i.e., *cápitalism* (*-ist*) vs *capitalism* (*-ist*) (cf. Nessly 1971:508). The former has the stress pattern of an adjective ending in *-al*, the latter is stressed as a derived noun; hence there must be different underlying boundaries before *-ism* and *-ist*.

(6) $[[\text{kæpitæl}]_{NA} \# \text{izm}]_N$

1	MSR$_b$

(7) $[[\text{kæpit} + \text{æl}]_A + \text{izm}]_N$

1	AR
2 1	AR

The morphological structure of the base word for deriving *capitalism* (*-ist*) gives us an explanation why the suffixes *-ism, -ist* sometimes behave as stress

changing suffixes in the same way as the suffix *-ize* does when attached to complete words.

Nessly (1971:509) postulates the process of weakening of the strong word boundary to the weaker formative boundary to be involved in the derivation of stress pattern of *capitalism*. He also claims that this process leads to the loss of morphological distinctiveness which in turn causes the loss of phonological foreignism and consequently it brings about the anglicization of the form in question. The present analysis reveals the fact that it is the form given in (6) and not the one in (7) that has become anglicized. The weakening of the morpheme boundary to zero boundary before *-al* explains the occurrence of /#/ before *-ism, -ist* in *cápitalism* (*-ist*) and accounts for the neutral behaviour of these suffixes with respect to the stress pattern. Alternatively, we can assume the weakening of /+/ before *-al* as well as that before *-ism, -ist* to be responsible for the stress contour in *capitalism* (*-ist*), the primary stress being then assigned by the MSR$_b$. This sort of analysis corresponds to the process of anglicization through phonological boundary adjustment and not via native Word Formation rules. The derivatives become phonologically adjusted and fall out from the latinate derivational system.

The SPE theory also admits the weakening of boundaries, provided the words are specified by some rule features (SPE:154), so that it becomes possible to account for the variant pronunciations of *aggrándize* vs *ággrandize*, *amórtize* vs *ámortize*, *recóndite* vs *récondite*. Again it is the replacement of /+/ by no boundary.

(8) $[[\text{æmort}] + \bar{\text{i}}z]$ $[[\text{rekond}] + \bar{\text{i}}t]$

	1		1	[158]
1	2	1	2	SSR

(9) $[\text{æmort}\bar{\text{i}}z]$ $[\text{rekond}\bar{\text{i}}t]$

	1		1	MSR$_c$
1	2	1	2	ASR ([75] SPE)

Here the suffix *-ize* cannot be preceded by /#/ and it must be grouped together with the adjectival suffixes *-ite, -ine, -ile*, that are affixed to stems and not to independent words, e.g., *finite, hostile, Argentine*. When there is no boundary before the suffix the word receives a monomorphemic analysis with the primary stress on the third syllable from the end by the SPE MSR condition (c) and the Alternating Stress Rule. The former stresses the last syllable if the verb ends in a strong cluster or the penultimate syllable if it ends in a weak cluster. The latter does not make use of the strong and weak cluster principle and it moves the primary stress from the final syllable by two syllables to the front. There are also a number of words for which the monomorphemic analysis is the only possible one, e.g., *exercise, advertise, supervise, fraternize, eternize*. On the other hand, because there are adjectives

fraternal, eternal some sort of boundary before *-ize*, *-al* can be possibly assumed. However, the analysis with /+/ before the suffix does not work here.

(10)   *fræstern+īz

            1   [158]

            1   SSR

The one without /+/ does.

(11)   frætternīze

            1   MSR$_e$

            1   ASR

It emerges from the consideration of the morphological structure of derived verbs ending in *-ize* and nouns ending in *-ism*, *-ist* with these suffixes preceded by /+/ that the occurrence of this boundary is actually determined by the morphological structure of the base. The theory of cyclic phonology, and more precisely the Principle of Strict Cyclicity, exludes a monomorphemic analysis of the base if the derivational suffix affects the stress pattern of the derived verb or noun. Within this theory the SPE MSR condition (b) as well as condition (e) which apply to monomorphemic forms can no longer be maintained as cyclic rules. Similarly the ASR which applies after the MSR condition (e) is not a cyclic rule either. As for rule [158] and the SSR, they apply across /+/ as in the examples of (2), (3), (4) and (8), though the latter forms do not have a cyclic structure. The noncyclic occurrence of /+/ in (8) brings about the tendency towards weakening of this boundary to zero, which in turn effects the derivation of stress contour by the application of noncyclic stress rules.

The verbs ending in *-ize* where *-ize* is a stress neutral suffix preceded by /#/ are derived from complete words, mainly from nouns and adjectives ending in *-al*. In the case of *democratize*, *diplomatize*, *-ize* is also affixed to a complete word, cf. *democrat*, *diplomat*, but the stress falls on the syllable which is penultimate before the suffix and not on the word initial syllable as in *skeletonize*. Therefore we must assume that the derivation of stress involves /+/ before the suffix with the successive application of rule [158] and stress retraction by the SSR in the second cycle.

Again, the morphological complexity of the base explains the presence of /+/ before *-ize*. It is not quite clear, however, whether the morphemes *-crat* and *-mat* are preceded by the morpheme boundary /+/ or the prefix boundary /=/. Chomsky and Halle assign both morphemes to the 'syntactic' category of stem and even allow a cycle to operate on stems[3] so that it becomes possible to produce 1–3 stress pattern for *diplomat*, *democrat* by means of applying the MSR$_e$ followed by the SSR. It is not essential for the purpose of the present analysis to account for the details of stress assignment. A very important

---

[3] According to Brame's (1972) Natural Bracketing Hypothesis a phonological representation whose surface reflex does not show up as an independent word cannot be bracketed.

observation that emerges from the present analysis is that the words *democrat*, *diplomat* as well as *analogue*, *gelatine*, *catholic*, *communal*, *capital* can be analyzed as monomorphemic and receive the primary stress by the MSR case (b)[4]. When these words serve as bases for deriving latinate verbs ending in *-ize* and nouns ending in *-ism*, *-ist* they must be analyzed as morphologically complex and the choice of the boundary before the suffix is thus morphologically determined. In other words, the morphological complexity of the base accounts for its latinate character, but as shown above the same word can be assigned different types of analysis, i.e., with different underlying boundaries. The choice of the boundary depends on the assimilation rate of a given latinate word. The word boundary /#/ before the suffix means that the suffix is neutral and it gives a fully productive pattern with nonlatinate or latinate bases as well as with any foreign word. The formative boundary /+/ before a suffix that can also take /#/ does not entail productivity in the sense of active Word Formation rules. The choice of /+/ before any of the above suffixes is morphologically determined by the complex structure of the base, and for this reason both the base and the suffix are to be assigned to the class of latinate items in the lexicon. The choice of a latinate base determines the choice of a latinate suffix and the choice of a nonlatinate base determines the choice of a nonlatinate suffix, as in *capitalism* vs *cápitalism*, i.e., with /+/ and /#/ respectively. The replacement of /#/ by /+/ is only rarely possible with the same base, but if it does occur it points to the process of anglicization of a given latinate formation. Of the two kinds of phonological boundaries /+/ is the weaker one as it can weaken to zero when it is only phonologically motivated as in (8) and has no support from word based Word Formation rules. Such forms tend to behave as monomorphemic with respect to the placement of stress.

2.2. The adjectival suffixes *-ent/-ant* and *-able* are generally stress maintaining and are preceded by /#/. From the point of view of morphology the suffix *-able* is a very productive word forming suffix, e.g., *eatable*, *readable*, while *-ent/-ant* attach to latinate bases only and more precisely to latinate bisyllabic prefixed stem verbs. With both *-ent/-ant* and *-able* we find derivations that (a) preserve the stress pattern of the bisyllabic verb, (b) move the stress to the initial syllable and effect the laxing of the nonstressed vowel by the Auxiliary Reduction Rule[5] (rule [118$_d$], SPE:159-160). In the second case according to Chomsky and Halle the component formatives are more closely amalgamated and /#/ is weakened to /+/. The difference between the stress maintaining #*ent*/#*ant* in *defiant*, *dependent*, *inherent*, *insistent*, *observant* and

---

[4] The syllable with //kr// in *democrat* must be classified as weak then (cf. //br// in *vertebral*, SPE:82).

[5] Actually the Auxiliary Reduction rule I shown in Brame (1972:67) to be cyclic, makes the tense vowel of the stem lax and unstressed so that it can further reduce to [ə].

the stress changing +*ent* in *referent*, *confident*, *resident* is illustrated by the derivations below.

(12) [de+pend]#ent [in+hēr]#ent   [in+sist]#ent

    1   1   1   MSR$_c$

(13) [[re+fer]+ent] [[kon+fid]+ent] [[re+sid]+ent]

    1   1   1   MSR$_c$

1 2   1   1   AR

        1   2   1 2   SSR

Because the suffix -*ent* attaches to only a specific set of latinate word bases and is not productive in the sense of active Word Formation rules we should rather expect it to be preceded by /+/. Unfortunately, the occurrence of /+/ or /#/ before -*ent* cannot be predicted by referring to morphological features of the base. Verbs with a lax vowel in the stem take /#/ if the stem syllable forms a strong cluster, e.g., *dependent*, *insistent*, *observant*. When analyzed as cyclic structures these forms first receive stress on the strong syllable of the stem by the MSR$_c$, and in the second cycle the stress is reassigned to the same syllable by the AR. Because the second cycle is vacuous, the reanalysis of /+/ before -*ent* into /#/ is possible. Verbs with the stem syllable forming a weak cluster retain their cyclic structure and the stress is shifted to the prefix by the AR, e.g., *referent*. The consideration of cyclic stress rules also accounts for the analysis of -*ent* forms with an underlying tense vowel in the stem, as in *inherent*, *defiant*, *excitement* and in *confident*, *resident* with /#/ and /+/ before -*ent* respectively. In the latter case the morpheme boundary /+/ does not only affect the stress pattern but also brings about some segmental variation in the stem, i.e., laxing of the underlying tense vowel, after the suffix attachment. The strong boundary /#/ blocks the laxing rule. Thus the adjectives ending in -*ent* with the phonetically lax vowel in the stem must be specified in the lexicon for the underlying morpheme boundary /+/ before -*ent*.

A similar problem crops up in the analysis of adjectives ending in -*able*.

(14) [endʒoj]#æbl   [desīr]#æbl

    1   1   MSR$_c$

(15) [[æd+mīr]+æbl] [[kom+pǣr]+æbl]

    1   1   MSR$_c$

    1   1   AR

1 2   1   2   SSR

                      Aux. Reduc. I

Different underlying boundaries account for the difference in stress patterns as well as for the presence or absence of laxing of the stem final vowel in *admirable*, *comparable* vs *desirable*, but the adjectives in question must be marked for the type of boundary.

The replacement of /+/ by /#/ before -*able* is employed in accounting for the two variant stress contours of *analyzable*, i.e., *ánalyzable* vs *analýzable*.

(16) [ænælɪz]#æbl

    1   MSR$_c$

1   2   ASR

(17) [[ænæl+ɪz]+æbl]

    1   [158]

1   2   SSR

2   1   AR

The form with /#/ is anglicized since it follows the word based derivational pattern without any change of the stress contour. The one with /+/ is closer to the stem based derivational pattern comparable to that of *catholicize*, *communalize*, *capitalism* and termed 'latinate'.

A good example of the process of 'anglicization' that is taking place in the latinate pattern of -*able* adjectives are the pairs of words in (18a) and (18b) with /#/ and /+/ respectively.

(18) (a) repairable   (b) reparable
       dividable   divisable
       perceivable   perceptible
       extendable   extensible
       unrevokable   irrevocable
       readable   legible
       eatable   edible

Also, the pairs of (19a) and (19b), as well as the truncation of -*at* in (20) speak for the fact that we actually deal with two different derivational patterns. The forms with /+/ are latinate (b), those with /#/ are native (a).

(19) (a) compárable   (b) cómparable
       refútable   réfutable
       preférable   préferable
       dispútable   disputable

(20)   tolerable   / tolerate
      regulable   / regulate
      demonstrable / demonstrate

The latinate items in (18b) and (19b) show the suffix allomorphy -*able*/-*ible* as well as stem allomorphy (e.g., *perceptible*, *perceivable*), both of which are lexically determined. The latinate vs native Word Formation pattern of adjectives ending in -*able* is further confirmed by the prefix attachment in *irrevocable* vs *unrevokable*.

To sum up the discussion of adjectives derived from latinate prefixed stem verbs by means of -*ent*, -*able* attachment, we observe that the forms in question

are on the 'path to nativization' as they tend to be analyzed by the speakers as native formations, i.e., with /#/ replacing /+/ before the suffixes under consideration.

2.3. The adjectival suffix -ive is added to Romance verbs ending in -ate, -ute, and to latinate bisyllabic verbs of the prefix stem form. Some of the latinate bisyllabic prefixed stem verbs take the -ative form of the suffix. Generally, the forms with this suffix can be grouped into two distinct classes: those with -ive (21), and those in which -ive is preceded by -at (22).

(21) (a) expressive   (b) comprehensive   comprehend
         possessive   defensive   defend
         progressive   expansive   expand
         condensive   permissive   permit
         conversive   decisive   decide
         preventive   intrusive   intrude
         collective   corrosive   corrode
         prospective   invasive   invade
         detective   inductive   induce
         attestive   descriptive   describe
                             retentive   retain
                             recessive   recede

(22) (a) informative   (b) generative   (c) demonstrative
         attestative   confederative   alternative
         provocative   illustrative   illustrative
         exploitative   contemplative   contemplative
         comparative   indicative
         denotative   correlative
         derivative   constitutive
         repetitive   executive

The examples of (21a) do not show a shift of stress or any segmental variation before the suffix, so the boundary can be /#/. If /+/ was inserted before -ive in expressive, possessive, progressive the stress would be incorrectly shifted to the syllable which is penultimate before -ive, because the syllable before -ive is a weak cluster. /+/ would correctly account for the primary stress placement in the remaining examples of (21a), where -ive is preceded by a strong cluster. If we assume the suffix -ive to be nonneutral with respect to stress placement in these words we must posit an underlying double consonant cluster in expressive, etc.

Is -ive a neutral suffix in the examples of (21b)? It is as far as the stress pattern and the lack of laxing of the underlying stem tense vowel are concerned (cf. Hill Nessly 1975:100). But on the other hand there is a change of the stem final /t, d/ into /s/ before the suffix. This change is due to the underlying allomorphy of a class of lexically marked latinate stems (cf. Rubach 1984:45).

The /s/ stem allomorphy occurs before the suffixes -ory, -or, -is, -ive, -ible, all of which are stress changing and preceded by /+/. Thus the adjectives with the /s/ allomorphy of the stem final /t, d/ must have /+/ before -ive. As in the case of -able, we could think of -ive as of two suffixes, i.e., a neutral native suffix in the adjectives of (21a) and an anglicized latinate suffix in the adjectives of (21b). Further the suffix -ive preceded by /+/ has an allomorph -tive, e.g., inductive, descriptive, retentive. There is a laxing of the underlying stem tense vowel due to the operation of the laxing rule before consonant clusters which is a cyclic rule (cf. Rubach 1984:44) and as such applies across the morpheme boundary and never morpheme internally (cf. induc+tive, descrip+tive, reten+tive. The former examples provide additional evidence for /+/ in the adjectives of (21b). As for the laxing in recessive from the underlying //re+kēd//, there is no means to account for it unless we assume the underlying compound suffix //+æt+iv// with the morpheme //æt// deleted after the laxing has applied. Alternatively, we might assume recessive to be derived from the verb recess with the neutral suffix -ive attached. Because there is not any independent motivation available for either solution (cf. also succeed/successive) we must assume that the laxing rule responsible for the tense-lax vowel alternation before -ive (and also -ion) in adjectives (and nouns) derived from the latinate prefix //+kēd// verbs is lexicalized, cf success/successive, process/processive.

The adjectives in (22a) are derived from bisyllabic verbs terminating in a strong cluster and when the suffix -ive is added the stress pattern does not change but the tense vowel of the stem becomes lax by the Trisyllabic Laxing (henceforth TSL) (SPE:180, r. [19]). It is difficult to establish what the underlying representation of the suffix -ative should be. The vowel is tense for the reasons that are not essential to our analysis[6] but is /+/ to be placed between //æt// and //iv//? For the purpose of stress placement by the AR //æt// has no effect upon stress, as it is considered to be part of the suffix (SPE:42). In assigning primary stress by the AR the whole sequence //æt+iv// is omitted from consideration (SPE:126,128). In other words, if the AR applies in the context of //æt+iv// then it cannot reapply in the context of //+iv//[7]. Was //æt// not omitted from consideration we would have three cycles and an incorrect output with the primary stress on -at. Thus we must assume after the SPE that //æt// is a sort of stem forming argument but assigned to the external cycle. The suffix -ive preceded by -at is neutral only with respect to stress placement, since there is a laxing of the tense vowel of the stem as in comparative, derivative, repetitive. For the sake of generality, it must be assumed that the TSL applies also to the underlying tense vowels in

---

[6] The suffix -(at)ive is parallel to -(at)ion as in informative/information where the underlying tense vowel of //+æ// receives [1 stress] and also appears as tense phonetically.

[7] This complication comes as a result of the SPE assumption that there are no stress changing suffixes that are bisyllabic.

provocative, exploitative, denotative with a subsequent tensing by some later rule (cf. SPE:122). This is the reason for which *-ative* when affixed to a latinate base of the prefix stem form must be preceded by /+/ and not by /#/. But on the other hand it seems quite plausible that in the case of adjectives like *attestative, informative, provocative*, i.e., where there is no variation in the phonetic representation of the stem vowel, a reanalysis of the suffix is possible, so that /+/ is replaced by /#/, placing the adjectives in question within the native Word Formation component, cf *talkative*.

How to predict which stems must be followed by *-ative* and which by *-ive*? There is no account for it in the SPE as the bulk of Chomsky and Halle's discussion and argumentation is based on the analysis of verbs ending in *-ate*. There is no independent motivation of the formative /æt/ being omitted from consideration in assigning the primary stress by the AR, beside the fact that /æt/ does not receive stress in the course of derivation and it effects the TSL, so it obviously must belong to the suffix and not to the base.

It has been observed several times that the bases for the suffix *-ive* are parallel to those for the suffix *-ion*. Aronoff (1976:100−104) postulates three forms of the suffix *-ion*: the nonrestricted monomorphemic variant *-ation*[8], and two other restricted allomorphs, i.e., *-tion* and *-ion*. The choice between the two restricted variants *-tion* and *-ion* is phonologically determined by the feature [-coronal] and [+coronal] of the stem final consonant, respectively. The same regularity holds for the suffix *-ive*, cf. *explode, explosion, esplosive; express, expression, expressive* vs *induce, induction, inductive; describe, description, descriptive*. The verb *retain* must be marked for the restricted variant *-tion/-tive*, since the rule of *-ion* allomorphy excludes these suffixes before a coronal consonant unless it is stated that the coronal must be a noncontinuant.

When we compare the examples in (21a) and (22a) we observe that the stems underlying the adjectives of (22a) end in either a coronal or noncoronal consonant. So the choice of *-ative* after these stems is not restricted by any phonological factors. It is the suffix *-ive* whose attachment is restricted to stems ending in a coronal, but in order to prevent the stems of (22a) ending in a coronal, e.g., *denote, exploit*, from undergoing the *-ive* attachment we can use a cover feature such as [+latinate], which is the property of the prefixed stem verbs of (21a) and (21b). This feature becomes apparent when we apply the *-able* test to the verbs of (21a, b) and (22a). The verbs of (21) take the suffix *-ible* not *-able*[9], and are thus followed by /+/ not /#/. In other words there is

---

[8] Within the theory of cyclic phonology *-ation* can be by no means monomorphemic since the /t/ of //æt// undergoes the cyclic rule of Spirantization.

[9] Except *attestable*; there are two adjectival *-ive* forms derived from the verb *attest*: *attestive* (21a) and *attestative* (22a).

suffix allomorphy after the stems underlying the adjectives of (21) and for this reason their derivational pattern is more likely to be stem based. It becomes clear now that the boundary before *-ive* in the adjectives of (21a) is the morpheme boundary /+/, in spite of the fact that the suffix is neutral with respect to the placement of stress and effects no segmental variation in the stems underlying the forms in question. The stems of (21a) share the following properties: (i) they terminate in a strong cluster closed by two consonants, i.e. /-kt, -nt, -st, -ns, -ss/, where the final consonant is a coronal; (ii) they trigger the allomorphy rule of the suffix *-ible*; *-ible* allomorphy is also a property of the stems underlying the adjectives of (21b), which in addition undergo s-allomorphy of the stem final /t, d/ (s-allomorphy does not apply when /t/ is preceded by a consonant), e.g., *expressible, conductible, condensible, convertible, corrosible, inducible, admissible, comprehensible*. The above properties of prefixed stem verbs give us the content of the feature [+latinate] which is now by no means abstract. This feature accounts for the morpheme boundary /+/ before *-ive*, and the choice of this suffix is thus partly phonologically and partly morphologically determined.

The verbs underlying the adjectives in (21a, b) and (22a) are roughly of the same type, i.e., latinate prefixed stem verbs, but the differences in their rate of assimilation to the native Word Formation system are significant. The verbs which do not show any stem allomorphy or do not trigger any suffix allomorphy are followed by the nonrestricted variant of the suffix *-ive*, i.e., *-ative*, and can be optionally preceded by /#/, provided there are no phonological rules effecting segmental variation in the stem after the suffix attachment. In the latter case the boundary must be /+/ for both phonological and morphophonological reasons. As for the verb stems that undergo allomorphy rules or trigger some suffix allomorphy, they must be automatically followed by /+/ but in this case /+/ is a lexicalized property of the stem and not that of the suffix.

Verbs ending in *-ate* (22b, c) take the suffix *-ive* since the stem final consonant is [+ coronal]. Some of the verbs in (22b) can be optionally followed either by /+/ or /#/ before *-ive*. We find such option with the two variant pronunciations in (23), i.e., *contémplative* vs *cóntemplative*, also *illústrative* vs *íllustrative*, and (24) *génerative* vs *generàtive* where the contrastive stress pattern is [1−0 stress] vs [1−3 stress].

(23) $[[\text{kon}+\text{templæt}]_V+\text{iv}]_A$ $[[\text{kon}+\text{templæt}]_V \# \text{iv}]_A$

		1				1	MSR$_e$
	1	2			1	2	ASR
	2	1	3				AR
	3	1	4			1	3	SA

(24) $[[d\text{зenerӕt}]_v + iv]_A$ $[[d\text{зenerӕt}]_v \# iv]_A$

1				
1	2			MSR$_e$
1	3			ASR
1	4			AR

1			MSR$_e$
1	2		ASR
			AR
1	3		SA

The boundary $/+/$ also accounts for the first variant pronunciation of *pejorative* [pi:dзɔrətiv] derived from the underlying verb ending in *-ate*.

(25) $[[ped\text{зɔrӕt}]_v + iv]_A$

1		MSR$_e$
1	2	ASR
1	3	AR
1	4	SA

The boundary $/\#/$ does not account for the placement of primary stress in the other two phonetic variants of *pejorative*, i.e, [pi'dзɔrətiv] [pə'dзɔrətiv], unless we assume that the vowel in the syllable immediately preceding *-ive* is a nontense vowel. This sort of analysis bears no relation to the verbs ending in *-ate*[10].

(26) $[ped\text{зɔrӕt} + iv]_A$

1	AR

The adjective has no cyclic structure and can be reanalyzed without $/+/$ with the primary stress being assigned to the syllable which is the second before *-ive* by the MSR$_e$. Such analysis places it outside the latinate derivational system; the adjective becomes phonologically adjusted and has lost its morphological complexity. An alternative path to nativization of the adjective *pejorative* would be via the native Word Formation rules, if we derive it from a hypothetical verb *pejore*[11] (cf Hyman 1975:200).

(27) $[[ped\text{зɔre}]_v \# ӕt + iv]_A$

1	MSR$_e$

(28) $[[ped\text{зɔre}]_v + ӕt + iv]_A$

1	MSR$_e$
1	AR

Unlike the suffixes *-ize*, *-ism*/*-ist* and *-able*, which can be preceded either by $/\#/$ or by $/+/$ depending on the morphological structure of the base to which they attach, the suffix *-ive* is always preceded by $/+/$, with the remarkable exception of adjectives derived from verbs ending in *-ate*. As shown above

[10] In order not to complicate things too much we have omitted the Auxiliary Reduction rule I accounting for the laxing of /ӕ/ and Vowel Reduction changing /æ/ into [ə].

[11] Cf. the hypothetical vowel //e// in *commune* (N).

a reanalysis of $/+/$ into $/\#/$ is possible; the two types of boundaries accounting for the two alternative stress patterns, e.g. *illústrative, contémplative* with $/+/$ and *íllustrative, cóntemplative* with $/\#/$. The strong boundary $/\#/$ is also optional in the adjectives where either of the boundaries will produce the same stress pattern, e.g., *conféderative, remúnerative*, since the syllable preceding /ӕt/ is weak and stress retraction is effected by means of applying the ASR in the first cycle so that the second cycle assigning the primary stress to the second syllable before /ӕt/ is vacuous.

(29) $[[kon + feder\text{ӕt}]_v + iv]_A$

1		MSR$_e$
1	2	ASR
1	3	AR

There is no such option with the adjectives of (22c) where the syllable immediately before /ӕt/ is strong and *-ive* is a stress changing suffix here, e.g., *altérnative, constitutive*[12], *indicative, corrélative, exécutive*[13].

(30) $[[demonstr\text{ӕt}]_v + iv]_A$

1		MSR$_e$
1	2	ASR
1	3	AR

It remains unexplained, though, why the boundary $/\#/$ is optional in those *-ive* adjectives where the two types of boundaries produce two varying stress patterns as in *contemplative* and *illustrative*.

To be consistent within our analysis we must have a look at the morphological structure of three-syllabic verbs ending in *-ate*. The verb *illustrate* normally pronounced with the primary stress on the initial syllable does not have $/+/$ before *-ate*. The form with the second syllable stressed, used either as a verb or an adjective must be analyzed with $/+/$ before /ӕt/. Thus we have *illústrative* derived from //illʌstr + ӕt + iv// where the morphological complexity of the base explains the presence of $/+/$ before *-ive*. The other form *íllustrative* is more anglicized; there is no $/+/$ before /ӕt/ and the suffix *-ive* is preceded by $/\#/$. The cyclic structure of the former also explains the reduction of /ӕ/ to [ə] and the absence of this reduction before stress maintaining *-ive*. We assume parallel derivations for *contémplative/ cóntemplative*. The form with the second syllable stressed is derived from a morphologically complex

[12] The verbs ending in *-ute* are basically the same as those ending in *-ate* (Aronoff 1976).

[13] In the adjectives *correlative, executive, indicative* where the syllable immediately before //ӕt// is a weak cluster and the AR should assign the primary stress to the syllable which is the second before //ӕt//, Chomsky and Halle assume the prefix boundary $/=/$ in these verbs after //iN = //, //koN = //eks = // which blocks the application of case (i) of the AR allowing case (ii) which stresses the syllable immediately before //ӕt//.

base, hence it is less anglicized, and in addition it is semantically different from the one with the stress on the initial syllable.

(31) $[[ill\Lambda str + \ddot{æ}t]_V + iv]_A \quad [[kontempl + \ddot{æ}t]_V + iv]_A$

	1			1		[158]
1	2		1	2		SSR
1	3		1	3		AR
	4		1	4		SA

(32) $[ill\Lambda str\ddot{æ}t] \# iv \quad [kontempl\ddot{æ}t] \# iv$

	1			1	MSR_e
1	2		1	2	ASR
1	3		1	3	SA

It has now appeared that the occurrence of either $/+/$ or $/\#/$ before -*ive* in adjectives derived from three-syllabic verbs ending in -*ate* is a fully predictable matter. The analysis of -*ate* verbs as bimorphemic is not, however, always possible, especially in those cases where the verb does not have a cognate adjective or noun. This is exactly the situation we have with bisyllabic verbs ending in -*ate* and for this reason the type of boundary before -*ive* affixed to bisyllabic -*ate* verbs is not fully predictable either, e.g.,

(33) (a) reláte / rélative   (b) creáte / creátive
       donate / donative   vibrate / vibrative
       negate / negative
       locate / locative
       rotate / rotative

It has been observed in the SPE that bisyllabic verbs ending in -*ate* are of three types: (i) those which have [3 — 1 stress] and appear in the lexicon without $/+/$ before -*ate*, e.g., *create, negate, relate, vibrate*; (ii) those which have [1 — 3 stress] and appear with $/+/$ before -*ate*, e.g., *vacate*; (iii) those in which -*ate* is optionally preceded by $/+/$ or zero boundary, e.g., *locate, rotate, donate* and have [1 — 3 or 3 — 1 stress] pattern respectively. The formative boundary $/+/$ before $/\ddot{æ}t/$ plays the role of a classificatory feature in the lexicon assigned to some of the bisyllabic verbs ending in -*ate* so as to determine the correct placement of stress shown in (34)

(34) kreẽt   lõkẽt

1		1	MSR_e

vẽk + ẽt   lõk + ẽt

	1		1	[158]
1	2	1	2	SSR

Of the bases underlying the adjectives in (28a) only *locate* and *rotate* can be analyzed with $/+/$ before -*ate* and the stress changing occurrences of -*ive* in (28a) are unpredictable. It would be counterintuitive to assume that $/+/$ before

-*ive* is a lexicalized property of individual bisyllabic verbs ending in -*ate*. It rather seems to be a property of a whole class of verbs of $//C\bar{V}C\ddot{æ}t//$ segmental pattern showing varying rates of assimilation, i.e., with or without $/+/$ before -*ate*. These verbs should be lexically marked for the underlying boundary $/+/$ after -*ate*. The -*ive* attachment WF rule is thus totally unproductive with these verbs; its function is to motivate the existence of a foreign pattern in the lexicon, though on the other hand such forms as *creative, vibrative* which do not fit the above pattern, are analyzed with $/\#/$ before -*ive*. This may mean that the adjectives in question are actual coinages and the -*ive* attachment WF rule being only semi-productive is becoming nativized.

3. In conclusion let us sum up the most important points that have been made here about the occurrences of the two types of phonological boundaries, i.e., $/\#/$ and $/+/$ before the suffixes -*ize*, -*ism*/-*ist*, -*ent*/-*ant*, -*able*, and -*ive*.

It has been observed that words derived by means of -*ize*, -*ism*/-*ist*, -*ent*/-*ant*, -*able* and -*ive* attachment do not show equal rates of assimilation. Their assimilation rates are determined by the type of the boundary before the suffix, i.e., the word boundary $/\#/$ accounts for fully anglicized forms, while the formative boundary $/+/$ accounts for less nativized ones with a cyclic structure and certain phonological properties such as underlying suffix allomorphy and/or segmental variation in the stem resulting either from the operation of phonological rules or from underlying stem allomorphy. The evidence for the types of boundaries before these suffixes has been drawn from the consideration of stress rules, rules of segmental phonology and the occurrences of underlying allomorphy. It has been found that the type of boundary before any of the above suffixes is generally determined by the morphological structure of the base word, with an exception of certain small classes of stems that exist as independent words but at the same time must be lexically marked for the underlying boundary $/+/$ instead of $/\#/$.

The suffixes -*ize*, -*ism*/-*ist* and -*able* have become integrated within the native WF component, since they can attach productively to monomorphemic bases in which case they are preceded by $/\#/$. The same suffixes are unproductive and preceded by $/+/$ when affixed to morphologically complex bases that have $/+/$ between the stem and the suffix. Such forms have a cyclic structure and are to be regarded as less assimilated to the native WF rule component. Rules of stress derivation in complex verbs, i.e., R [158] and the SSR contrasted with the Main Stress Verb Rule (MSR_e) and the ASR for monomorphemic verbs support this claim. It is noticeable that latinate nouns and adjectives of the [stem + suffix] form can be analyzed as monomorphemic but they must have $/+/$ before the suffix when they serve as base words for deriving verbs ending in -*ize* and nouns ending in -*ism*/-*ist*.

There are basically two unrelated processes involved in the anglicization of latinate formations. The one consists in the reanalysis of a latinate cyclic structure with $/+/$ before the suffix into a native pattern with $/\#/$ and

a neutral suffix. The other involves the replacement of the noncyclic boundary by zero boundary or, to put it differently, consists in the phonological adjustment and loss of morphological complexity. On the basis of the analysis of such forms as *capitalism, capitalist, analyzable, comparable, illustrative, contemplative* etc., i.e., words that can be pronounced with the two differing stress patterns, it has been possible to provide counterevidence against the process of weakening of /#/ into /+/ that was allegedly believed to be at work in those words.

The facts concerning the occurrences of /#/ and /+/ before *-ize, -ism/-ist, -ent/-ant -able* and *-ive* as stated above explain why these suffixes are stress neutral with some bases and why they affect stress with the others.

REFERENCES

Aronoff, M. (1976), *Word Formation in Generative Grammar*, Cambridge Mass.: MIT Press.
Bauer, L. (1983), *English Word Formation*, Cambridge: Cambridge University Press.
Brame, M. K. (1972), (ed.), *Contributions to Generative Phonology*, Austin: University of Texas Press.
Brame. M. K. (1972), "The Segmental Cycle". in: M. K. Brame. (ed.). 62—72.
Chomsky, N., M. Halle (1968), *The Sound Pattern of English*, New York: Harper and Row.
Goyvaerts, D. L., G. K. Pullum (1975), (eds.), *Essays on The Sound Pattern of English*, Ghent: E. Story-scientia P.U.P.A. Scientific Publishers.
Halle, M., J. Keyser (1971), *English Stress, Its Form, Its Growth, and Its Role in Verse*, New York: Harper and Row.
Hill, K. C., L. Nessly (1975), "Review of the SPE", in: D. L. Goyvaerts, G. K. Pullum (eds.), 83—144.
Hyman, L. (1975), *Phonology: Theory and Analysis*, New York: Holt, Rinehart and Winston.
Nessly. L. (1971). "Anglicization in English Phonology", *CLCS* 7, 499—510.
Ohlander, S. (1976). *Phonology, Meaning, Morphology*, Göteborg: Acta Universitatis Gothoburgensis.
Ross, J. R. (1972), "A Reanalysis of English Word Stress", Part I, in: M. K. Brame (ed.), 229—323.
Rubach, J. (1981), *Cyclic Phonology and Palatalization in Polish and English*, Warszawa: Wydawnictwa Uniwersytetu Warszawskiego.
Rubach, J. (1984), "Segmental Rules of English and Cyclic Phonology", *Language* 60: 21—54.
Siegel, D. (1974), "Topics in English Morphology", unpublished Doctoral Dissertation, MIT, Cambridge Mass.

FRANK ANSHEN

INSULTS, NAMES, AND PHONETIC SYMBOLISM

One of the first things which is taught in introductory linguistic courses is the arbitrary relationship between the phonetic shape of a word and its referent. Certain exceptions are allowed in the case of onomatopoeia, and, in radical classes it is mentioned that high front vowels may be associated with small things as in *itsy-bitsy, teeny-weeny, polka-dot bikinis* but this is the limit. Sometime ago I stumbled on another case where phonetic shape seems related to meaning.

This is the case of racial epithets in English, words for racial, religious, or national groups which are used to express the speakers contempt for the group. A list of the 35 such terms which I am familiar with appear in Table 1. I have omitted descriptive phrases such as *Jungle Bunny* or *Christ Killer*.

Table 1: English Racial Epithets

Canuk	Gringo	Kink	Shiksa
Chicano	Guinea	Kraut	Spade
Chink	Haole	Limey	Spic
Coon	Hebe	Mick	Spook
Dago	Honkey	Nigger	Wog
Frog	Hunkey	Oakie	Wop
Gook	Jap	Pachuko	Yankee
Goy	Jig	Polak	Yid
Greaser	Kike	Rusky	

The most startling fact which emerges from Table 1 is that 28 of the 35 words have at least one velar stop, /k/ or /g/. In a sample taken from the lead story on page 1 of the April 12, 1984 edition of the *New York Times*, we find 15 of the first 35 nouns contain a velar stop. The preference for velar stops in racial epithets is significant at the .001 level by the Chi Square Test. Clearly English speakers, at least, have a preference for velar stops in these terms. The

fact that the three of the four terms of undoubted foreign origin which are on the list; Goy, Gringo, and Shiksa (Haole is the other one) contain velar stops suggests that the tendency may be cross linguistic, but the data are, of course, too sparse to support that hypothesis.

Another striking phonological fact from Table 1 is that 17 of the 18 monosyllabic terms on the list end in stops. This is contrasted with 9 of the first 18 monosyllabic nouns in the *Times* which end in stops. Here the difference is significant at the .01 level by the Chi Square Test.

Finally, we see that 7 of the 17 polysyllabic forms on Table 1 end with the syllable /iy/. It seems clear that the phonological form of English racial epithets is not randomly related to their use as insulting terms.

A second line of investigation is suggested by Otto Jespersen's introductory chapter of *Growth and Structure of the English Language* (1905). In a passage which is, to my knowledge unequalled in either anglophilia or misogyny, Jespersen (1905:2) lauds English as a great language, not least of all because of its masculine nature. In particular, Jespersen (1905:2–6) characterizes con-

Table 2: Women's Names

Adele	Debra	Janice	Lucy	Ramona
Aileen	Denise	Janna	Lynette	Rhonda
Alice	Diana	Jaqueline	Marcia	Rita
Allison	Donna	Jennifer	Margaret	Roberta
Alma	Doreen	Jill	Marilyn	Rosalind
Amy	Dorothea	Joan	Marjorie	Rose
Angela	Edith	Joanne	Martha	Roxanne
Anita	Elaine	Joy	Mary	Ruby
Ann	Eleanor	Jolyn	Maureen	Ruth
Annette	Elizabeth	Joyce	May	Sally
April	Ellen	Judith	Melanie	Sandra
Arlene	Esther	Julie	Melissa	Sarah
Audrey	Faith	June	Melody	Shari
Barbara	Fay	Karen	Merry	Sharon
Bernice	Gay	Katherine	Mona	Sheila
Beryl	Gina	Kathleen	Monica	Sheri
Betty	Ginger	Kathy	Nadine	Stephanie
Beverly	Glenda	Kay	Nancy	Susan
Bonny	Gloria	Kimberly	Naomi	Tammy
Brenda	Grace	Lana	Natalie	Tanya
Candace	Heidi	Laura	Nora	Teresa
Caroline	Helen	Laurie	Noreen	Tina
Cheryl	Holly	Laverne	Olivia	Valery
Christine	Hope	Lianne	Pamela	Vanessa
Clair	Irene	Lila	Patricia	Vicky
Collen	Iris	Lily	Patsy	Victoria
Connie	Isabella	Linda	Paula	Wanda
Corinne	Ivy	Lisa	Penny	Wendy
Cynthia	Jane	Lorna	Phyllis	Yvette
Darlene	Janet	Louise	Rachel	Yvonne

sonants as masculine and vowels as feminine. While this seems at first to be one of Jespersen's wilder flights of fancy, nothing that he says should be dismissed without some investigation. For this investigation, I decided to look at English given names. If vowels and consonants have sexual characteristics, names should seem to be the place to find them. There is a long tradition of humans feeling that names are a necessary property of their referents and the changing of the referent in some substantial way often requires the changing of the name. Thus Abram became Abraham when he entered into his covenant with God. Saul became Paul on the road to Damascus. Patricia Hearst became Tanya when she identified with her abductors. Women usually take their husband's last names upon marriage. Nuns take new names when they enter the convent. And Catholics add a name upon confirmation.

Further, American given names are already sexually segregated in three other ways. One is that there is very little overlap among names; a name is either masculine or feminine. Names which once were ambiguous such as

Table 3: Men's names

Aaron	Curtis	Guy	Leonard	Roger
Adam	Damon	Harold	Lester	Ross
Albert	Daniel	Harvey	Lincoln	Roy
Alexander	Darrell	Henry	Lloyd	Russel
Allen	Darren	Herbert	Luke	Ryan
Alvin	David	Herman	Malcolm	Samuel
Andrew	Dean	Hiram	Marcus	Scott
Anthony	Dennis	Howard	Mark	Shane
Arnold	Derrick	Hugh	Matthew	Stanford
Arthur	Donald	Isaac	Melvin	Stanley
Barry	Douglas	Ivan	Michael	Stephen
Bernard	Dwight	James	Miles	Steven
Blaine	Earl	Jarred	Milton	Stuart
Blake	Edward	Jason	Mitchell	Sy
Bradley	Edwin	Jay	Nathan	Terrence
Brent	Elton	Jeffrey	Neil	Thomas
Brian	Eric	Joel	Nelson	Timothy
Bruce	Ernest	John	Norman	Todd
Byron	Frank	Jonathan	Owen	Vernon
Calvin	Frederick	Joseph	Patrick	Victor
Carl	Galen	Justin	Paul	Vincent
Charles	Garret	Keith	Peter	Wade
Clayton	Garry	Kenneth	Philip	Wallace
Clifford	Gilbert	Kent	Ralph	Ward
Clint	Glen	Kevin	Randall	Warren
Clyde	George	Kurt	Ray	Wayne
Colin	Gerald	Kyle	Raymond	Wesley
Conrad	Gordon	Lance	Richard	William
Craig	Grant	Lane	Robert	Zachary
Cristopher	Gregory	Lawrence	Rodney	Zane

Beverly and Vivian have become almost exclusively feminine. Names which currently are ambiguous such as Leslie and Chris seem destined to become almost exclusively feminine. Other ambiguous names such as Gene and Jean or Francis and Frances are disambiguated by spelling. There seems to be an aversion to sexually mixed names. A second way names are differentiated is that women's names may be semantically transparent in ways in which men's names are not. Thus women may be named after virtues: Charity, Chastity, Constance, Faith, Glory, Grace, Hope, Mercy, Patience, and Prudence; after emotions: Blythe, Delight, Gay, and Joy; after vegetation: Blossom, Daisy, Fern, Flora, Heather, Holly, Iris, Ivy, Lily, Myrtle, Olive, Rose, and Violet; after time periods: April, Dawn, June, May, and Spring; and after minerals: Amber, Beryl, Coral, Crystal, Goldie, Jewel, Pearl, and Ruby. The vast majority of male names are not semantically transparent and none fit into these categories. The third way that names are sexually segregated in English is that female names may be derived from male names, e.g. Roberta from Robert, but the reverse process never happens.

Thus, for all of the reasons above, it seems appropriate to look at the phonological structure of English names for a preliminary test of Jespersen's claim. The following part of this paper is taken from data collected by Carol Larm (1983) for a paper entitled *American Given Names*. Larm took 200 names for each sex out of a book on baby names. After eliminating sexually ambiguous names and less common names, she had a list of 150 names of each sex. These names are given in Tables 2 and 3.

Let us first look at the final segments of these names. Table 4 shows the number of final stops versus other sounds for women and men.

Table 4: Final stops in women's and men's names

	Final Stop	Final Other
Women	6	144
Men	45	105

Chi Square = 35.9556, $df = 1$, p .0001

Men's names are over seven times as likely to end in stops as women's names and the difference is statistically significant. If we compare the figures for final stops with those for final vowels, we find that women's names are almost four times as likely to end with a vowel as are men's names. Again the difference is statistically significant.

Table 5: Final vowels

	Final Vowel	Final Other
Women	82	68
Men	21	129

Chi Square = 55.03, $df = 1$, p .0001

Jespersen's original statement concerned consonants, not just stops, however, if we look at the numbers of non-stop final consonants, we find that

Jespersen is supported, but not as dramatically as was the case when we looked at stops versus vowels.

Table 6: Non-Stop, Consonantal Finals

	+Cons	−Stop	Other
Women	62		88
Men	84		66

Chi Square = 6.47, $df = 1$, p .02

On the other hand, when initial segments were examined: vowel vs consonant, nasal vs other, fricative vs other, and stop vs other, no differences were found which were significant at the .05 level. Given the clearly different phonological tendencies for the final segments of women's and men's names, it is not clear why there are no clear differences at the beginning of names. It is worth noting that even at the beginning the differences are in the expected direction, women have more initial vowels (24 to 19) and men have more initial stops (53 to 40). Although neither result is statistically significant at the .05 level, the latter does show a $p = .1$. It is also true that English is one of those languages which consigns most of its bound morphology to the ends of words.

Another interesting difference emerges when we consider the length of women's and men's names, measured in syllables. Although the differences in mean syllable length seem fairly small: 2.1 for women vs 1.8 for men, Table 7 shows that the differences are indeed sizeable.

Table 7: Number of syllables in women's and men's names

# of Syllables	1	2	3+
Women	18	100	32
Men	45	98	7

Chi Square = 27.62, $df = 2$, p .0001

These differences are minimized when we look at the mean by the fact that about two thirds of all names for both sexes are bisyllabic. However for women, the rest of the names are predominately 3 or 4 syllables long, while for men most of them are monosyllabic and this difference is statistically significant. Men's fondness for short names and final stops may not be unrelated, certainly stops are the shortest of sounds. If we put our two most prominent facts together, that women's names are longer and that men's names tend to end in stops and look at those names which are monosyllabic and end in stops, we find 17 such male names but only one such female name (Hope).

We can get further confirmation of our findings if we consider some data on English phonologically derived nicknames, gathered by Holly Newall (1975). The most basic way to form nicknames in English is to cut the name to the first syllable and either add -y or -ie or not. This process is available to

both sexes, but women are more likely to add the ending than men. Thus, Fran
can come from either Francis or Frances, but Franny only from Frances.
Similarly both Patrick and Patricia get shortened to Pat but only Patricia can
be lengthened to Patty (I am aware of Irish-American Paddy, but that is
a different case). Chris is indeterminate sex, Chrissie female. It should be noted
that the addition of -ie or -y has the effect of both lengthening a nickname and
making it end in a vowel, both feminine characteristics in given names. On the
other hand, English forms a small number of nicknames by inserting a final -k
which does not appear in the given name: Hank, Chuck, Frank, Jack, Rick,
and Dick. This practice, which makes the nickname end in a stop, occurs only
with masculine names. We might wonder if -k occurs in masculine names for
the same reason it appears in racial epithets.

In this paper, I have tried to show that, in English at least, there are some
clear tendencies identifying phonological chacteristics with referential charac-
teristics of words. In two different areas of the vocabulary this tendency has
been demonstrated to exist and not to be a chance phenomenon. It remains to
be seen whether these phenomena are limited to English or can be shown to
exist across languages.

REFERENCES

Jespersen, O. (1905), *Growth and the Structure of the English Language*, Copenhagen: Munksgaard.
Reprinted, New York: Doubleday, 1955.
Larm, C. (1983), "American Given Names". Unpublished manuscript.
Newall, H. (1975), "A Study of Nicknames". Unpublished manuscript.

ANNA MICHOŃSKA-STADNIK

THE ACQUISITION OF WORDS IN THE FIRST LANGUAGE AND SOME IMPLICATIONS FOR THE TEACHING OF VOCABULARY IN A SECOND LANGUAGE

1. INTRODUCTION

This paper is an attempt to comment on the results of several research projects
in first language (L1) acquisition and in vocabulary learning in the second
language (L2). The main focus will be on what words and what semantic
concepts are first acquired by both L1 and L2 learners, and not on the kind of
strategies they employ. The reason is that there may be a wide variety of
techniques used by each individual learner, whereas the principal semantic
categories seem to remain basically the same, at least for L1 learners. Special
emphasis will be put on such concepts in L1 research as the Semantic Feature
Hypothesis and "coreness", and an attempt will be made to apply them to L2
learning and teaching.

2. FIRST-LANGUAGE ACQUISITION

McDonough (1981:107) observes that young children acquiring their early
speech use overextensions of some words or concepts. For instance "doggie"
may refer to all four-legged and relatively big animals. At the same time an
overuse of general concepts can be observed, for instance "big" may refer to
"tall", "long", "wide", etc. In the case of first language learners speech is
acquired together with semantic concepts.

Similarly, Brown (1970:12) says: "There are numerous cases is which
the child overgeneralizes the use of a conventional word". Subsequently he
mentions that overgeneralization seems to appear best for a child when a thing
is given its most common name. The most common name does not necessarily
mean the most concrete one. By "concrete" Brown means the most specific
one, by "abstract" — a more general name. He observes that in building his

vocabulary the child does not always proceed from the concrete to the abstract. For instance, a child learns "fish" first and "cod" later, he also learns "car" before "Ford", etc., but, on the other hand, he very quickly picks up names of concrete persons, close to him. Moreover, whenever a child invents a word for himself, it usually has a wide semantic range. The most common name, then, is the one that is at the level of usual utility in the child's life (i.e. the child has an opportunity to encounter this name more often than the others) and this name is usually given by adults when explanation is required. Sometimes the most concrete categories are at the level of usual utility and, sometimes, more abstract ones (Brown 1970:9).

The problems of overgeneralization or overextension and of 'the most common name' appear also in the work of J. and P. de Villiers. They observe that a child overextends many of his first nouns to objects outside their normal range of application for adults. This period of overextension usually lasts no longer than a few months, when the child is between 1 and 2.5 years of age (1978:126). Similarly to Brown, J. and P. de Villiers (1978:132) also point out that objects are named for the child by adults

> at an intermediate level of generality, usually at the level of which the objects are behaviorally equivalent for him. It is at this level that the child first acquires the common names for objects like cars, dogs, cats, chairs, tables and flowers. More general categorization or more specific names are only learned later on.

Eve Clark (1973) offers an interesting explanation of the overextension phenomenon. She first mentions H. Clark's article dealing with word associations. He argues there that each word has a list of semantic features which characterize completely its surface realization. For instance "man" possesses the following semantic features: [+Noun, +Det, +Count, +Animate, +Human, +Adult, +Male] (H. Clark, 1970:274). Later on (p. 285) he mentions that a child has only a partly formed feature list. Starting from that assumption Eve Clark develops her own theory of the child's acquisition of semantics in his first language. She calls it the Semantic Feature Hypothesis (1973:66). The Semantic Feature Hypothesis states that if some words share a number of semantic features (cf. H. Clark 1970), but one word has some additional, more specific features as well, all these words are regarded at a certain point in time as having the same meaning (E. Clark 1973:74). The child has only partial entries for a word in his lexicon; he classifies this word on the basis of only one or two features, rather than with the whole combination of them used by the adults. When the child grows up, he will add more and more features to the word and it that way he acquires semantic knowledge (E. Clark 1973:72).

Eve Clark quotes numerous research findings to prove that the Semantic Feature Hypothesis is the basis of the overextension in early speech. The best evidence seems to be that of W. F. Leopold, who kept a diary of the speech development of his bilingual daughter, Hildegarde. He observed that features

that are used as criteria for the overextension of words appear to be derived basically from the perceptual input. The principal criterial characteristics can be classified into several categories: movement, shape, size, sound, taste and texture (E. Clark, 1973:79). Leopold gives examples of his daughter's overextensions:

Category	Lexical item	First referent	Overextensions in order of occurrence
Movement	sch	sound of train	all moving machines
Shape	tick-tock	watch	clocks, all clocks and watches, gas meters, everything with dial shape
Sound	sch	noise of train	music, noise of any movement, wheels, balls
Taste	candy	candy	cherries, anything sweet
Texture	wau-wau	dogs	all animals, toy dog, soft home-slippers, picture of old man dressed in furs

Leopold does not give any example concerning size overextension but it is supplied by other researchers, for instance Taine (1977), quoted in J. and P. de Villiers:

Size	bebe	baby	other babies, all small statues, figures in small pictures and print

Leopold and other researchers who dealt with children between 1.1 to 2.6 years of age came to similar general conclusions about the maximum duration of the overextension period of one word (8 months), and about the categories overextensions fall into (E. Clark 1973:78—79). Finally, E. Clark (p. 75) asks the question whether the child learns "features that are general or specific to the meaning of a word first". The Semantic Feature Hypothesis would predict that it is the more general semantic features that will be acquired earliest. Here E. Clark does not agree with Brown who maintained that the child first learns words which seem to be the most useful for him regardless of their having more general or more specific semantic features. The best evidence for the solution of this problem was supplied by the experiment conducted by Anglin in 1977 and quoted in J. and P. de Villiers.

Anglin's children were all pre-school (2—3 years old). In one experiment children were shown three posters. Each poster contained four pictures. There were four different collies on one poster, four different dogs on the second one (one of which was a collie) and four different animals on the third poster (one of which was a dog). The children were asked to name not only each individual animal but also each whole set, for instance they were asked: "What are all of these together?" For an adult there would be three different sets: collies, dogs and animals. But children named all the collies and dogs as *dogs* and named the four different animals with their individual names. They could not use the names for the specific breeds of dogs, or the general category name, *animal*. In the same way children presented with posters containing, respectively, four

roses, four flowers and four plants could supply only the 'intermediate name': *flower*. Anglin, then, discovered that children first acquire category names at intermediate levels of generality (J. and P. de Villiers 1978:131). We can call them *core words*.

Here Anglin agrees with Brown that the name usually supplied by parents is a very practical one, being at the level of the child's behavioural needs. Anglin also investigated which general category names will have the greatest behavioural equivalence for 2–3-year old children. He asked parents and nursery-school teachers, and they came out with some main semantic domains which are referentially most essential for the child, e.g. food, animals, vehicles, furniture, plants, people (J. and P. de Villiers 1978:131).

To summarize, the child's early vocabulary, especially common nouns, is characterized at some stage by overextension of the meaning of one word into different ones within the same broad semantic category. The reason for this phenomenon, demonstrated by Eve Clark, is the child's inability to perceive all the semantic features of words. They judge words by one or two features only, and therefore those which differ in a certain detail are understood as having the same meaning (Semantic Feature Hypothesis). It is not always the most concrete term which is used by the child. Objects are named by parents or by children themselves not according to the principles of specificity or abstractness but according to the principle of immediate behavioural utility, i.e. things are given names that are most useful for the child at that stage.

3. SECOND-LANGUAGE LEARNING

Numerous instances of research into L1 acquisition of vocabulary have proved that during the initial stages of language learning, nouns are acquired in much greater numbers than other parts of speech (Hatch, 1983:63). The question now arises whether it is the same in the case of second language learning and how far, generally, are both processes alike as regards the lexical aspect.

Celce-Murcia and Rosensweig very rightly point out: "There is thus no doubt that over the past thirty years the teaching of vocabulary has been of secondary importance" (1979:241). Later they emphasize that vocabulary "should be recognized as a central element in language instruction from the beginning stages" (Celce-Murcia and Rosensweig 1979:242). Similarly, Hatch quotes Krashen, who stated that for adult L2 learners vocabulary is crucial since in a foreign country we never go around carrying grammar books but dictionaries and we consult them when in doubt. Early conversations are simply negotiations of meaning and when we get meaning across communication becomes possible, even without the knowledge of grammar (Hatch 1983:74). It is, then, important to find out what kind of vocabulary the L2 learners should basically require for communicative purposes. Celce-Murcia

and Rosensweig present an acount of Yoshida's observations of Miki, a 3.5 years old Japanese boy (age of arrival in the U.S). She was observing Miki mainly during his playtime with his American friend. Yoshida found out that Miki "had acquired productive use of 264 words after seven months of exposure to English in an English-speaking nursery-school" (Celce-Murcia and Rosensweig 1979:243). His English syntax was practically nonexistent, yet he was able to communicate effectively with his friend and other children. Almost 75% of Miki's words were nouns within the following seven semantic domains: 1. food and drink, 2. animals, 3. toys and play things, 4. vehicles, 5. outdoor objects, 6. people, 7. clothes. It appears, then, that children's basic semantic domains both in L1 and L2 are similar, if not the same (cf. Anglin's experiment above). There is nothing unusual in it, because children's needs are basically the same. However, Yoshida does not mention that she has ever observed an instance of overextension in Miki's second language development. When Miki came to the U.S. he was 3.5 years old and, according to E. Clark's evidence, he had already passed the stage of overextension in his native language. His cognitive development had already been advanced in Japanese and semantic features of the most useful words already coded. Thus, when he began learning his second language, he had to start from a completely different point than any L1 learner. His cognitive development did not go together with L2 acquisition. Bilingual children, however, seem to follow the overextension principle (cf. Leopold's daughter) along the semantic feature lines. It would appear, then, that the Semantic Feature Hypothesis cannot apply to L2 learning because older learners have the semantic concepts fully developed. However, the overextension principle can be relevant to L2 in another aspect. There is hardly ever the exact equivalence of words in L2 and L1, i.e. the number of semantic features is the same and only one or two may be different. Thus the meaning of a native word is often overextended to a foreign one and two words are used as equivalent. This is a common problem in translation, where the majority of errors are caused by that type of overextension.

L2 learners may also overuse certain words not because their semantic concepts are still undeveloped, but rather because of their individual communicative strategies. And here the L1 concept of core words, i.e. words at intermediate level of utility, for instance *flower* but not *rose* or *plant*, becomes significant for L2 learning. It could be argued that similarly to L1 these words are also more frequent and more useful in L2.

There seems to be yet another concept of 'coreness' at work in L2 learning: one that refers to the core meaning of an individual word and not to the level of generality in a semantic field (word coreness vs semantic coreness). Hatch describes an interesting experiment conducted by Kellerman in 1978, where he proved that in transferring meaning from L2 to L1 adult learners stick to the concept of word coreness. He tested psychological reality of coreness for lexical items. He had Dutch students sort out cards with sentences using

'breken', a word meaning 'to break' in their native language. They had to agree on some sense of *coreness* for 'breken' (Hatch 1983:71—72). After they had done that, he conducted his major experiment: 3 groups of students (210 Dutch secondary and university students learning English, 81 third- and fourth-year English majors, and 40 Dutch university students studying German) were asked to read sentences that used 'breken' and judge whether or not they thought the meanings they previously established could be transformed from the native language to the target language. "Their rank orders for judgments of transferability were then correlated to judgments of coreness" (Hatch 1983:72). It appeared that students found core meanings more easily transferable.

A follow-up study, again described by Hatch, was done by Jordens, also in 1978. "He asked a group of native speakers of English ($n = 29$) to rank sets such as the following for the most normal (core) to the least normal (noncore) meanings:

He laid his cards *face* down on the table.
They disappeared from the *face* of the earth.
The stone hit him in the *face*.
If you want to save *face*, stay away from the meeting.

After cheating on the test, Chris was ashamed to show his *face*.

A second set of native speakers ($n = 25$) were asked to rank the same set of sentences according to how idiomatic they believed the sentences to be. Finally, a third group of students ($n = 22$) were asked whether or not they thought the polysemes ("face" in the above examples) could be explained by the same word in each of the sentences... Almost all the responses of Ss in group 3 showed they were aware that they avoided transferring words in idiomatic expressions. Their ranking correlated highly with the rank orders of the second group and less well with the rank orders of the first group" (Hatch 1983:72—73).

The experiments described above were quite valuable because since then the notion core/noncore has been proposed as important in predicting ease of learning and transferability (Hatch 1983:73).

Very few practical suggestions for vocabulary teaching which in L2 take the concept of semantic coreness into consideration have been made so far. Some were presented by McEldowney (1975) and applied to both core vocabulary and core functions. There were also some by Celce-Murcia and Rosensweig (1979). The authors say that there were numerous word lists prepared by different authors (e.g. West 1953; Thorndike and Lorge 1944), based on both frequency and usefulness. They were to guide teachers in the selection of controlled vocabulary used in a beginners' course (1979:242). But still teachers, in their choice of vocabulary, must essentially concentrate on what is useful in terms of the level, age, needs and background of their own students.

Subsequently, the authors present a sample vocabulary syllabus for adult ESL general learners, which in fact, though it comprises approximately 2,000 words, does not differ from children's basic semantic domains:

numbers (cardinal and ordinal — for phone numbers, dates, addresses, age)
common foods
the telling of time, days of the week
months of the year, seasons
articles of clothing
eating utensils
parts of the body
furniture
family relationships
colours, shapes and sizes
cities, countries
common animals
common occupations
common actions/activities.

The authors generally suggest teaching words in lexical sets and semantic functions, i.e., closely related to one another in meaning and use. They propose problem-solving and role-playing as teaching techniques, because they concentrate on one particular 'topic' where words are related to one another in meaning and use (1979:249).

There is one more, extremely practical experiment referring to the core/noncore concept. It was carried out by Thomson and Chapman and concerned L1 but can be used also in L2 teaching. The experiment was related by J. and P. de Villiers (1978:129):

One two-year-old studied by Thomson and Chapman overextended *apple* in her speech to balls, tomatoes, biscuits and other round objects, but had no difficulty in correctly picking *the apple* from a set of pictures of spherical and round objects.

That signifies that she could comprehend more than she could produce. The same could be applied to L2 learning and teaching. Teachers could concentrate on core semantic vocabulary while teaching for production purposes; but for reception more extended vocabulary could be introduced.

On the whole, it has already been demonstrated that second language learning is not exactly like first language acquisition. It does not occur together with cognitive development and the L2 learner does not start from a linguistic zero. The new L2 concepts are contrasted with the L1 ones which have been already established. However, it has been observed that the Semantic Feature Hypothesis can also to some extent be relevant to L2 learning, mainly in word translations. The general semantic word domains and the concept of coreness might also find their use in the teaching and learning of vocabulary in L2.

REFERENCES

Brown, R. (1970), *Psycholinguistics: Selected Papers*, New York: The Free Press.

Celce-Murcia, M., and F. Rosensweig (1979), "Teaching Vocabulary in the ESL Classroom" in: M. Celce-Murcia and L. McIntosh (eds.), *Teaching English as a Second or Foreign Language*, Rowley, Mass.: Newbury House.

Clark, E. V. (1973), "What's in a Word? On the Child's Acquisition of Semantics in His First Language" in: T. E. Moore (ed.), *Cognitive Development and the Acquisition of Language*, New York: Academic Press.

Clark, H. H. (1970), "Word Associations and Linguistic Theory" in: J. Lyons (ed.), *New Horizons in Linguistics*, Penguin Books.

De Villiers, J. and P. (1978), *Language Acquisition*, Cambridge, Mass.: Harvard University Press.

Hatch, E. M. (1983), *Psycholinguistics: A Second Language Perspective*, Rowley, Mass.: Newbury House.

McDonough, S. (1981), *Psychology in Foreign Language Teaching*, London: George Allen and Unwin.

McEldowney, P. L. (1975), "Basic Working English for the Second Language Learner", *Ideas*, No. 31, June 1975.

Thorndike, E. L., and J. Lorge (1944), *The Teacher's Word Book of 30,000 Words*, New York: Columbia University.

West, M. (1953), *A General Service List of English Words*, Longman.

LITERATURE

MAŁGORZATA TREBISZ

THE SHORT OF THE NOVEL
AND THE LONG OF THE SHORT STORY

INTRODUCTION

The main aim of this paper is to explore the artistic and aesthetic possibilities of the literary sub-genre currently labelled as *nouvelle, novella, novelette, long short story* or *short novel*. The scope of the analysis will not allow any ultimate conclusions but perhaps it will help to formulate some tentative statements to be tested in the course of further study of the subject. The problem certainly is worth investigating since critics are far from unanimity and agreement in their discussions on the nouvelle, even on the point of terminology which at the moment consists of an index of somewhat contradictory items. It seems that one would have to think twice before applying the long short story or the short novel to a particular object of interest.

The strategy applied to this purpose might seem somewhat roundabout and confusing at moments, and so, for the sake of lucidity and easier comprehension, it is necessary to hint at the major points that this argument will follow.

The intended theoretical basis for the discussion is provided by the work of Styczyńska (1977), which in the analytical part deals exclusively with the works of the particular author but also includes a very exhaustive general theoretical introduction and a most competent concluding section. Though Styczyńska's method differs considerably from that of Mary Louise Pratt's in her article "The Short Story: the Long and Short of It" (hence the somewhat perverse title of this paper), where oddly enough the nouvelle is mentioned only once in a passing remark, both critics appear to be aware of the same traps and both

are similarly cautious about forming any absolute and unbending judgements and definitions. Pratt's standpoint seems very convenient for the present purpose. What she actually tests are the fluid lines of division between the short story as opposed to the novel, the latter being more fully investigated and defined thus allowing a description of the short story relative to it. Styczyńska is also aware of this fact and quotes after Steven Marcus that both the short story and the short novel "are adjunctive to the growth of the novel, and may be said to have begun to flourish only after the novel had become a major imaginative possibility" (1977:13). Pratt's "relative" approach suggests the definition of the short story in terms of the novel. Reasonably enough it seems to expect the nouvelle to fall somewhere in-between the two genres specified. Another positively "creative" aspect of Pratt's article is the possibility of defining something new in terms of the old and familiar.

The illustrative part will consist of the analyses of four works by Henry James: the novel *The Awkward Age*, the short story *The Middle Years*, and the two nouvelles (this term will require further specification later on) *The Aspern Papers* and *Washington Square*. Some justification must be given first of the choice of the author and then of the particular works. Henry James is a good writer and, to quote Percy Lubbock, "the best example is always to be found among the great, and it is essential to keep to their company" (1972:12). This statement, true as it is, needs further explanation:

1. James is very form-conscious and this paper will concentrate essentially upon form — form understood as Lubbock conceived of it in *The Craft of Fiction* (p. 40):

> The best form is that which makes the most of its subject [...] The well-made book is the book in which the subject and the form coincide and are indistinguishable — the book in which the matter is all used up in the form, in which the form expresses all the matter.

2. James is also an exquisite example of a writer openly indulging in self-criticism thus offering first-hand theoretical (critical) clues to his own work.

As to the works — these should be treated in two groups — *The Middle Years* together with *The Awkward Age* and separately the remaining nouvelles. The selection might seem arbitrary at first sight but there are some good reasons for the choice. The short story and the novel are the instances of what James admitted to be "false measurements", which, to translate his idiom, meant a certain incompatibility of subject and form. In a sense the author found them faulty in some respects and it should be profitable for this paper to scrutinize the issue at length and to test some of James's own reservations within these, to emphasize nonetheless brilliant works. They should serve as a good evidence in Pratt's procedure. The two nouvelles seemed adequate for the originally stated aim of this discussion. Perhaps the only observable strain exerted on the selection of the whole lot would be a certain parallelism of themes between the two groups which suggests additional points in the

analysis. However, to confess, the selection was quite independent and thus the visible similarities incidental. Coincidences of this kind are likely to occur within the scope of James's fiction and his characteristic themes. Notwithstanding this reservation, what will be said of *The Aspern Papers* and *Washington Square* should probably be true of the other well-moulded works of this kind.

I. THE SHORT STORY, THE NOUVELLE AND THE NOVEL

The argument in Mary Louise Pratt's article (p. 178) is based on the recognition of the short story's dependence on the novel — "discussions of the short story invariably call upon the novel as a point of comparison, or rather of contrast". By way of an illustration Brander Matthews's classic *Philosophy of the Short Story* and Edelweiss Serra's *Tipología del cuento literario* are brought to attention:

> The difference between a Novel and a Novelet is one of length only: a Novelet is a brief Novel. But the difference between a Novel and a Short-story is a difference of kind. A true Short-story is something other and something more than a mere story which is short. A true Short-story differs from the Novel chiefly in its essential unity of impression. In a far more exact and precise use of the word, a Short-story has unity as a Novel cannot have it [...]
>
> The novelist may take his time; he has abundant room to turn about. The writer of Short-stories must be concise and compression, a vigorous compression is essential. For him, more than for anyone else, the half is more than the whole. Again, the novelist may be commonplace, he may bend his best energies to the photographic reproduction of the actual; if he show us a cross-section of real life we are content; but the writer of Short stories must have originality, and ingenuity. If to compression, originality, and ingenuity he adds also a touch of fantasy, so much the better.

<div align="right">(Summers 1963:10–11)</div>

> The short story is an artistic construction and communication of a limited sequence of events, experiences, or situations according to a close correlative order which creates its own perception as a totality. The short story, then, is a limited continuity, in contrast with the "unlimited discontinuity" of the novel, according to Lukács [...]. The short story is a relatively closed order of internal associations and correlations, and the novel a wide open order; an order of estrangement and synthetic perception, the short story; an order of pluralization perceived more analytically, the novel.

<div align="right">(Serra 1978:11–12, Translation by Pratt)</div>

In Adela Styczyńska's work the section on critical definitions offers a whole range of attitudes towards both genres (1977:5–24). Since Pratt does not speak about the nouvelle it seems reasonable to quote the other source. Styczyńska admits that the distinction between the short story and the novel is clear but then the definition of the nouvelle is confused (1977:10). She quotes Mark Schorer's remarks about the nouvelle being a transition between the two genres (the short story and the novel).

> Between the two forms exists the third, the novelette, sharing the virtues of both. It can and usually does encompass moral development, but it cannot do so with the fullness or the grandeur or the social complexity that is possible to the great novel. Like the short story, it employs a more limited scene and cast of characters, it selects its incidents with greater

economy, it aims at precision rather than profusion of drama. These, the virtues of the short story, are great virtues, and a form which can at once explore these virtues and present the larger subject that the novel claims has, not surprisingly, become the preferred form of some of our most distinguished writers (1977:6—7).

However, Styczyńska is very cautious and aware of hasty conclusions. She writes about the terminological confusion — the terms nouvelle, novelette, short novel being used by some critics interchangeably, by others as referring to different types of the narrative art (1977:7). She warns against too sharp and absolute distinctions along lines similar to Pratt as will be demonstrated later on. These are her words summing up the theoretical part:

> No pedantic definitions can be imposed on any of the short fiction forms, but a distinction on general lines seems possible and useful [...]. It seems useful to distinguish between the short story and the nouvelle since creative writers themselves made us aware of the distinction and many critics accept it today. The frontiers between them, however, are often blurred and questions remain open for the discussion (1977:23—24).

To return to the initial distinction short story—novel, the point with which Pratt consistently disagrees throughout her analysis is that though the novel is called forth in order to be compared (contrasted) with the short story, the latter is still conceived as an autonomous genre and the novel is referred to only "as a rhetorical means for highlighting its [the short story's] particularities" (1981:180). What Pratt insists on is the fact that the emergence of "the modern short story" (by "modern" meaning these written at the beginning of the 19th century and since) was less the emergence of a new genre than the consolidation of a new relationship between genres — the novel being already well-established at the time of the rise of the shorter form. The structuralist approach teaches that genres are never completely autonomous and that any attempt to describe a genre must make reference to other genres. The relation of the novel and the short story is a hierarchical one with the short story dependent on the novel. Pratt (p. 180) explains this dependence in two aspects, conceptual and historical:

> The conceptual aspect is that shortness cannot be an intrinsic property of anything but occurs only relative to something else. The historical aspect is that the novel is and has been for some time, the more powerful and prestigious of the two genres.

Further argument follows these lines — smallness and bigness (of size and theme) of both are downplayed as they cannot be discussed as inherent properties.

Having established her critical stance, Pratt methodically discusses eight points ("propositions") at which, to her belief, an understanding of the short story is increased by the recognition of the dependent relation short story/novel. She specifies further the two aspects of that dependence:

a) conceptual — the short story has been tacitly seen as incomplete or fragmentary with respect to the totality and completeness of the novel;

b) historical — the short story has often redeployed materials that were

dissociated by the novel, often because they were devalued in literary or social terms (1981:182).

A brief summary of Pratt's propositions selected to be tested practically seems quite useful. Some of them have been slightly modified for the purpose of this paper.

1. "The novel tells a life, the short story tells a fragment of life" (1981:182—184). This statement refers to the novel / life short story/ "moment-of-truth" opposition. By the "moment-of-truth" is meant the consistently found point of crisis of the life of the central character resulting in the change in the character's life. A warning is addressed to the reader — the "moment-of-truth" is representative of the whole life — things can be deduced by implication backward and forward across one's whole lifespan.

2. Related to point 1 is the more conspicuous difference between the two genres: the short story relies on suggestion and implication while the novel uses explicit statement. Styczyńska, quoting Mark Schorer shares this point (p. 6):

> a good short story will actually be a symbolic statement of a view of life, a dramatic microcosm [...], a vision of the world, this will come to us as an impression chiefly.

Caution demands to make the reservation that the novel's very nature is not too big for the "moment-of-truth" structure; nor is it impossible for the short story to tell a whole life.

3. The short story deals with a single thing, the novel with many things (1981:184—185). The short story's "singleness" as understood in traditional criticism (single effect, character, event, dramatic episode) is believed to have been mistakenly considered a critical feature of the genre. It did occur frequently in practice but this was conditioned by the novel, against which the short story had to look for what was smaller and lesser. Styczyńska makes a similar remark on the same point: "but modern novel, too, often has these characteristics" (1977:10).

In the analysis of particular texts the singleness of the dramatic episode and the further point on orality will be frequently considered jointly to describe the dramatic structure typical of drama and eventually ascribed a characteristic of the short story.

4. The short story is a sample, the novel is the whole hog (Pratt 1981:185—186). This point is related to No 1 and it refers to the short story's tendency of transgressing its own limits and referring outside itself to some more complete whole. The title for instance of the day-in-the-life variety (A Day in the Country) is only a signal of some larger general category. This tendency towards generalization is opposed in practice to the novelistic tradition which rests upon the specific, the individualized. This "exemplary" or "illustrative" trend in the short story might be traced back to the medieval exemplum or the biblical parable.

5. Orality (Pratt 1981:189—190) — a conspicuous and consistent tendency in the short story, however, not to be totally excluded from th novel. It ranges

from the oral-colloquial speech forms in the language of narration, through oral narratives embedded in the story, to the extreme of the whole of the text's form being represented speech. As opposed, the novel tradition has always been toward the affirmation of its own writtenness (e.g. recovered manucripts, epistolary techniques, journals etc.). This is also true of the short story where these written formats are likewise common. Styczyńska also enumerates a whole range of techniques employed in the short story resulting in the great variety possible within the genre (1977:17)*.

A very good question could be put forward at the close of this section. How does this summary contribute to the main purpose of this paper? The subject — to remind oneself — is the nouvelle — the least spoken of so far. Pratt's reasoning though hints at many interesting aspects:

1. It shows to what extent the actual production of short stories is conditioned and limited by the tradition. This means that since the novel had developed first (but had it really? — a careful examination of the antecedents of both could lead to some surprising discoveries) it took the possession of the central area (to use this metaphor) and only the peripheries remained to be picked up later by the short story. Nothing but habit accounts for this situation, and the positions of the two genres might be easily shifted.

2. Pratt demonstrates that the short story's conformity to the current tradition is not all that indispensable and that the golden middle would be achieved if both genres profited from each other — here for the moment the hierarchy of dependence might be actually forgotten.

3. The literary potential of the short story is pointed out — the possibilities of its expansion — technical, thematic, formal. At the same time the tendency towards condensation in some of the existing novels is observed.

II. *THE AWKWARD AGE* AND *THE MIDDLE YEARS*

Nothing is more charming than suddenly to come across something sharp and fresh after we've thought there was nothing more that could draw from us a groan. We've supposed

---

* The remaining propositions that Pratt (1981) discusses are as follows:

The novel is a whole text, the short story is not (186—187). A minor point but worth observing. Novels are printed as autonomous texts whereas stories rarely occur in this manner — they are either published as collections or fragments in magazines thus blurring the reader's perception of their being independent entities. Styczyńska quotes cycles of short stories and the novelette as two possibilities of the short story approaching the novel (1977:7, after Olga Scherer-Virsky).

Subject matter (187—189) — experimentation (parallel to the one in the form of the short story) in the introduction of new (possibly stigmatized) subject matters.

Narrative traditions (190—191). Different traditions are currently ascribed to both — history and travel to the novel — anecdote and folklore to the short story. Pratt warns though that this is not only a question of short forms evolving into other short forms — it is possible to write novels kept within the parable or fairy tale conventions and examples are numerous enough.

Craft versus art (191—192). Here the short story's and the novel's status as skill-based craft and creativity-based art, respectively, is discussed.

---

we've had it all, have squeezed the last impression out of the last disappointment, penetrated to the last familiarity in the last surprise; then some fine day we find that we haven't done justice to life. There are little things that pop up and make us feel again. What may happen is after all incalculable. There's just a little chuck of the dice, and for three minutes we win.
(*The Awkward Age*, p. 237)

These are the words expressed by Mitchy, in the original context (his conversation with Nanda) they are meant as a flippant beginning of their talk. But they are also true in a more general sense. "The little things" that do pop up from time to time, that are perceived by the writer and then transformed by him into a work of art are referred to as the anecdote (1962:XXVIII). In his preface to the selfsame novel James comments upon the fact:

I shall encounter [...] no better example, and none on behalf of which I shall venture to invite more interest, of the quite incalculable tendency of a mere grain of subject-matter to expand and develop and cover the ground when conditions happen to favour it (p. 98).

The Awkward Age germinated from a single London impression, which at the beginning seemed to make "a scant show for a «thick book»" and so originally James intended to write a thin one, its proposed scale remaining within the limits of "a small square canvas" (1962:100). The final result, however, was something that the author called "a monster" admitting that it was a case of his false measurements between the form and the subject. Anecdote for James is then that "grain" of the subject-matter and must not be confused with the independent short narrative (*Dictionary of World Literary Terms* 1970:14).

The novel provides a perfect material for the examination of the intertwining conventions of both the short and long narrative forms. The subject-matter is the initiation of a young girl into the London society. Nanda Brookenham is the living image of her grandmother. She attracts the interest and affection of Mr Longton — her grandmother's devoted suitor from the past. Longton is the outdated outsider in the fashionable London world, but he perceives and understands more than it might appear at first. To help the girl he bestows a sum of money on her to serve in future as her dowry. Longton tacitly acts as Nanda's matchmaker, his pick being Vanderbank — a good friend of the Brookenham's, a frequent guest of Mrs Brookenham. Nothing actually results out of Longton's scheming and ironically (as if to make up for his failure with the grandmother) Nanda chooses to stay with Longton. To increase the story's pique, the girl, young as she is, is perceptive enough to discover the link between her intended suitor — Vanderbank, and her own mother.

The span of represented time is about a year (its progression is carefully hinted throughout the story). If one were to consider the subject in terms of life or "moment-of-truth" it would be more likely to speak of the latter, except that it is sore truth for a number of people, and though the action is enclosed within the twelve months it is the consequence of the past and suggests the future.

The Awkward Age is dramatic both in form and narrative techniques — written almost exclusively in dialogue. Lubbock comments upon this aspect:" it is a clean-cut situation, raising the question of its issue, and by answering the question the subject is treated" (1972:192). Both aspects — formal and technical — should be discussed. The dramatic structure of the novel is quite formidable, it develops along the classical Aristotelian pattern — the climatic scene probably the one at Mrs Brookenham's parlour (1969:200—213) acted between the hostess, Vanderbank and Mitchy, where the whole intrigue is actually settled between the three — interestingly enough Nanda and Longton — the parties most concerned — are excluded. The pace of action would be perhaps too slow for the stage, but it is not loose, and looseness James deplored (1962:XVI). This particular dramatic feature is everso eagerly insisted upon in the shorter forms — whereas the novel, traditionally conceived — is allowed greater laxity. The structure is responsible for the "singleness" and condensation of action.

As to the narrative techniques — the prevailing method is that of represented speech and the pictorial elements can be treated as stage directions thus the whole being suggestive of a "drawing-room" comedy evoking a very bitter laughter. The dialogue is absolutely bubbling.

Since we know that *The Awkward Age* developed contrary to James's initial plans, one might speculate if it could stand the test of being converted into a play. Still, it is a novel — dramatic (to use Muir's distinction in *The Structure of the Novel*) — and the author allows himself ample time for the presentation of the characters. Pure drama would require greater progression and condensation (Brooks, Heilman 1953:29—30). The play would not stand the trick James plays upon Nanda. She is the central figure but her appearance is withheld until the scene is well prepared for her by the other characters. As to the scanty "stage directions" — the narrative parts — their omission would certainly be a regrettable loss for the whole work. They touch such nuances, they contain such exquisite irony as could never be rendered in a physical presentation. To take the absolutely mute figure of Lady Fanny for whom only the narrator speaks:

> Every aspect of the phenomenon had been freely discussed there and endless ingenuity lavished on the question of how exactly it was that so much of what the world would in another case have called complete stupidity could be kept by a mere wonderful face from boring one to death (1969:188).

On the other hand — though at the moment it is running ahead of the conclusions — one might try to compress it into the nouvelle form — blasphemous as this experiment might seem. The time span is comparable to that in *The Aspern Papers*, on the other hand, Nanda's case is much more general than that of Catherine Sloper, Nanda approaches the type of Daisy Miller. Certainly the story would need some cuts, elimination of a number of characters. The ending could be made more definite (as it frequently happens

in the nouvelle) and more conspicuously related to the climatic scene. It could be even conceived as a twist ending and there are at least two options. It is remembered that Longton's generosity has never been stated. Vanderbank could be brought to the point of proposal — only to discover how disproportionate the sum was. It this case Longton — the old-fashioned, provincial crank would teach this jet-set a lesson. Or, to consider the other possibility, Nanda's choosing to marry Longton, making up for this previous disappointment, punishing the others.

What should then the final judgement of the novel be? It is brilliant, it magnificently incorporates the features of various genres resulting in an original entity. James in his commentary on this work openly admits that the writer should learn a good lesson from the kind of experience he had when writing *The Awkward Age* where the results did not fully meet the intensions:

> — it helps us ever so happily to see the grave distinction between substance and form in a really wrought work of art signally break down. I hold it impossible to say, before *The Awkward Age* where one of these elements ends and the other begins. I have been unable at least myself, on re-examination, to mark any such joint or seam, to see the two discharged offices as separate. They are separate before the fact, but the sacrament of execution indissolubly marries them.
>
> (James 1962:115—116)

If *The Awkward Age* is a case of uncontrollable expansion then *The Middle Years* is an instance of bending the subject to a smaller and lesser form — the short story. The motives were entirely mercenary — such was the publisher's demand. James's comment upon the story is very significant — it touches both the question of development and forshortening called by James "rich compression" or "compressed accretions" and discussed by R. P. Blackmur in his Preface to *The Art of the Novel* (1962:XXVIII—XXIX):

> The form of *The Middle Years* is not that of nouvelle, but that of a concise anecdote: whereas the subject treated would perhaps seem one comparatively demanding "developments" — if indeed amid these mysteries, distinctions were so absolute. (There is of course neither close or fixed measure of the reach of a development, which in some connexions seems almost superfluous and then in others to represent the whole sense of the matter; and we should doubtless speak more thoroughly by book had we some secret for exactly tracing deflexions and returns).
>
> (James 1962:232—233)

W. S. Maugham would certainly have said to it that the writer "must earn his bread and butter", and that there is nothing disgraceful in it. "The competent author can write a story in fifteen hundred words as easily as he can write one in ten thousand. But he chooses a different story or treats it in a different way" (1958:149—150). He would also quote the example of Maupassant's *L'Héritage* written in a double version of a few hundred words and in several thousand where in the first there is not a word too little and in the second not a word too much. This is actually the only opportunity in this paper to develop Pratt's point on craft versus art. As it appears there have

been some justified reasons for such an attitude towards the short story — to name but one — excessive commercialization.

As it is, *The Middle Years* consists of some 5550 words and it tells about Mr Dencombe — a writer. To improve his failing health Dencombe is forced to retreat to a health resort. His latest book — freshly printed — arrives. The work, as it turns out, is his greatest success especially that he will never be able to write any more because of his illness. Incidentally Dencombe gets involved into a conversation with a stranger — Doctor Hugh, employed as a personal physician to a Countess and her companion Miss Vernham. Hugh, ignorant of Dencombe's identity begins to speak enthusiastically about his writing. Emotion, excitement are detrimental to Dencombe's health. Hugh, on learning who the stranger actually is, resigns from his position at the Countess's and stays with the writer.

Is Dencombe a type (generalization characteristic of the short story) or an individual (true of the novel)? He might be James himself as Tony Tanner tacitly suggests (1979:52), on the other hand he is a type in the sense of James's particular use of the "type of the historical or contemporary great" which gives the artist freedom of treatment (actual figures are binding) as R. P. Blackmur explained in the Preface to *The Art of the Novel* (1962:XX). Styczyńska recognizes this story within the group dealing with the writer and his critics (1977:121−123).

Does the story deal with the writer's whole life or with the "moment-of-truth"? It concentrates upon a specific period of his life — the publication of his work, its success, Doctor Hugh's appreciation and Dencombe's illness. It seems that the only important illumination for Dencombe is that

> A second chance — that's the delusion. There never was to be but one. We work in the dark — we do what we can — we give what we have. Our doubt is our passion and our passion is our task. The rest is the madness of art (1961:150).

It is hard to state in what direction this implication goes in the writer's life — into the past or into the future? There is hardly any future for Dencombe and he did seize his first chance well enough. This recognition touches upon very broad questions — art, creation, success. In this sense the story transgresses its own bounds and acquires a parabolic dimension. One would have to think whether the scope of the story actually does justice to the theme. This is perhaps the point where a certain extension would be possible.

The dramatic quality of the work has been recognized easily to hint but at the working of dramatic irony — Hugh's initial ignorance of Dencombe's identity.

The question of the story's "singleness" could be disputed. On the one hand there is Dencombe and his "monumental" theme and on the other Doctor Hugh who emerges from a very specific, individualized background to which he is committed. In fact the latter theme appears first in the story and accounts for the reader's surprise at finding out what the "superior" point of the story

is. Is it then some formal fault, contradictory intensions, looseness? Hugh's conflict with the Countess and Miss Vernham on behalf of his friendship with Dencombe enriches the story with another "parabolic" meaning — the two themes unite together in the person of Hugh, they illustrate the choice he is to make between the material and spiritual — eventually art wins. From this point *The Middle Years* is a masterpiece. The master should be admired for the variety of techniques he employed, the richness of implications incorporated into such a tight and short form. In her appreciation of the same story, Styczyńska writes: "The main difference between James's short story and nouvelle is in the development of a »rich subject«, while in the short story like *The Middle Years* it is compressed" (1977:122). The "rich subject" is compressed — but it is a remarkable compression and none of the "richness" is lost.

III. *WASHINGTON SQUARE* AND *THE ASPERN PAPERS*

Definitions have already been numerous enough in this paper but since the heart of the matter is being approached slowly the question of the very term nouvelle, as to be used here, should be settled. In the case of James, the preference to use the word nouvelle is justified as he used it himself in reference to his own works.

In the definition by Ostrowski we read that the short novel is interchangeable in English with the novelette, nouvelle, long story, long short story, novella (by comparison to a medium length Renaissance narrative). The length ranges from 50 to 100 pages frequently divided into chapters. The action of the nouvelle appears of an epic character (however, in the case of James this point would not be true — he is an essentially "dramatic" writer), it presents a sequence of events or a gradual development of characters in a comparatively long period of time (long at least to the reader's perception). It concentrates upon a central figure. Then there follows a brief historical outline where Henry James is listed among the English representatives of the genre. Tendency towards increased realism is pointed out (1969:129−131).

In his preface to *The Lesson of the Master* James confesses that invited to contribute to *The Yellow Book* he was promised to have enough space for any idea he might have wished to express, which relieved him from having to struggle "under the rule prescription of brevity at any cost" (1962:219). In his comments upon the form he ultimately chose he says:

> Among forms, moreover, we had had, on dimensional grounds — for length and breadth — our ideal, the beautiful and blest nouvelle

and contrasts it with short story:

> In that dull view a "short story" was a "short story", and that was the end of it. Shades and differences, varieties and styles, the value above all of the idea happily developed, languished, to extinction, under the hard-and-fast rule of the "from six to eight thousand words" — when for one's benefit, the rigour was a little relaxed. For myself, I delighted in the shapely nouvelle (1962:220).

In the present analysis an attempt will be made to demonstrate that the terms nouvelle and short novel needn't be equal — the nouvelle approaching the rigour of the short story (thus the closest English translation long short story), reserved here for *The Aspern Papers*; and the short novel imitating the long form as in *Washington Square*. Actually there is no agreement reached in this issue. *The Aspern Papers* appears once in the collection introduced by Dean Flower as the nouvelle. In the volume with the introduction by R. P. Blackmur it is considered the short novel. *Washington Square* is labelled consistently enough as the short novel so it will serve as a good contrast for *The Aspern Papers*.

In the introduction to the collection of *Great Short Works of Henry James* Dean Flower writes (1966: VII — VIII):

> The difference between the two forms of fiction seems to us now slight or academic; to James the distinction was important. The short novel, for him, was always grounded in a particular society and a particular time, because social observation was part of the novelist's task. In his nouvelles, on the other hand, James chose to strip away social amplitude and limit the number of characters. Such differences resulted partly from length: [...] But the length reflected other differences in purpose. For the nouvelle "a strong brevity and lucidity" and "a certain science of control" were required; its distinctive motive was to generalize. Instead of a specialized, documented social world, James's nouvelles present paradigms of experience. Disengaged from novelistic notion of place and history, they suggest parables, archetypal stories, even allegories. Yet consistently they offer a completely credible, realistic surface.

The size of *Washington Square* illustrates perfectly the argument of both Styczyńska (1977:11) and Pratt (1981:180) that quantitative standards are not sufficient to define a genre. James's work, though smaller in size, is in fact strikingly similar to Balzac's *Eugénie Grandet* — parallelisms to be easily perceived both in their structure and themes. Oddly enough, a close inspection of the full-length novel by Balzac would yield more common features with the shorter forms (e.g., the more conspicuous and definite point of the story) than a similar comparison of *Washington Square*.

Washington Square similarly to *Eugénie Grandet* tells the story of Catherine Sloper — the daughter of a rich and successful physician — and her unsuccessful courtship with Mr Townsend. For Catherine Townsend was to stand for the only love in her life — to her father he appeared as a regular fortune hunter, which actually the story proves to be true at the moment of his resignation when Dr Sloper threatens to disinherit his own daughter — and money must have been the greatest of Catherine's charms. Catherine — credulous, inexperienced, blindly devoted to Townsend — never actually recuperates from this disappointment.

The story deals with Miss Sloper's life, focussing naturally on the period of her courtship with Townsend. It is hard to speak of it being a "moment-of-truth" for Catherine. Catherine does not change — she simply matures. The elderly matron at the end is very much the girl from the beginning but older. Catherine is unable to surprise just as Eugénie did not.

Is it possible to generalize about Catherine's experience? Here the problem becomes more complex — it seems impossible on the level of generalizations in *Daisy Miller* or *The Awkward Age* where the degree of specificity allowed nonetheless certain conclusions about the condition of a specific group of girls — social, moral etc. Catherine is a class for herself — shy, awkward, slightly backward. James minutely describes her dress, gestures, he takes his time slowly to allow the reader a fuller acquaintance with the girl. Epic is mixed with drama — but the pace of the latter is slower, the reader is well prepared to take the climactic scene when Townsend finally retreats. The rest is predictable — Catherine is wounded but there are no shocks to follow. This is how *Washington Square* bends towards the traditionally conceived novel.

On the other hand, it is very monothematic though there is a whole host of characters of various spirits introduced — to name but the bitterly sarcastic Dr Sloper; the simple-minded, almost Quixotic Mrs Penniman; Mrs Montgomery (Morris's sister) whose appearance threatens for a moment a beginning of a counter-theme between her and Dr Sloper which would actually be very much in place in the traditionally described nouvelle.

What is the subject-matter of *The Aspern Papers*? The place of action is Venice where in a secluded and neglected palace lives Miss Bordereau — in her youth closely related to a famous poet Jeffrey Aspern — and her niece Tita. An unnamed editor-critic attempts to recover the existing unpublished papers and other souvenirs left in Miss Bordereau's possession. The strategy is very roundabout — at first the editor manages to be accepted as the ladies' tenant, then, by compliments, presents, and money he wins Miss Tita's confidence and Miss Bordereau's — enigmatic as she is on the point of the Aspern papers — gradual concessions to bargain with him. The story ends up with Miss Bordereau's death — partly at least precipitated by the critic's behaviour — and the final destruction of the documents by Miss Tita since the editor would not accept the documents with her — the papers had to go.

Certainly the purpose was not to recount some current gossip related to either Byron or Shelley. To find their story the reader would have to consult some fictionalized biography of the sort Kenyon produced (*The Absorbing Fire*). It is the story of the unnamed publishing agent, Miss Bordereau and Miss Tita. The dim figure of Aspern and his genius suggests the theme of the artist. James admits in the Preface that the story as he conceived it referred to general problems — the relation with the past, the charm "of a final scene of the rich dim Shelley drama played out in the very theatre of our own »modernity«" (1962:163). The story is about ethics, morality, human relationships as most critics would point out (Blackmur, Flower), and in this sense it is suggestive of the parable. However, interest in the story's structure does not seem sufficient — if it is a parable, it is laid out in a perfectly knitted drama with fragments of splendid epic. Tony Tanner in his somewhat class-room analysis points at some interesting aspects — the first person narration

increasing the reader's interest in the story-teller (also increasing the sense of orality), the comicality of the editor-critic's attempts to seduce either of the ladies. He also notices a great deal of bargaining going on in the book, provoked by Miss Bordereau (1979: 31 – 34), but he fails to do Miss Bordereau justice. Styczyńska's analysis (1977: 123 – 138) exhausts the question of narrative techniques — epic and dramatic, points to the act-like division within the story; superbly hits at the figure of Juliana who

> does not fit any pattern, she is impenetrable and unpredictable, a perfect match for the scheming editor. They are like highly skilled chess players, each trying to surprise his partner by an unexpected move (1977: 131).

One of her comments towards the end of the analysis is (1977: 135):

> Thus in the dénouement the author achieves a superbly ironic effect which was carefully prepared from the beginning. Mrs Prest's warning and her prophetic words "They'll take all your money without showing you a scrap" are now confirmed by the development and solution of the conflict. As in drama every detail matters, the utterances of the characters acquire a full meaning in the total effect of the nouvelle.

It is worthwhile to concentrate on this "ironic effect". On one occasion Styczyńska says that the dialogue in *The Aspern Papers* conveys more to the reader than to the narrator. In a sense two dramas are being played simultaneously — one to the perception of the reader whose knowledge and awareness are superior, and the other which is related by the editor-critic. This method multiplies the implications of the final irony, makes this story a real masterpiece of compression, discipline and control on the one hand and richness and variety on the other. To analyse this "other" drama it would be most interesting to concentrate upon Miss Juliana Bordereau and to see what influence her person exerts upon the whole story. Viewed as the central figure, the organizing principle of the story's structure a very tight pattern can be discovered. The story of Bordereau's past relationship with Aspern and her obstinate silence on the subject serves to emphasize her strong and consistent personality. The lapse of time is necessary to demonstrate it. Her concession to admit a stranger into the house for purely financial reasons might seem surprising at first but quickly enough the theme is continued — if she was ready to sacrifice for Aspern, it soon appears that she will make sacrifices for Tita — and she will remain equally consistent. There are many hints of it. During the very first meeting between Juliana and the editor when the rent is being settled, the proprietress utters unexpected, to use the narrator's expression, "whimsical speeches":

> "She has very good manners; I bred her up myself!"
> (Miss Tita)
> [...]
> "She had a very good education when she was young. I looked into that myself", said Miss Bordereau. Then she added, "But she has learned nothing since".

> "I have always been with you," Miss Tita rejoined very mildly, and evidently with no intention of making an epigram.
> "Yes, but for that!" her aunt declared with more satirical force. She evidently meant that but for this her niece would never have got on at all (1966: 39 – 40).

The reader has to wait only a couple of pages to have his premonition confirmed when Miss Tita says: "The money's for me [...]. She takes care of me. She thinks that when I'm alone I shall be a great fool, I shall not know how to manage" (1966: 44 – 45). The reader might actually grasp the clue that the Aspern papers are meant as a kind of security or even a dowry of Tita's. But the bargain will have to be square since Juliana has already proved herself very demanding in her dealings with the editor — to quote the answer of Tita's to the question of her becoming Bordereau's legate (1966: 82):

> "[...] she has left all her documents to you!"
> "If she has it's with very strict conditions", Miss Tita responded, rising quickly, while the movement gave the words a little character of decision.

And the story develops unfailingly along this line. There is of course the surprising twist-ending at first sight suggestive of Maupassant's practice but in the case of James it serves a more conscious purpose — the careful reader who looks back from this point sees that the final decision was predictable.

In one of his comments on the short novel (understood here as the nouvelle) Marcus writes (1966: XIV):

> in contradistinction to the short story it works "by penetration in depth and by the full realization or complete exhaustion of particular themes". The short novel achieved its fullness and richness of realization not merely by accretion of additional detail or the introduction of subsidiary though related themes. Every detail that was added was doubly or triply relevant to the action and idea being developed, every subsidiary theme was in multiple resonance with the central drama and extended and amplified and deepened its implications.

So far as this definition is quoted here, it is true of *The Aspern Papers*.

CONCLUSION

On re-examination of the paper it might seem that no distinctions are possible — and even if there had been any they had been sufficiently blurred. In fact this is how James felt re-reading his own works and trying to theorize about them. As he said one had to judge by the book — normative approach inhibits the creative process and it is not the question of what the critics would like the nouvelle to be but what the individual writers make of it. Still, as it appears, the choice of the form is conscious — it is either imposed or seen as the most adequate for the treatment of a particular theme, the most effective.

For James, to repeat, the nouvelle meant to have "an idea happily developed" (1962: 220), and this statement unites the tendency towards expansion and variety characteristic of the novel (the development of the idea),

and compression and singleness of drama and the short story (the idea itself). Dean Flower speaks of the nouvelle's credible and realistic surface though significance of places and history is different than in the novel. Particulars might be forgotten at interpretation but while reading a specific setting unfolds (19th century Venice), individualized characters make their appearance, expository information is exhaustive (a good deal is told about all three characters of *The Aspern Papers*), parallel themes might be introduced (the editor-critic's simultaneous conquest of both ladies), the characters are allowed freedom of movement and a change of place of action altogether (the critic's withdrawal from Venice), the flow of time is leisurely. Clever manipulation with the point-of-view, epic descriptions, summary to speed up the pace and scenes at crucial moments are all subservient to the idea or the point that the writer desires to make. The latter are responsible for the dramatic structure of the narrative — conflict, increasing tension leading to the climactic moment after which the dénouement follows. Alike in drama, and the short story eventually, a particular situation is explored. It is up to the author how well he manages to control all the other elements so that they contribute best to a better presentation of that central idea. Length should be the consequence of that control and adequate sense of proportion. On finishing reading *The Aspern Papers* one feels that the initial problem or question have been fully answered and the solution has been additionally emphasized by the final twist-ending.

REFERENCES

Balzac, Honoriusz (1984), *Eugenia Grandet*, Katowice: Książka i Wiedza.

Brooks, Cleanth Jr., Robert B. Heilman (1953), *Understanding Drama*, New York: Holt.

Dictionary of World Literary Terms. Ed. Joseph T. Shipley (1970), London: George Allen and Unwin.

James, Henry (1959), *The Aspern Papers. The Spoils of Poynton*, New York: Dell Publishing Co., Inc.

— (1961), "The Middle Years", in: *Fifteen Short Stories*, New York: Bantam Books, 232—250.

— (1962), *The Art of the Novel. Critical Prefaces*, New York: Charles Scribner's Sons.

— (1966), "Washington Square", in: *Great Short Works of Henry James*, New York: Harper and Row.

— (1969), *The Awkward Age*, New York: W. W. Norton and Company Inc.

Kenyon, F. W. (1974), *Cień i światło. Życie Lorda Byrona*, Warszawa: Czytelnik.

Lubbock, Percy (1972), *The Craft of Fiction*, New York: The Viking Press.

Marcus, Steven (n.d.), *The World of Modern Fiction*, 2 vols., New York: Simon Schuster. Excerpted in: Styczyńska 1977.

Matthews, Brander (1901), *The Philosophy of the Short Story*. Excerpted in: Summers 1963.

Maugham, William S. (1958), "The Short Story", in: *Points of View*, London: William Heinemann, 148—188.

Muir, Edwin (n.d.), *The Structure of the Novel*, New York: Harcourt, Brace and World Inc.

Ostrowski, Witold (1969), "Short Novel", *Zagadnienia Rodzajów Literackich* 12, z. 1 (22): 129—131.

Pratt, Mary L. (1981), "The Short Story: the Long and the Short of It", *Poetics* 10: 175—194.

Schorer, Mark (1967), *The Story. A Critical Anthology*, Englewood Cliffs, N. J.: Prentice Hall. Excerpted in: Styczyńska 1977.

Serra, Edelweiss (1978), *Tipología del cuento literario*, Madrid: Cupsa Editorial. Excerpted in: Pratt 1981.

Styczyńska, Adela (1977), *The Art of Henry James's Nouvelle. A Study of Theme and Form*, Łódź: Wydawnictwo Uniwersytetu Łódzkiego.

Summers, Hollis (ed.) (1963), *Discussions of the Short Story*, Boston: D.C. Heath. Excerpted in: Pratt 1981.

Tanner, Tony (1979), *Henry James*, 2 vols. In the series "Writers and Their Work", London: Longman Group Ltd.

MARIA GOTTWALD

EPIC DIMENSIONS OF *AT THE BAY* BY KATHERINE MANSFIELD

Can the term 'epic' be applied to short fiction? Most definitions provided by dictionaries and encyclopaedias of literature describe *genus proximum* of the epic as a poem and, apparently, such definitions contain some generalizations from the study of the *Iliad*, the *Odyssey* and their ancient and modern imitations. More recent scholarship judiciously abstains from defining the epic — this is the attitude of E.M.W. Tillyard and of Paul Merchant; the latter concludes his survey of the epic forms with the blunt statement that "the word 'epic' will perhaps never quite be defined" (1979:93). Both authors, however, admit the applicability of the term 'epic' to the novel which is now generally recognized as the most vigorous, most dynamic modern genre, capable of almost infinite development.

Still the short story in *not* a novel and as the epic has authoritatively been referred to as "a narrative of *some length*"[1] is there any point in applying the term 'epic' to one of Katherine Mansfield's long short stories? The question of length seems to be debatable. Significantly, the term 'miniature epic' was actually applied by Northrop Frye in relation to lyric poetry.

> A lyric poem on a conventional theme achieves a concentration that expands into a miniature epic [...] Thus *Lycidas* is a miniature scriptural epic [...]. In modern times the miniature epic becomes a very common form: the last poems of Eliot, of Edith Sitwell, and many cantos of Pound belong to it (1957:324).

Since the epic is not confined to verse form — and Tillyard has convincingly demonstrated that prose medium became more congenial to the epic since the rise of the modern novel in the 18th century (1966:5) — and since mere length does not seem to be the essential characteristic of the genre what are then its distinctive features? Or, to use Tillyard's more modest term, what are the basic "epic requirements"? Those listed by him are: (1) high quality and high seriousness, (2) amplitude and variety, (3) rigorous orga-

---

[1] Italics mine. M. G.

nization and control of materials, (4) the choric requirement by which he understands the representative character of the attitudes, actions and habits of a large group at the time it is described. Of these the third (rigorous organization) might be dispensed with as it has been presupposed by the first (high quality). To amplitude and the choric requirement we could add instead what might be tentatively called the existential dimension which determines the universality of the epic. Tillyard does not specify it as a separate requirement yet he seems to be aware of it when he writes that the epic attains its full growth "when the narrowly timeless is combined in a unit with variegatedly temporal" (1966:13). Two more requirements seem to be pertinent to the epic genre: that of the epic distance as postulated by Mikhail Bachtin (1970:212) and that of the cyclical movement as described by Northrop Frye (1957:316—317).

Having in mind these requirements let us now examine Katherine Mansfield's work. *At the Bay*, written between July and September 1921, belongs to the New Zealand series of stories based on autobiographical materials, the writer's recollections from childhood and her own family going into the shaping of the Burnells, Mrs. Fairfield and Beryl, their relatives and acquaintances. Anthony Alpers in his biography of K. Mansfield (1954) has identified practically all the characters in the story, from Mrs. Dyer, Katherine's beloved grandmother to Nathan children, the originals of Samuel Josephs. The setting of *At the Bay* is also authentic: it is the Eastbourne Day's Muritai shore of Wellington harbour, where Katherine's father Harold Beauchamp rented summer quarters for his family in the 1890's (Gordon 1974:372). The nostalgic overtones felt in the presentation of the characters and their surroundings are indicative of the distance, both spatial and temporal, which is regarded to be characteristic of the epic.[2]

The plot of the story, presented in twelve episodes, covers the events of a single day extending from dawn to late evening hours. The pressure of the order of nature upon human activities reveals the importance of the cyclical movement. Human life with its leisurely, holiday-making pace is tuned up to the rhythm of the day. With the exception of self-important Stanley Burnell who keeps rushing and storming, man and beast alike are shown engaged in a series of activities appropriate to the natural clock, as marked by the progress of the sun and the tidal movement of the sea. Thus the early morning witnesses the sheep trotting to their pasture, escorted by the shepherd and his dog; then the women folk in the Burnell house are getting breakfast ready and attending to the children; breakfast over and Stanley departed, a party consisting of three little girls shepherded by their grandmother and ac-

---

[2] We do not share Bachtin's somewhat exaggerated insistence on the epic distance being "absolute" (1970:212) or P. Merchant's emphasis on "the awareness of historical perspective" (1979:2). For our purposes E. M. W. Tillyard's view that the epic is expressive of "most serious convictions, feelings, the accepted habits [...] *in or near the author's own time*" (1952:12; italics mine, M. G.) seems more expedient.

companied by their aunt Beryl set out to the beach while Linda Burnell and her baby son rest in the garden. The midday sun beating down "hot and fiery" (224)[3] sets the siesta time — the beach, the gardens and the road are deserted, people are resting in their bungalows with the blinds drawn in. The afternoon with the heat gradually relenting occasions social activities: Alice, the Burnells' servant girl is going to have tea at Mrs. Stubbs'; the Trout boys join the Burnell girls after tea to play in the washhouse; their father Jonathan who comes to take the boys home, is drawn into a long conversation with Linda Burnell. The evening brings Stanley back home and then the whole household quietly settle down for the night. Beryl alone stays awake to indulge in an imaginary encounter with her dream-lover, her reverie being eventually blighted by Harry Kember. The final episode is rounded up with a glimpse at the moonlit sea at rest and thus provides a direct link to the opening episode with its description of the "sleepy sea" (205) before sunrise, creating a sense of continuity and reiterative movement.

The social range of *At the Bay* is wider and more differentiated than in any other story and comprises the characters belonging to all major age groups, from the Burnells' baby to Mrs. Fairfield. The Burnell family together with old Mrs. Fairfield and Beryl are, naturally, the focus of attention, but the Trouts, especially Jonathan, are assigned important part as well. The Kembers and the Samuel Josephs figure prominently, especially as they provide a striking contrast in manners and *mores*. Alice the servant girl and Mrs. Stubbs the shopkeeper to whom the whole of section 7 is devoted, appear as distinctive personalities. Even the anonymous shepherd and Kelly the coach driver have their place in the overall pattern of the Crescent Bay community.

Animals, too, are part of it, especially the pets which are carefully individualized and seem to ape their masters' attitudes; "the first inhabitant" (207) of the colony to appear in the morning is the Burnells' cat Florrie, a fastidious haughty female scornful of the sheep-dog, that "coarse, revolting creature" (207); Snooker the Trouts' dog echoes the grim humour of Jonathan when at noon he stretched himself in the middle of the road as if he had decided to commit suicide and "was only waiting for some kind cart to come along" (225); the old sheep-dog Wag, the shepherd's expert assistant prudently chooses to ignore Florrie's hostility as he thinks her "a silly young female" (207).

The anthropomorphic bias in presenting the animals makes the human context even more conspicuous. For the Burnell daily routine reflects the social and moral order of that basic social group, the family wherein functions and duties whether assigned or self-imposed, are duly observed. The household follows the familiar pattern of the Victorian patriarchal family. The supreme

---

[3] All page references to the text of the story *At the Bay* are taken from the *Collected Stories of Katherine Mansfield*, 1948, London: Constable.

authority and the privileged position of the husband and father remain undisputed: Stanley, by virtue of being the bread-winner chooses to assert his superiority by exacting, not altogether tactfully, menial services from his mother- and sister-in-law. He evidently resents the fact that the family are enjoying their summer holiday while he must do his job (he would hardly admit that his enterprising spirit and ambition for promotion have found a natural outlet in his professional career). Stanley's sense of self-importance is shocked when combined efforts of the household members fail to produce his cane before he leaves for the town. He thinks them unfeeling and ungrateful:

> Would nobody sympathize with him? [...] The heartlessness of women! The way they took it for granted it was your job to slave away for them while they didn't even take the trouble that your walking-stick wasn't lost (212).

Stanley's indignation, self-pity and his self-asserting gimmicks compelling all the women in the house to attend to his petty comforts may strike us as grotesque. For the family the strain of his exigencies is almost palpable though nobody dares to voice protest or discontent. The release from the tension is manifest when everyone is assured that Stanley is gone:

> Oh, the relief, the difference it made to have the man out of the house. Their very voices changed as they called to one another; they sounded warm and loving and as if they shared a secret. [...] There was no man to disturb them; the whole perfect day was theirs (213).

This general rejoicing after Stanley's departure is the only sociably acceptable way of expressing the women's mute resentment of male domination. Characteristically enough, the lower class women are more outspoken on the subject. Mrs. Stubbs who entertains Alice to tea and descants upon her deceased "poor dear husband" will emphatically conclude that "all the same [...] freedom's best" (231). Alice herself voiced her sentiments earlier when she was washing up after breakfast. Mindful of Stanley's fussing over his walking-stick Alice reacts violently as soon as she feels secure:

> 'Oh, these men!' said she, and she plunged the teapot into the bowl and held it under the water even after it had stopped bubbling, and as if it too was a man and drowning was too good for them (213).

On the other hand, her mistresses' subordination to conventional code of morals and manners, in addition to their complete economic dependence upon man, so keenly realized by Linda and Beryl, makes them bear up without demur. Only in her heart of hearts would Linda admit that her marriage has proved too big a burden for her even though she loves her husband. Stanley's pressing demands, the necessity to appease and reassure him have exhausted her strength. And on top of all there is her constant dread of having children. Linda silently rebels against the burdens of maternity which have made her an invalid:

> It was all very well to say it was the common lot of women to bear children. It wasn't true. She, for one, could prove that wrong. She was broken, made weak, her courage was gone, through child-bearing (222–223).

Yet outwardly Linda is a complying, loving wife, always ready to respond to Stanley. Her encounter with her brother-in-law Jonathan will reinforce her allegiance to her husband as she reflects it is to Stanley that she owes her superior position: "The Trouts were for ever running out of things and sending across to the Burnells' at the last moment". For Jonathan, however intelligent, talented and attractive, was ineffectual — "only an ordinary clerk" whereas Stanley, an energetic and successful businessman "earned twice as much money as he [Jonathan]" (236).

The story is thus not a mere description of daily routine of a typical middle-class household in New Zealand in the closing years of the nineteenth century; it also affords an insight into the mechanism of contemporary life, and even if the outlook presented happens to be pre-eminently feminine it still fulfils one of the basic requirements of the epic in transmitting "the feeling of what it was to be alive at that time" (Tillyard, 12).

In addition to that the story is also endowed with what has been referred to as an existential dimension in the sense that it raises some fundamental questions of universal interest and on these the very quality and seriousness of the work are largely dependent. Amazingly enough, in the context of the commonplace daily routine the characters are provoked to consider such perennial problems of human existence as those of life and its meaning, and of death.

A blunt and simple fact of the inevitability of death is first presented against the peaceful and serene background of the midday siesta in the course of a leisurely chatter between a little girl and her grandmother. Kezia is bewildered when she is told that everyone must die. She simply would not believe that the general law may apply also to herself: "'Me?' Kezia sounded fearfully incredulous. [...] 'But, grandma! [...] What if I won't?'" (226). And when she comes to realize the rule may as well concern her grandma, Kezia gets alarmed and insists that this must never happen: "'*You're* not to die.' [...] this was awful. 'Promise me you won't ever do it, grandma,' [...] 'Promise me! Say never!'" (227). Kezia goes on pleading and cajoling her grandmother until their hugging and kissing finally results in their forgetting "what the 'never' was about!" (227).

The childish defiance, totally pointless, is here contrasted with the old woman's quiet acceptance of death as a universal law: "It happens to all of us sooner or later" (226). Moreover, her long experience had taught Mrs. Fairfield that grief caused by the loss of those we love, will gradually wear away. She candidly admits that the recollection of her dead son no longer makes her sad. For "life's like that" (226), she says. This recognition of the ultimate facts seems to be the source of Mrs. Fairfield's composure and strength: quietly and efficiently she runs the household, mothers the children, and tends to everybody's needs, invariably offering warmth and protection. The unruffled serenity of stoic wisdom of Mrs. Fairfield is not the share of

her daughter Linda. Surrounded by the gorgeous efflorescence of her garden the young woman is watching little yellowish flowers dropping from the manuka tree: "Each pale yellow petal shone as if each was the careful work of a loving hand" (221). Linda's elation is, however, checked by the reflection, that no sooner have the flowers achieved perfection that they are blown away, scattered and wasted. The realization that human life follows the same pattern makes her experience even more poignant: "Lying in her cane chair Linda felt so light; she felt like a leaf. Along came life like a wind and she was seized and shaken; she had to go" (221). This acute sense that everything in nature is being rushed to its doom by an irresistible force stirs a mute protest: "Why then," she asks herself, "flower at all? Who takes the trouble — or the joy — to make all these things that are wasted, wasted. [...] It was uncanny" (221).

Linda's brother-in-law is also haunted by the idea of life's passing away far too soon to enjoy the world. Jonathan's insect metaphor does not merely objectify the shortness of life. "I've only one night or one day, and there's this vast dangerous garden, waiting out there, undiscovered, unexplored" (337); the image of a moth or a butterfly that has flown into the room and is hopelessly struggling to get out, the image he uses to reinforce his earlier image of life imprisonment, also conveys the idea of the limitations imposed by adopting a certain course of action; in Jonathan's case it is the drudgery of his routine work of an office clerk: "to spend all the best years of one's life sitting on a stool from nine to five, scratching in somebody's ledger! It is a queer use to make of one's [...] one and only life" (237).

Both Jonathan and Linda know there is no possible escape. Religion can afford no comfort as the God Linda is reminded of while she is watching the glorious sunset with the beams of light piercing through the cloud (which sight she instantly associates with the familiar picture of the Eye of Providence), is not the good, loving Father but the vindictive Jehova of the Old Testament from whom no mercy is to be expected at the Last Judgement;

whose eye is upon you, ever watchful, never weary. You remember that at His coming the whole earth will shake into one ruined graveyard; the cold bright angels will drive you this way and that, and there will be no time to explain what could be explained so simply (239).

Yet neither Linda nor Jonathan, however helpless or embittered they might feel, would actually challenge their respective fates. The very realization of their lot combined with self-awareness seems to alleviate the painful experience. Trapped as one is in what has been labelled *la condition humaine*, one has to face and endure it. Jonathan even believes this knowledge presupposes a kind of fortitude, for man fights against the odds and he cannot desist it: "It's not allowed, it's forbidden, it's against the insect law, to stop banging and flopping and crawling up the pane for an instant" (238). It is the quality of life then that makes it worth living.

In Katherine Mansfield's story the basic movement which is essential to the epic, is not to be found in the external action which follows the cyclical pattern

of the daily routine of a typical middle-class family of the period; it is rather to be traced in the inner experience of the characters. It may result in the child's emotional shock, in disappointment and recoil of the young girl whose romantic dreams of an ideal lover/husband are unexpectedly shattered. Or else, particularly with the rebel characters, Linda and Jonathan, it may be the acceptance of man's destiny amounting to re-affirmation of life's essential value, eventually achieved through the process of self-reflection and sensitive response to nature.

The existential aspect, as presented in *At the Bay* is not altogether gloomy nor is the tone tragic. There is a steady rhythm of alternation of dark and bright, sad and serene, pensive and joyous moods, and the ability to commune with nature that the characters are richly endowed with, makes life not merely tolerable but enjoyable. The very light of the setting sun that reminded Linda of the implacable Deity, can also fill her with wonder and delight:

it seemed to Linda there was something infinitely joyful and loving in these silver beams. And now the sound came from the sea. It breathed softly as if it would draw that tender joyful beauty into its own bosom (239).

Katherine Mansfield's commitment to life as it is, even though beauty and vigour are doomed to fade away, and death is inevitable, appears to be the culmination point of her vision. Human lot is approached as a part and parcel of the wider natural process, subject to its laws of development and decay. In *At the Bay* the writer seems to have arrived at a unique blend of what she was regarding as her two essential "'kick offs' in the writing game" (Murry 1951:149) — on the one hand, the sense of hopelessness and doom that are so conspicuous in *Miss Brill* and the *Life of Ma Parker*; on the other hand, the sense of peace and serene joy which accompanied the creation of *Prelude*. In *At the Bay* her bitter cry against life's cruelties appears to be softened and toned down, but by no means obliterated. It remains a contrapuntal element in the rich music of life.

REFERENCES

Alpers, A. (1954), *Katherine Mansfield: A Biography*, London: Cape.
Bachtin, M. (1970), "Epos i powieść". *Pamiętnik Literacki*, 61; 3: 203–230.
Frye, N. (1957), *Anatomy of Criticism. Four Essays*, Princeton, N. J.: Princeton University Press.
Gordon, I. A. (1974), *Undiscovered Country. The New Zealand Stories of Katherine Mansfield*, London: Longman Group.
Mansfield, K. (1948), *Collected Stories*, London: Constable.
Merchant, P. (1979), *The Epic*, London: Methuen.
Murry J. M. (1954), *Journal of Katherine Mansfield*, Definitive Edition, London: Constable.
Tillyard, E. M. W. (1966), *The English Epic and Its Background*, New York: Oxford University Press.

DOROTA GLOWACKA

THE GROTESQUE AS THE MEANS OF PRESENTING THE SYSTEM IN JOSEPH HELLER'S *CATCH-22*

In 1961. *Catch-22* made a triumphant entry onto the reading market and it has intrigued literary criticism ever since. Numerous have been the attempts to categorize that unsurpassed novel, but the great variety of labels attached to it proves that *Catch-22* defies classification although it undoubtedly shares a lot with the major literary movements of the sixties.

Thus, the following paper does not aim at contributing to the large bulk of criticism which often underestimates Heller's achievement by labelling it. Instead, it focuses upon the grotesque in *Catch-22* and presumes that the analysis of the novel in terms of this literary category is essential to perceive that Heller has in view not only the satirical presentation of military bureaucracy, but also the denouncement of any System which threatens man's freedom, overpowers him, deprives him of his identity and reduces him to a meaningless part of a huge, inhuman computer.

The grotesque appears to be the most appropriate vehicle for presenting the System since it best reveals its underlying absurdity and chaos masked under the appearance of order. The grotesque unveils the mechanisms of the System's functioning so as to subjugate man and carry him in the direction of the inanimate. On the other hand, it simultaneously provides a new angle for viewing reality and allows of assuming an adequate attitude towards the menace of ubiquitous patterning.

The suspicion that some massive, inhuman force structures our life, that some omnipresent System malevolently orders all things rendering man incapable of controlling his life himself, became the haunting motive of the American novel of the sixties and onwards (see: Tanner 1971:15).

The greatest threat the System poses to a human being lies in its intention to, as Norbert Wiener (1954:20) suggests, "achieve an absolute organization which will eliminate human vagaries and subordinate every individual to a pattern of mechanical efficiency". The System is closed and, as such, it is

subject to the law of entropy in accordance with which it is inevitably speeding towards chaos, destruction and, eventually, death. It usually tends to disguise chaos in the appearance of order to attract the victims, and however ordered and perfectly structured it may seem to be, its objective is to rigidify human reality.

The dread, often hatred, of the entropic System is a recurrent motive in such outstanding novels as Ken Kesey's *One Flew Over the Cuckoo's Nest* (1962), John Hawkes' *The Lime Twig* (1961), Thomas Pynchon's *V.* (1963), William Burroughs' *The Naked Lunch* (1959), John Kennedy Toole's *A Confederacy of Dunces* (1960), as well as in many others. In all those novels, the patterning force appears under different names and assumes multifarious forms. But, essentially, it is always some kind of absurd and dehumanized System which threatens Man's individuality, precludes all choice from his life and adjusts him to the soulless machinery without the least care for his human dignity.

In *Catch-22*, it is presented as a military force on the Italian island of Pianosa. It is structured according to the meticulous hierarchy from enlisted men through sergeants, major, colonels up to generals, all of them the puppets in the theatre the strings of which are being pulled by mysterious, intangible "them". The groundwork for the functioning of that particular system is an enigmatic catch-22 — a law applicable to any situation, excusing any brutality and providing the means to hold every human being in the power of the military machinery.

As reflected in modern literature, the ubiquitous and absurd System seems to be one of the most formidable aspects of contemporary reality. The grotesque, which is often said to be the expression of our times, becomes the best means of presenting that most profound and gruesome truth about modern man's existence in the world. It destroys any pretensions and hopes for real order and reveals, from behind the mask of coherent structuring, the entropic System disintegrating into chaos. It discloses the picture of reality pervaded with the sensation of meaninglessness and devoid of absolutes to depend or rely upon. Jan Kott observed (1967:105), "In the world of the grotesque the downfall cannot be justified by, or blamed on the absolute. [...] The absolute is absurd". When man has lost his dignity and found his life being simultaneously the vale of tears and the circus, the grotesque seems to be his last refuge in the world's madhouse.

For the purposes of the present discussion, the definition of the grotesque provided by Philip Thomson has been assumed.[1] It states that, generally, the

---

[1] Philip Thomson's definition of the grotesque is based on exhaustive studies of what has been said on the subject throughout ages. The discussion of the tradition of the grotesque and various applications of the notion to literature has been omitted for the sake of brevity. Consult: Thomson 1972. Sokół 1973.

grotesque is "the unresolved clash of incompatibles in work and response" (Thomson 1972:27). Thomson enumerates certain features of the grotesque thus defined, namely: antithesis and disharmony (in the work of art and in the reaction it produces), the comic and the terrifying combined together in an unresolvable way, the clash evoking the feeling of terror and amusement at the same time, extravagance and exaggeration, and abnormality (i.e., failing to conform to accepted standards and norms). Philip Thomson (1972:27) complements his definition with the statement that the grotesque is "ambivalently abnormal", that is, the abnormality of the world presented causes merriment because of the human tendency to treat as comic anything that discents from the norm and is commonly recognized as self-evident and not to be transgressed, but, on the other hand, the delight in novelty turns into fear of the unknown and the unfamiliar, the fear of losing orientation in the world which is becoming alien.

However, in order to apply Thomson's definition (which is unavoidably very general as it comprises all possible kinds of grotesque) to the American novel of the sixties, it seems necessary to distinguish the features that would more precisely define the grotesque as appearing in the novel in question. The following characteristics of the modern grotesque contain all the features enumerated by Thomson, but they are suited to the analysis of the American post-modernist novel; the objective of the study thus conceived is to arrive at a certain coherent pattern according to which it would be possible to handle the enormously complex phenomenon this kind of literature undoubtedly is.

First of all, it has been assumed that the underlying ambivalence in the grotesque consists in the co-presence of the comic and the terrifying, the paradox of simultaneous attraction/repulsion. Distinguishing what is funny and what is gruesome becomes impossible in the grotesque, which marks it off other modes of literary discourse. The opposites appear in balanced tension, heterogeneous elements continuously interweaving and fusing into one integral whole.

The co-presence of the comic and the terrifying is the ultimate conflict of the grotesque to which the remaining "clashing incompatibles" inevitably conduce. Thus, it seems that in order to get to the core of the grotesque one should commence with examining different aspects of the incompatibly heterogeneous in the grotesque world and then procede to examine in what way each of these elements contributes to the ultimate paradox of the comic/terrifying.

For the purpose of analysis *Catch-22* (which, to a large extent, may be treated as representative of the novel of the sixties), the following aspects of the grotesque world have been distinguished:

1. *Anti-logic* — the distortion in the grotesque does not result in complete chaos and nonsense, all elements falling apart at random, because the violated norm has been substituted by the anti-norm which is equally coherent.

Constructing the grotesque world consists in the art of decoding the familiar, natural code of reality in order to build a new one; on the one hand, the code is disrupted and on the other, it is fraudulently restored. Nadia Khouri (1980: 13) states

> Yet essentially, the grotesque, like the monstrous in general, is an anti-mimetic structuring dynamic which breaks the familiar code of nature, which interprets and transforms it in order to produce an aesthetically estranged and ideologically revealing new code.

Thus, although the cause—effect relationships and other primary categories of our orientation in the world cease to exist in the grotesque reality, the elements of that world are re-ordered according to the perverted logic, which has been labelled "anti-logic". The anti-logic is the structuring principle of the grotesque world, which, inexorably, turns every aspect of that reality into the preposterous, but at the same time provides it which the appearances of perfect order, thus veiling its intrinsically entropic character.

2. *The distortion of normal norms and values* — in the world pervaded with absurd, all traditional norms and values are swept under and replaced by anti-values, ridiculous obsessions which perform the function of moral values and the set of nonsensical norms of social behaviour grossly deviating from the traditionally recognized ones. There often occurs a complete inversion of the normative, and what is officially considered a vice becomes a virtue, and vice versa.

3. *Inanimateness* (Pynchon's understanding of the term) — as far as the subject matter is concerned, the grotesque, as appearing in *Catch-22* may be broadly classified as a mechanical grotesque (as opposed to the animalistic one).[2] In the mechanical grotesque, inanimate objects, usually machines and robots, gain life, while human beings display the characteristics of automatons. In *Catch-22*, the inanimateness of the grotesque also consists in the mechanical inserting itself into the living and, consequently, the world being peopled with automatons, robots, marionettes in human shape, controlled by the System and never displaying normal human instincts or emotions. Furthermore, the System itself is a soulless machinery, the manifestation of the stiffness of the formula and pattern, which suppresses all signs of individualism and humanity and treats people as inanimate objects. The System is grotesquely presented in the entropic process of gradual rigidification and moving towards inanimateness.

4. *Blurring or reality and fantasy* — G. Mensching said "the hallmark of the grotesque in the realm of the fantastic is the conscious confusion between fantasy and reality" (after Thomson 1972: 24). The grotesque world diverges

---

[2] The animalistic grotesque consists mainly in the animalistic transformations of human body. According to Bachtin, its origin is carnivalistic. The mechanical grotesque emerged as late as in the 19th century, in the era of accelerated industry (see Khouri 1980: 21).

from the normal and natural far transcending the limits of probability, but, on the other hand, it does not belong to the realm of fantasy. Its images are concrete and it is equipped with numerous details transferred from "our" reality, but the perspective in which we observe these familiar elements is strange and disturbing. It is arbitrary and unreal but, paradoxically, realistic and concrete at the same time.

The grotesque defined in terms of the above features most adequately presents the gruesome though ludicrously absurd reality of the System. It should be noted that, being a consistent whole, the grotesque possesses a formal structure which can be revealed and described. The vision of the grotesque world is conveyed through the whole arsenal of devices in the realm of language, characterization and plot. The form and the substance in the grotesque are inseparable, the medium itself conveying the message. A thorough analysis of the grotesque would also require the detailed uncovering of comic patterns: the study of the devices employed to arouse laughter in the reader and, besides, a psychological insight into the nature of man in order to understand the immense impact of the grotesque, its causing merriment and terror at the same time. However, such analysis much exceeds the limits of the present study and, undoubtedly, requires separate discussion.

I. ANTI-LOGIC

Unlike such literary categories as satire, parody, irony, which refer directly to the reality in which the author creates and usually do not transgress its limits, the grotesque emerges as an autonomous artistic whole, the world existing in its own right, governed by the rules and principles specific to it. The reader encounters the reality alien to him in which commonly recognized principles and norms are not valid. Instead, he has to accept its anti-rules and relinquish a habit of applying the familiar principles of causality and probability to that topsy-turvy reality in which the bizarre becomes the usual. In that world, the elements which the reader finds incongruous, fall together perfectly well according to the specific antilogic. The excursion into the world ruled by this perverted logic usually results in the sensation of total absurdity, of chaos masquerading as order. This apparent order is all embracing, uniting all the heterogeneous elements into one integral system. Every component has its proper place in the structure of the grotesque world and is subordinated to the superior whole.

In *Catch-22*, one encounters the military system of an American air-force base, which is ruled by its own military logic. It is "a world boiling in chaos in which everything was in proper order" (Heller 1980:157). The subversive, distorted logic, which serves the purpose of reducing an individual to a manipulable thing, is represented by the mysterious, omnipotent Catch-22 — an unchangeable, eternal law capable of handling any situation. It

encompasses every aspect of the world presented, thus becoming the System's structuring principle, which is pointed out by the very title of the novel: simple but menacing — *Catch-22*. Catch-22 holds everyone in its grip firmly, leaving no outlet, no way to omit it. It is perfect in its almightiness; it provides the measures which would prevent anyone from leaving the System (p. 54).

Moreover, Catch-22 governs not only the island of Pianosa. Wherever else Yossarian (the protagonist of the novel) steps, he bumps into the wall of catch-22 regulations mounting in front of him. For instance, when during his night trip to already captured Rome, he finds a familiar brothel in ruins and insists that there must have been some reason for such inconsiderate destruction, he is informed that the soldiers said the reason was Catch-22. It gave them a right to do anything that the girls could not stop them from doing. The law said they did not even have to show any warrant and the law turned out to be, again, Catch-22.

Thus, in the grotesque world of the military system, Catch-22 becomes an absolute — the first cause and the ultimate solution of all problems. It replaces God, who, ironically, is turned into one of the facets of the grotesque reality.

As the absurdities become sanctified, the most bizarre, nonsensical actions and behaviours are regarded normal. For example, when people start to ask questions during the educational sessions, which alarmed the Group Head-quarters, Colonel Corn provides a rule governing the asking of questions. It states that the only people permitted to ask questions are those who never do. In the same manner Major Major, the new squadron commander, does not want anyone to come and see him while he is in. He orders his assistant to come in to find if there is anything he wants him to do only when he is absent from his office.

For the inhabitants of the System, reality does not consist of the facts which actually happen, but of what is stated in official, written reports. The war itself is conceived in terms of the succession of changes on the map. What occurs on the map is prior to the real events on the front-line. When Yossarian stealthily moves the bomb line up over Bologna, the generals take it for granted that the city must have been recaptured during the night and cancel the scheduled mission.

Similarly, when a person is recorded dead, he ceases to exist in the bureaucratic reality of the System. Thus, although Doc Daneeka claims that he alive, "the records show that he went up in Mc Watt's plane to collect some flight time. Since he did not come down in a parachute, he must have been killed in the crash" (36). Yossarian shares his tent with the Dead Man (actually, with the things that once belonged to him), who is not only dead but, what is more, is denied to have ever existed because he went on a mission and was killed before Sergeant Towser put his name on the list.

The System controls men through its agents — omnipotent and inhuman "them" who have an irrational hold on things. A man confronted with the

mysterious "them" encounters a merciless, cruel power which reduces him to a meaningless object. Clevinger, Yossarian's friend, is stunned to discover "their" brutal, uncloaked hatred during his trial in which he has no chance to defend himself: "Clevinger was guilty, of course, or he would not have been accused, and since the only way to prove it was to find him guilty, it was their patriotic duty to do so" (91).

The perfection of the System perverted logic is unquestionable. It traps the individual into its "catchy" cul-de-sacs and operates so as to embrace every aspect of man's life. Its almightiness leaves no outlet for individual will and independent undertaking. The anti-logic of the grotesque world is quite coherent within its boundaries and it builds upon specific pseudo-logical chains and fallacious causality which inevitably turns everything into the preposterous.

2. THE DISTORTION OF MORAL NORMS AND VALUES

The reign of the anti-logic in the grotesque world concurs with the distortion of moral norms and values. In the world where absurdity is the absolute, there is no place for traditional values and moral norms which have been accepted by generations and sanctified by the long centuries of use. The phenomena occurring in that reality conflict with the existing conception of what is proper, decent and natural. Nadia Khouri, in her discussion of the grotesque as an anti-code (1980:4), stresses that, being a reaction to the normative, the grotesque draws essentially upon what she calls "the inversion of the official values". The distortion or inversion of moral norms and values results in the appearance of their substitutes that would seem absurd if judged by standards from outside the fictional world, but which fit perfectly well in the grotesque world, being its indispensable and natural component.

The morality of the System in Heller's novel results from a catch-22 way of thinking. Firstly, it consists in the perversion of goals at which all characters aspire. Though the action is said to take place during the war, no one cares about winning it and defeating the enemy; instead, everybody engages in absurd activities. For instance, Colonel Cathart, the direct commander of the flying squadron, thinks only about getting an article on himself and his questionable merits printed in *The Saturday Evening Post*. He invents different ways to obtain that, he even asks the chaplain to conduct prayers before each mission because, as he explains to the chaplain,

> Look how much good they've done for these people in England. Here's a picture of a colonel in *The Saturday Evening Post*, whose chaplain conducts prayers before each mission. If the prayers work for him, they should work for us. May be if we say prayers, they'll put my picture in *The Saturday Evening Post* (205).

In this way, he debauches religion by turning it into one of the means to attain his petty goal. By providing such motivation for conducting prayers,

Cathart destroys the illusion that faith could be a real value to lean against.

Colonel Cathart is glad when his pilots are killed because "the sooner we get some casualties, the sooner we can make progress on this. I'd like to get into the Christmas issue if we can. I imagine the circulation is higher then" (301). Thus, human life, generally considered as the greatest value man possesses, is squandered for the sake of the ridiculous obsession of a mediocre officer.

General Peckam, for his part, is obsessed with the idea of neatness according to which he gives all his orders such as the directive requiring all tents in the Mediterranean theatre of operations to be pitched along parallel lines, "with entrances facing back proudly toward the Washington Monument" (33). His favourite folly is obtaining the tightest "bomb pattern," to the extent that he orders the bombardment of the Italian village for the sole purpose of getting a nice, neat aerial photograph.

No wonder that in the world ruled by people devoted to their absurd obsessions, the traditional meaning of such words as patriotism or justice changes, and they cease to exist within their hitherto acknowledged connotations. For example, patriotism, which is commonly understood as devotion to one's country, denotes being obedient to one's superiors and following their nonsensical orders without hesitation. When Captain Black organizes the absurd Loyalty Oath Crusade, his superiors pronounce that he "would stand second to none in his devotion to the country" (25).

Another notion — justice — becomes a convenient word in the service of the omnipotent Catch-22. It is used whenever there occurs a need to tighten the grip of the System upon some insubordinate individual. During Clevinger's trial, Colonel Cathart puts forward the following definition of justice:

> Justice is a knee in the gut from the floor on the chin at night sneaky with a knife brought up down on the magazine of a battleship sandbagged underhanded in the dark without a word of warning. Garroting. That's what justice is (91).

The notion of courage is also totally confused. When Yossarian displays maximum of courage and goes over the target for the second time in order to drop his bombs accurately, he is threatened with court martial because "a trained bombardier is supposed to drop his bombs the first time" (150). Such misconception of courage results from the rigid interpretation of the regulation concerning the bombardier's task. This is the world in which the formula always supersedes common sense.

Also crime, as one normally understands the word, does not exist because the determinants of which act is a crime and which is not are confused. For example, killing is not a felony because it is the army's business. Consequently, after Aarfy has murdered a prostitute in Rome in cold blood, the police, acting according to catch-22 regulations, do not arrest him for his deed; instead, they arrest Yossarian for staying in Rome without a pass, which is an unpardonable offense to the System. Only a trespass against Catch-22 is a crime — in such

a cunning way, all activities traditionally considered immoral are legalized by the System.

David Richter (1975:143) calls the characters who people Heller's world "moral imbeciles," unaware of the moral dimension existent in our reality. Apart from the characters presented above, a perfect example may be the whole medical staff and their outrageous practices. Doc Daneeka is an obsessive hypochondriac who is continually brooding over his health and does not care a bit for that of the soldiers'. Only once does he start to perform his duties, when he "lost his head during Milo's bombardment; instead of running for cover, he had remained in the open," moving from casualty to casualty (227).

Businessman Milo provides another interesting example of a character professing the System's morality. Milo's supreme aim is the good of his sindicate and he would not miss an occasion to bring profit to it. He even takes pellets from life jackets and morphine from first aid kits, leaving the drowning and the wounded with a consoling message that what is good for the syndicate is good for the country. Once, he contracts with the Americans an attack on the bridge held by the Germans and, at the same time, he makes a deal with the Germans to defend the same bridge. He is to be given a high fee from both sides, plus a merit bonus of a thousand dollars for every American plane shot down. On another occasion, when the syndicate balances on the verge of bancruptcy (because of the unfortunate purchase of cotton), Milo makes a contract with the Germans to destroy his own outfit and bombards his squadron. It is remarkable that in place of flamboyant words like Courage, Might, Justice, Truth, Liberty, Love, Honour and Patriotism, which used to decorate the squadron planes, he painted "M & M Enterprise, Fine Fruits & Produce" (170), as if supplanting them by his own "values".

Similarly, the patterns of behaviour among human beings do not rely upon traditionally accepted social norms. Major Major has always been conforming to the norms irrelevant to the System he has found himself in, instead of suiting himself to the military morality. This causes friction between him and his superiors who dislike him as a "flagrant nonconformist" (97).

A reversal similar to the case of conformity and nonconformity occurs with the notions of sanity and insanity. In the world permeated with death, killing is normal and thinking in terms of the System's anti-logic becomes the mark of sanity. Consequently, Yossarian, who fails to follow the military morality, is considered crazy by everyone.

On the whole, in the grotesque world ruled by the grotesque catch-22 all traditional norms and values are not applicable. They are substituted by crazy obsessions of the officers or by anti-values which turn men into moral imbeciles. The words which are normally associated with highest moral ideas lose their obvious connotations and either become vacuous sounds or acquire an entirely different dimension. However, they are used to beguile a victim into accepting the moral standards of the System and to veil its inner nothingness.

3. INANIMATENESS

The problem of distored moral norms and values, which have become contradictory to the commonly accepted human values, inevitably leads to the next issue, namely, the grotesque inanimateness of the System.[3] As has already been mentioned, the grotesque appearing in *Catch-22* approximately falls into the category of mechanical grotesque which downgrades human beings by gradually transforming them into automatons, dummies and masks. On the other hand, the System, apparently an artifact, has gained superiority over its creator and lives its own life, endangering man's vitality. The System, a machine, acts arbitrarily, unhampered by socio-ethical laws.

Since the System does not respect any human values and as its aim is gradual petrification of humanity, it operates in the direction marked out by entropy — towards inanimateness and death, towards ultimate dedifferentiation and chaos. The System sponsors its victims' lives with computer-like exactness and allows them to move strictly along the programmed lines. Even if some generals give orders, it is obvious that they just transmit what has been schemed overhead. The omnipotent, capricious machinery decides about life and death, about careers and promotions in the military hierarchy. It casts people into their functions of a general or a corpse at random, and manoeuvres them as if they were puppets.

In the System, people are regarded as objects and even their bodies are utilized as if they were spare parts of the machinery. Lieutenant Scheisskopf, obsessed with the idea of parades, experiments with the soldiers' bodies as if they were made from plastic, iron and rubber. In order to improve marching, Scheisskopf considers "nailing the twelve men in each rank to a along two-by-four beam of seasoned oak to keep them in line (83). When he was training his cadets to march without swinging hands, his first thought was to "sink pegs of nickel alloys into each of man's thighbone and link them to the wrists by strands of copper wire with exactly three inches of play" (84).

A human being belongs to the System entirely to the extent that individual parts of his body are owned by it. Nurse Cramer reveals this truth to Yossarian when he stays at hospital with a wound in his leg and is not careful enough about recovering from the injury. Yossarian claims that it is his leg but the nurse scolds him as follows: "»It certainly is not your leg!« Nurse Cramer

---

[3] The most complete philosophy of inanimateness is expressed in the litterary work of Thomas Pynchon (especially in *V.*, the novel which Bernard Bergonzi calls a monument to the possibilities of dehumanization). Pynchon presents the entropic vision of the world, deteriorating humanity, dehumanizing impact of the mechanistic society upon the individual. His novels provide evidence of the assertion of the inanimate. The environment Pynchon's characters live in is full of hints of exhaustion, extinction and dehumanization, as if the 20th century man devoted himself to the annihilation of the animate.

retorted. »That leg belongs to the U.S. government. It's no different than a gear or a bedpan«" (311).

In consequence, people who are ruled by the System and do not think in human terms, resemble automatons steered by remote control. Little do they differ from other objects existing in that world. Some of the characters in the novel strike with their lifelessness and resemblance to inanimate, artificial products. For example, Aarfy, Yossarian's navigator, never gets nervous during a flying mission, and flak surrounding the plane threatening with immediate death, never bothers him. During the mission over Bologna, Yossarian realizes in panic that something is on fire; to his cries of horror, Aarfy keeps replying calmly, "I can't hear you, I can't hear you, lightening his pipe in the meantime" (161). Aarfy behaves like a computer in which the connection controlling hearing abilities has been damaged. Thus, Yossarian tries to communicate with him in some other way and punches him but:

> Punching Aarfy was like sinking his fists into a limp of inflated rubber. There was no resistance, no response at all from the soft, insensitive mass [...] Aarfy was grinning from ear to ear as something inhuman (161).

Another machine in human shape is Havermayer, a lead bombardier who never takes evasive action going over the target and thereby increases the danger of all the men who fly with him in the same formation. He is the best programmed pilot-automaton, conditioned so as to like being surrounded by flak. Like Aarfy, he lacks the instinct for survival normally inborn in all animals, including *Homo sapiens*.

Also Appleby belongs to this class of the most successful products of the System, who perform their functions obediently and perfectly well. He is not only one of the best bombardiers but he is the best in everything: "Appleby was good at shooting craps, and he was as good at playing ping-pong as he was at everything else. Everything Appleby did, he did well" (25). He reminds of a multifunctional computer programmed to perform various activities. *Catch-22* abounds in portrayals of dehumanized men who seem to consist of rubber, iron, screws and other artificial materials (invincible Major de Coverly, the policemen who came to arrest Yossarian in Rome).

In the world peopled with soulless humanoids, there exists a growing tendency towards inertia and inanimateness in the Pynchon's understanding of the word. The destination is death — the state of bodily non-being and vacuum in place of spirit and conscience. Scenes of dying abound in *Catch-22*: its world is contaminated by death and full of violent, macabre descriptions. Man is being dismembered — Kid Sampson's legs stand on the raft on the sea while the rest of his body has already disappeared in the water (he has been cut in half by Mc Watt's plane), and Snowden's intestines are scattered all over Yossarian's plane and smeared upon Yossarian himself. These revolting scenes of human flesh deteriorating and falling into pieces parallel the similar decay of human spirit.

The novel is haunted by the so-called "soldier in white" — a human shape in white bandages and plasters. From time to time, he appears on the scene (rolled in by a nurse) — breathless, motionless, showing no signs of life:

> The soldier in white was encased from head to toe in plaster and gauze. He had two useless legs and two useless arms [...]. A silent zink pipe rose from the cement on his groin and was coupled to a slim rubber hose that carried waste from his kindneys and dripped it efficiently into a clear, stoppered jar on the floor (16).

"Soldier in white" symbolizes the penultimate transition stage between life and death. He has less life in him than a vegetable (a vegetable is at least self-sufficient and may be useful). He visualizes man's emptied self, his identity reduced to the arrangements of surface, to white (implying: blank) plaster and gauze. "Soldier in white" represents the ultimate, dreadful product of the System — inanimate human garbage. This is all that remains of a human being when the spirit is gone.

The System — the juggernaut destroying the human, spreads inanimate-ness, changing men into automatons, reducing them to the role of the functionary; the faulty parts, the garbage, are unscrupulously discarded as waste. The victim does not even notice that he is being taken possession of, he is helpless in face of the sweeping power which robs him of his human dignity. The inanimateness as the aspect of the grotesque world means complete degradation of man's nature and the waste of human values. A human being becoming an automaton and the dominance of the inanimate result in the nightmare of non-identity, terrifying sameness of all objects, in man being a manipulable thing and not a distinct self.

4. BLURRING OF REALITY AND FANTASY

The grotesque world is further characterized by a constant blurring of reality and fantasy. On the one hand, it diverges from the normal and the natural far trancending the limitations of verisimilitude, on the other, however, it does not belong to the realm of fantasy. Philip Thomson explains that if a literary text takes place in a fantasy world created by an author with no pretensions to a connection with reality, the grotesque is almost out of question — the author has assumed the perspective of the unreal and retains it all the time; whereas in the grotesque, different perspectives — real and unreal — alternate.

The grotesque world is not alien to us from the very beginning, like the world of the fairy tale, but it is presented in the process of becoming alienated: it is equipped with numerous details borrowed from "our" reality and characterized by the concreteness of images, but the perspective in which we observe these realistic elements renders them strange and disturbing. On the other hand, fantasy in the grotesque is treated as something real and probable, hence the endavours to separate the fantastic events from the real ones are in vain.

As reflected in *Catch-22*, blurring of reality and fantasy peculiar to the grotesque results in the vision of the distorted world in which both, the characters and the events are fabulous, exaggerated (in comparison with what we assume *is* reality), as if seen through the set of magnifying and deforming lenses. Man is helpless in the face of "facts" thrown at him by his own dreams and fantasies, bewildered by the unreality of ordinary life. Behind the tapestries of reality he always senses the presence of some massive, inhuman force: behind the strange surface of facts, he always discovers the existence of the horrifying, mysterious System. The notion of reality is lost behind the grotesque, fictitious patterns.

The line between the real and the fantastic fades, and the reader is baffled in the same manner as is the unhappy chaplain who can never say whether what he perceives is illusion or reality. Drawing a line between hallucination and dream, and real objectively verifiable facts becomes impossible. Moreover, one cannot determine to what extent the reality one is observing is just a subjective projection of the characters' nightmares, due to the confusion of the perspectives — the real and the fantastic. To substantiate, Hungry Joe has screaming nightmares that a cat is strangling him, which makes him believe that one day he will be suffocated for good. The nightmare torments him nightly until eventually he "really died in his sleep while having a dream. They found a cat on his face" (459).

Captain Flume in turn, is afraid to fall asleep because Chief White Halfoat once threatened to slit his throat from ear to ear. This nightly vigil exhausts him completely, although he "slept like a log and merely dreamt he was awake" (66). Finally, he cannot bear the stress any longer and goes to live in the woods, where he awaits Chief White Halfoat's death, as the Indian has been ominously claiming that he is soon going to perish of pneumonia. Nor surprisingly at all, in due time he moves to a hospital and dies.

This total confusion between reality and fantasy accounts for almost all events in the novel appearing to be unreal, distorted, often circus-like. These grotesque situations considerably diverge from the picture of the world known to us from experience, even though the characters are apparently human beings making gestures man is capable of performing. The sensation of absurd fantasy which pervades these scenes results mainly from the extravagance of the characters' movements and gestures, exaggeration and repetition, super-fluity of details, from suspending the principle of causality as well as of chronology. *Catch-22* abounds in clownish pursuits; the characters chase one another, jump out of the windows, hide behind the bushes or spring from behind them with shrills. The invasion of C.I.D. men in search of a mysterious forger who signs letters and orders "Washington Irving" or "Irving Washington" is an illustrative situation. Two agents, not aware of the existence of each other, take turns at entering and leaving Major Major's office through the window in frantic haste (107—108).

Another example of such a grotesque situation are Yossarian's vicissitudes connected with "Nately's whore". The prostitute groundlessly blames him for Nately's death and sets traps in order to kill Yossarian in revenge. In Rome, she unexpectedly flings herself at him, trying to stab him with a potato-peeler. At Pianosa, she often jumps from behind the bushes in an attempt to assassinate him — "a nightmare figure, constantly metamorphosing and terrifyingly ubiquitous with her ambushes and threats" (Tanner 1971: 73). The next example is provided by Hungry Joe and his futile attempts to take pictures of naked girls. Gnawing at the tips of his fingers, stammering, sweating and salivating he is springing from place to place with his black camera, never able to decide whether to make love to the girls or to photograph them.

Very often, the events in the novel assume an almost apocalyptic dimension; there occurs an escalation of more and more improbable happenings until all boundaries of plausibility are lost, the contours of the world presented becoming nebulous. Such are Milo Mindenbinder's activities to bring profit to the syndicate. He makes fantastic operations selling and buying goods all over the world. The agents of the syndicate reach the most distant recesses of the globe, and Milo is capable to see to everything in person. He can make profit out of nothing, he is very resourceful indeed, to the extent that he manufactures sweets from the cotton he was not able to sell during the boom. Equally fantastic is the reception of Milo by the population of the places where he lands his plane with M & M Enterprise painted on it. In every town, he is revered by cheering, exultant crowds. His fame spreads quickly, and the news of his arrival always precedes him. Milo, surrounded by his worshippers, acquires godlike grandiosity (see 250, 254).

The Glorious Loyalty Oath Crusade likewise transcends all conceivable limits of likelihood. All enlisted men and officers have to sign a loyalty oath to obtain a permission to perform most elementary activities. Captain Black goes ahead with the Crusade, overtaking all competitors by "making every son of a bitch who came into his intelligence tent sign two loyalty oaths, then three, then four." He introduces the pledge of allegiance and after that "The Star Spangled Banner" in one, two, three and more choruses. In the mess hall, officers are waiting in line to sign loyalty oaths:

> At the far end of the food counter, a group of men who had arrived earlier were pleading allegiance to the flag, with trays of food balanced in one hand, in order to be allowed to take seats at the tables, a group that had arrived still earlier was singing "The Star Spangled Banner" in order that they might use the salt and pepper and ketchup there (128).

The whole Glorious Crusade is smashed by Major de Coverley who enters the mess hall and orders loudly, "Gimme eat!" (128). The mighty undertaking shrinks into grotesque clowning.

At the same time, however, after Mc Carthy's era, the Glorious Crusade cannot be treated as pure comic fantasy. Loyalty oaths signed for such

ridiculous purposes as using salt and pepper are strongly reminiscent of the similar procedures, though in a different dimension, during the "red scare" campaign led by the atrocious senator. Singing "The Star Spangled Benner" in choruses seems to be the derisive remembrance of the plea to be loyal to the country. Moreover, some unfortunate individuals, like Major Major, are persecuted — "witch-hunted". Thus, some startingly familiar details are incorporated into the supposedly fabulous story. As R.M. Olderman remarks (1976: 24), "We are constantly snapped back from an unfamiliar experience to the flatfootedly familiar."

To substantiate further, Appleby's father makes profit by not growing alfalfa (the more alfalfa he did not grow, the richer he was). Ths absurd inversion is in perfect accordance with the System's anti-logic. However, if one recalls the 1933 Agricultural Adjustment Act, one comes across the absurd taking place in reality. Such recognition leads to the suspicion that probably much more of the novel's fantasy may be real, and the reality we live in — as fabulous as all the impossible events happening in the grotesque world. R. M. Olderman asks (1976: 24), "How do we designate what is experience 'unencumbered' and what is merely beyond our particular knowledge?"

Similarly, a person who has been in the army will be more prone to accept some of the absurdities occurring in the novel as having a lot in common with reality than one who has never been compelled to contact the military machinery in person.

The setting of the novel is very concrete — an island in the Mediterranean Sea, then Rome; the action is said to take place during the second world war which, undoubtedly, did happen. But even though these details exist on maps and in history text-books, in *Catch-22*, they acquire a fabulous dimension and are no more real than, let us say, Liliputh or Bromdingnag.

The exasperating encounters with reality within fantasy and vice versa, with fantasy within reality confuse the reader so much that he is lost in the maze of the fantastic and the real. This medley is best symbolized by Yossarian's night trip to the "eternal city" — Rome. Everywhere, he sees ruins, dilapidated monuments of architecture and destroyed brothels. Yossarian strolls through the devastated city, listening to the voices of night, to the sounds of violence being committed everywhere around him. From time to time, a flash illuminates some scene for a moment: a little boy being beaten brutally, a drunken soldier raping a woman, policemen with clubs chasing people. Every scene disappears instantly in all-embracing darkness:

> He heard snarling, inhuman voices cutting from the ghastly blackness in front suddenly. The bulb on the corner lamp-post had died, spilling gloom over half the street, throwing everything visible off balance. On the other side of the intersection, a man was beating a dog with a stick like the man who was beating the horse with a whip in Raskolnikov's dream (438).

The scene clearly suggests that reality is in fact a nightmarish dream. Thus, the realism of the modern grotesque seems to consist in its mirroring

the characteristic of contemporary reality "fading line between reality and fantasy."

Such being the case, the grotesque best reflects the modern man's fear of losing hold of reality. It evokes suspicion that maybe any part that appears fabulous is as true as the part the reader has recognized. One can wonder, as does the unhappy chaplain: "So many monstrous events were occurring that he was no longer positive which events were monstrous and which were really taking place" (Heller 1980: 287). One suspects with horror that what one observes very possibly is one's ordinary life, fantastic as it may seem. One recalls as well Ken Kesey's *One Flew Over the Cuckoo's Nest* and the narrator's remark, as he is introducing his story:

> You say this is too horrible to have really happened, this is too awful to be the truth. But please. It's still hard to me to have a clear mind thinking on it. But it's truth even if it didn't happen (Kesey, 1962: 13).

5. COMIC AND TERRIFYING – CONCLUSION

As has been shown, the grotesque world in *Catch-22* diverges from the generally accepted norms in many respects. Firstly, it is devoid of logical cause – effect relationships; instead, it is based upon a specific pseudo-logic which is very coherent within the boundaries of the grotesque, but which inevitably turns everything into the preposterous. The outcome of the operation of the System's anti-logic is complete *reductio ad absurdum* of the whole texture of reality. As a result, nonsense reigns indivisibly and any attempt to apply common-sense reasoning is futile. Furthermore, the apparent order and coherence of that world contrasts with utter chaos which lies beneath the exaggeratedly meticulous structures.

The world in which the action takes place being marked by the preposterous anti-logic, the human beings who are at home in that reality must be equally absurd. In fact, they are human beings only to the extent that, at the first sight, they look like ones, their bodies and their ability to speak characteristic of the *Homo sapiens* kind. These features, however, are incongruous with their inhuman reactions, and evident automatization – they function in accordance with the stimuli coming from some invisible control desk. Although they all move around a lot and perform numerous activities, their reality is stiffened and all their actions marked by inertia – they can only "jerk in the pattern" (Kesey 1962: 237). And there is nothing that would give sense to all that stultifying jerking. In place of normal norms and values considered the basis of one's social behaviour in "our" reality, there exist only the rules which are derivative of the superior principle of absurd. They constitute a mixture of incompatibles which make that world appear both a circus and a lunatic asylum. There, the characters move in the two planes of reality and fantasy, as if the confusion between them were nothing unnatural.

The juxtaposition of all those heterogeneous elements culminates in the ultimate grotesque conflict of the comic and the terrifying, in the paradox of simultaneous merriment and horror or even nausea. It is immanent in the grotesque world: its anti-logic is comic per se since it is opposed to reason. It warps natural cause – effect relationships, inverts causal chains, casually binds unrelated elements in the fallacious chains of causation, joints disparate cause and effect in a seemingly logical way for manipulative purposes. Such manipulation with one of the primary categories of our orientation in the world is funny, but at the same time it shatters some of our axioms, leaving man with the sense of total inefficiency of his reasoning skills in the face of dominating absurdity. On the plain of anti-logic, Joseph Heller's black humour seems to consist in turning into comedy man's despair about being denied the right to decide about his own reasoning and, consequently, about his life. The obtrusive phrase "Catch-22 says..." evokes laughter, but at the same time it makes one realize the fiendish nature of that law – always in the way, not to be avoided or outwitted.

Certain established moral norms and values are another dimension in which man is normally accustomed to live. The fact that the grotesque denies the existing norms, brings about mirth, but the comedy is shockingly mixed with gruesomeness, since laughter is accompanied by nagging fear that one may lose one's moral basis and collapse into moral nothingness. The novel's black humour occasionally approaches macabre and may be repulsive to the extent that the decision whether it is funny at all much depends on the reader's individual sense of humour. It often results from violating the taboo of death, from presenting it in a disgustingly comical manner. In the world of the System, the greatest possible value – human life – becomes the merchandise to be traded by the System's agents who are moral imbeciles.

The reader's expectations as to the behaviour of the characters, based on traditional morality, are being continuously frustrated. He is surprised by the inappropriatness of the characters' responses to different situations and compelled to reverse his own response. In this way Heller – the black humourist – makes one laugh at the darkest and most painful sides of human existence, traps one into taking delight in what is horrible.

The world devoid of moral norms and values becomes dehumanized, life turns into the mechanical and vital processes become automatized. This rigidification of human reality, its inanimateness, contributes to a great extent to the simultaneously comic and terrifying impact of the grotesque. First, it is brought about by the inertia of the formula, by automatization forced by the rules of social life the perfect example of which are the System's regulations operating with merciless power and disguising themselves as natural laws. Secondly, a human being, his posture, movements and gestures are both funny and terrifying insofar as the body reminds of a soulless mechanism. Philip Thomson rightly observes (1972: 35), "a human being given the appearance of

being a marionette or robot is [...] grotesque: comical and strangely disturbing at the same time".

The soulless System petrifies all life within its reach, regarding human beings as manipulable objects. The overall effect is funny in accordance with Bergsonian (1977) theory of laughter as caused by the insertion of mechanism into life. The characters themselves are two-dimensional, comic-strip; even their movements are inhuman — they either jerk like puppets on the strings or their gestures are robot-like: slow, regular and stiff. The tedious sameness of all the characters as well as the repetitiveness of their gestures and actions becomes the source of the comic because, as Henri Bergson argues (1977: 76) "real life should never repeat. Wherever repetition or complete likeness occurs we guess the existence of some mechanism behind the appearance of life. It is the real cause of laughter". It is also the real source of terror, since automatization encroaches upon human reality more and more, turning human beings into inanimate objects. The more obvious is the change of life into the inanimate the greater the comic effect, but the terror it evokes is directly proportional.

In the dehumanized world peopled with automatons and governed by the rigid formula, the categories and laws ruling our "human" reality are no longer applicable; consequently, that world ceases to be real and obtains a fabulous dimension. The limitations of likelihood are being transcended arbitrarily, which is indeed a trick played upon the reader. He is constantly carried from the real plane to the fantastic one and back until he loses control over the process altogether and is just puzzled at the happenings he witnesses. In that alien and strange world, the recognition of certain elements from our reality forced into the distorted frames becomes the source of laughter. Furthermore, observing how certain concrete, realistic events and phenomena are equalled in rights with the fantastic ones until all boundaries between the two are blurred arouses merriment. At the same time, such grotesque confusion baffles the reader and causes his anguish at not being able to distinguish between the real and the unreal.

The topsy-turvy world of the System, exploding with paradoxes, is funny because it is so utterly absurd. One exerts to see some sense in it but is forced to relinquish these vain efforts and just laugh at the mounting paradoxes. Seeing the sacred norms flouted, inviolable laws transgressed and axioms impaired brings about the unholy delight. One laughs at the grotesque as one does at one's own reflection in a distorting mirror — it is still a human face but distorted ludicrously, all proportions gone, a grimace on it which makes it look monstrous. However, the reflection would cease to be funny at the mere thought that one might really look like that monster which is, anyway, one's own impaired image. And that kind of dread is exactly what creates the specific impact of the grotesque. It is impossible to separate it from reality, as in the case of fairy tales where one assumes that dragons, ogres and witches

are fancied. In the grotesque world, one recognizes the reality one lives in, but it is deprieved of categories which give sense to one's existence in the world. In this treacherous way, the grotesque undermines these categories and displays absurd in their place.

Although fun reigns on the surface of the grotesque, it is in fact capable of expressing the most profound truths about man's existence in the world. What is more, in the modern era of man's being exposed to innumerable conflicting influences and burdened with the enormous heritage of the past, the grotesque, due to its elusive, ambiguous nature, still discloses an entirely new angle of viewing the world. It enables one to see everything that surrounds us with a fresh eye, not blindfolded by traditions, customs, habits. According to Mikhail Bachtin (1975), the grotesque glorifies freedom from all conditioning forces, it helps to shake off the yoke of the governing worldview, of all the conventions, commonly held truths, to escape the pressure of everything which is plain and routine. Thus, in the technocratic era of the individual being taken possession of by the System, the grotesque becomes the writer's attempt to assume some attitude towards reality, to explore some possibilities of handling its absurd texture instead of sinking into inertia, drawing his audience with him into the depths of ultimate despair. The grotesque lets us laugh at life and its absurdities, which often seems to be the only adequate response. Such laughter becomes a kind of modern heroism since it does require strength, is also offers at least partial freedom from patterning forces. The grotesque becomes a periscope through which one can glimpse at the contemporary world from the distance rather than from the perspective of a bleeding heart and wounded consciousness.

The grotesque employed to present the most formidable aspects of modern reality becomes the way in which modern writers, Joseph Heller among them, have set out to move beyond contemporary waste land. As R. M. Olderman puts it (1976: 9):

> to start out caught in a waste-land like an insane asylum, a jail or a chull-state of decadent feeling, as so many recent writers do — and struggle towards overcoming it is to construct hope applicable to our particular times.

REFERENCES

Primary sources
Heller, Joseph (1980), *Catch-22*, London: Transworld Publishers Ltd.
Secondary sources
Bachtin, Michaił (1975), *Twórczość Franciszka Rabelais a kultura ludowa średniowiecza*, Kraków: Wydawnictwo Literackie.
Bergonzi, Bernard (1970), *The Situation of the Novel*, London: Macmillan Co. Ltd.
Bergson, Henri (1977), *Śmiech: eseje o komizmie* [*Le Rire: Essai sur la Signification du Comique*]. Translation from French by Stanisław Cichowicz, Kraków: Wydawnictwo Literackie.
Harris, Charles B. (1971), *Contemporary American Novelists of the Absurd*, New Haven, Connecticut: College University Press.

Kayser, Wolfgang (1979), "Próba określenia istoty groteskowości", *Pamiętnik Literacki* 70, 4: 271—280.

Kesey, Ken (1962), *One Flew Over the Cuckoo's Nest*, New York: The New American Library, Inc.

Khouri, Nadia (1980), "The Grotesque: Archeology of an Anti-Code", *Zagadnienia Rodzajów Literackich* 23, 2: 5—24.

Kott, Jan (1967), *Shakespeare Our Contemporary*, Fakenham, Norfolk: Cox Wyman Ltd.

Olderman, Raymond M. (1976), *Beyond the Waste Land: a Study of the American Novel in the Nineteen Sixties*. Clinton, Massachusetts: The Colonial Press Inc.

Pynchon, Thomas (1967), *V.*, New York: Bantam Books.

Richter, David H. (1975), *Fable's End. Completeness and Closure in Rhetorical Fiction*, Chicago: The University of Chicago Press.

Scholes, Robert (1980), *Fabulation and Metafiction*, Chicago: University of Illinois Press.

Sokół, Lech (1973), *Groteska w teatrze Stanisława Ignacego Witkiewicza*, Wrocław: Ossolineum. PAN. Instytut Sztuki.

Tanner, Tony (1971), *City of Words. American Fiction 1950—1970*, New York: Harper Row Publishers.

Thomson, Philip (1972), *The Grotesque*, London: Methuen Co. Ltd.

Wiener, Norbert (1954), *The Human Use of Human Beings: Cybernetics and Society*, New York.