CHAPTER 2

THEORETICAL FRAMEWORK AND RELATED STUDIES

2.1. Related Theories

An analysis of vowel harmony implies coordination and interinfluence between vowels and other segments in certain forms. For this thesis, the researcher uses the definition of vowel harmony by Hyman that all vowels within a specified (suprasegmental) unit agree in some phonetic features (1975: 233).

The possible occurrence of vowel harmony makes the analysis to refer to premises in analyzing sounds of a language, and some ofthe premises are, first that sounds of language tend to be influenced by their environments; second that sound systems tend to be symetrical (Samsuri, 1987 : 130-131). Those premises are useful to indicate the involved elements.

As we do with vowels, it is important to understand the characteristics of vowels. First of all, there is a fact that vowel sounds form a continum. There are no distinct boundaries between one type of vowel and another (Ladefoged,1975 : 66). This continum also causes the absence of clear-cut distinctions between vowels. Instead, there are gradual transitions from one to another (Francis,1958:93). According to Ladefoged, vowels can be characterized mainly in terms of three features: vowel

height or the degree of height, the degree of backness, and the degree of lip rounding.

Meanwhile, the phonemic inventory of a language may be assumed to be a set of bundles of feature specifications. This can be served as the basis for phonological analysis (Lass,1984:94). This statement is supported by Trubetzkoy who said that phoneme is a class of sounds (Hyman,1975:67).

Vowel harmony applies to all vowels within a given domain (normally between internal word or stem boundaries). Bases on phonological rules, vowel harmony can be blocked by a strong grammatical boundary. If vowel harmony occurs across a (morpheme) boundary it does not need any further explanations since an affix vowel can assimilate the vowel in neighboring syllable. Some linguists also account vowel harmony happened within morpheme boundary. It can be explained by the notion of "morpheme structure condition" (HYman,1975: 235-236).

Considering the nature of vowels and the occurrences of vowel harmony, there are several ways of analysis. Analysis based on generative phonology which begins with assigning underlying representation of vowel harmony emphasizes the attention to vowel harmony within morpheme boundary. But still, it refers to the structure of morpheme or to the constraints of morpheme structure. This study, the researcher analyze them based on the structure of phonemes

and   morphemes. This analysis will cover   the   occurrences across morpheme boundaries and within morpheme boundary.

To   analyze   the occurrence of   vowel   harmony   across morpheme boundaries, it needs the definition about assimi-lation. Assimilation is a process which permits one segment to become more like (or identical to) another.

The   structure of morpheme is ordered by   constraints. Sequential   constraints can be the basis in governing   ele-ments   to   be   a morpheme or be   within   internal   morpheme boundary. As it is known , a word is constructed by sounds of the language and under particular constraint exclusively . in   the   language. Therefore, the   occurrences   of   certain features of one segment can be predicted on the   basis   of certain features of another segment. Those segments are   in the   same morpheme and allow the sequential constraints of the given language (Hyman,1975: 105).

The definition of vowel harmony needs to be supported by a categorization to clarify the analysis. Aoki (cited by Hyman,1975) provides a framework for typologizing vowel harmony systems by distinguishing between partial and complete vowel harmony. Complete vowel harmony which can also be seen as a kind of reduplication, is a condition when the vowel of a morpheme completely assimilates to another vowel. In complete vowel harmony, it is often referred to as copying or vowel reduplication. But most cases of vowel harmony refer to partial variety in which a

2.2. Related Studies

2.2.1. Javanese Phonology

In this research, the researcher refers to studies which stated that Javanese has eight vowels. They are /a/,/o/,/u/./e/./i/,/ɛ/,/ɔ/, and /ə/. Their phonetic realizations are [ʌ],[o],[u],[e],[i],[ɛ],[ɔ], and [ə]. There are overlapping in determining those phonemes because sometime several sounds are allophones of single phoneme, but in other morphemes the sounds are representations of different phonemes (Subroto,1991:13-16). Beside, it is difficult to determine the intended vowel because the Javanese orthograph provides only six vowels. However, those eight vowels are sufficient to describe Javanese vowel sounds for the reason that Javanese has more distinctive vowel sounds, and it has no diphtongs.

For supporting those facts, vowel system proposed by Roger Lass is applied in this study (Lass,1984:145). The system is useful to determine the quality of vowel sounds. A single phoneme is a representation of sounds in a relative area in the vowel chart. Therefore, the quality of each vowel is not absolute. The vowel system that is used is described below.

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    i         u
    e         o
    ɛ    ə   ɔ
         ʌ
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The phonetic features of each phoneme that are used in the analysis are below.

	i	e	ɛ	u	o	ɔ	ə	a
high	+	−	−	+	−	−	−	−
low	−	−	+	−	−	+	+	+
back	−	−	−	+	+	+	+	+
rounded	−	−	−	+	+	+	−	+
tense	+	+	−	+	+	−	−	+

2.2.2. Javanese Morphology

The ideal Javanese morpheme structure is CVCVC. This form has the highest distribution in Javanese words espe- cially in root morpheme (Uhlenbeck,1982:30). But it doesn't mean that CVC for one vowel form and CVCVCVC for three vowels form are less ideal than CVCVC for each given form.

The form CVCVC shows that there are two preference on the basis of composing vowels. The first preference is that /a/ tends to be used as the first vowel as well as the second vowel. The second is that there are ten vowel combi- nations which are rarely used. They are /o/-/u/, /o/-/i/, /o/-/ /; /e/-/u/, /e/-/i/, /e/-/ə/; /u/-/o/, /u/-/e/; /i/- /o/, /i/-/e/. If a morpheme has one of those rare vowel combinations, it seems that the morpheme is not a standard morpheme, or is a borrowed one, or an expressive word, or a combination of morphemes which are considered as root mor pheme (Uhlenbeck,1982:30-34).

Affixes tend to have one vowel while a normal root morpheme has two vowels, and a word often has three or more

vowels. But there are also affixes which have more than one
vowel although there are not many.
There are affixes which influence the root if they are
combined into one complex morpheme. In other words, several
phonemes undergo morphophonological processes in certain
conditions. The processes include assimilation, addition,
substitution, deletion, and sandhi (Soedjito,1981:96-100).

The assimilation occurs when a nasal prefix becomes
another nasal phoneme which has the same place of articula-
tion. They are:

1. {N-} --> /m-//-/b/

    Example:

            {N-} + /bakar/ --> /mbakar/   'burn'

2. {N-} --> /n-//-$\begin{Bmatrix} ḍ \\ d \end{Bmatrix}$

    Example:

            {N-} + /ḍuwa/ --> /nḍuwa/   'support'

            {N-} + /duduk/ --> /nduduk/   'dig'

3. {N-} --> /n//-/j/

    Example:

            {N-} + /jotos/ --> /njotos/   'hit'

4. {N-} --> /ŋ//-/g/

    Example:

            {N-} + /goreŋ/ --> /ngoreŋ/   'fry'

The deletion happens when stop phonemes /p,t,k/, strident phoneme /c/, and glide /w/ are combined with nasal prefix. The nasal prefix is substituted by another nasal phoneme whose articulator is the same. The patterns are below:

1. {N-} --> /m-/ $/$ - $\begin{Bmatrix} p \\ w \end{Bmatrix}$, and

   $\begin{Bmatrix} p \\ w \end{Bmatrix}$ --> 0 $/$ {N-}-

   Example:

   {N-} + /pacul/ --> /macul/   'dig'

   {N-} + /waca/ --> /maca/   'read'

2. {N-} --> /n-/ $/$ - $\begin{Bmatrix} t \\ ṭ \end{Bmatrix}$, and

   [t] --> 0 $/$ {N-}-

   Example:

   {N-} + /ṭanḍur/ --> /nanḍur/   'plant'

   {N-} + /tutuk/ --> /nutuk/   'hit'

3. {N-} --> /n-/ $/$ - $\begin{Bmatrix} c \\ s \end{Bmatrix}$, and

   c --> 0 $/$ {N-}-
   s

   Example:

   {N-} + /cəkəl/ --> /ɲəkəl/   'catch'

   {N-} + /sapu/ --> /ɲapu/   'sweep'

4. {N-} --> /n-// -/k/

   [k] --> 0/ {N-}-

Example:

   {N-} + /kidul/ --> /ŋidul/   'got to South'

Addition process occurs in East Java dialect of Java-nese by addition of phoneme /n/ and /k/. The addition is done when the final phoneme of the morpheme is a vowel then it is followed by suffix {-i} which is added by /n/ in preceding position. In some cases, beside the addition of /n/ the vowel in final position of the stem is harmonized in such way which /i/ becomes [ ] and /u/ becomes [ ]. These process can be seen in these words:

   {di-} + /isi/ + {-i} --> /diisɛni/   `fill'
                            --> [diisɛni]

   {di-} + /tuku/ + {-i} --> /ditukɔni/   'buy'
                            --> [ditukɔni]

The addition of phoneme /k/ is also followed by the harmonization of vowel in the final position of the stem. The attachment of suffix {-na} is preceded by the addition of /k/. For instance:

   /gawe/ + {-n } --> /gawɛknɔ/   'be make'
                    --> [gʌwɛ?nɔ]

The vowel of prefix {ke-} --> [kə] is deleted in some words. And the occurrence of two vowels in a sequence which is due to morphological process can emerge another new

vowel, such as [ʊ] in final position followed by [i], then
[ʊ] becomes [ɛ] before the addition of [i] which preceded
by /n/; the others are that [i] which attached with [i]
becomes [ɛ] and addition of /n/ before the second [i].
Suffix {-ane} or {-ana} also do the similar phonological
process if they aplly morphological process. The patterns
can be seen below.

1. a#+ $\begin{bmatrix} -an \\ -i \\ -ana \\ -ane \end{bmatrix}$ --> $\begin{bmatrix} [\Lambda n] \\ [\Lambda ni] \\ [\Lambda n \supset n \supset] \\ [\Lambda n \Lambda ne] \end{bmatrix}$

2. i#+ $\begin{bmatrix} -an \\ -i \\ -ana \\ -ane \end{bmatrix}$ --> $\begin{bmatrix} [\Lambda n] \\ [\Lambda ni] \\ [\Lambda n \supset n \supset] \\ [\Lambda n \Lambda ne] \end{bmatrix}$

3. u#+ $\begin{bmatrix} -an \\ -i \\ -ana \\ -ane \end{bmatrix}$ --> $\begin{bmatrix} [\Lambda n] \\ [\Lambda ni] \\ [\Lambda n \supset n \supset] \\ [\Lambda n \Lambda ne] \end{bmatrix}$

2.2.3. Some of Javanese Dialects

Dialects of Javanese in Northern Java have similari-
ties in some respect. Since Surabaya dialect is one of
dialects of Northern Java, therefore it is necessary to
understand some of Northern Java dialects.

2.2.3.1. Javanese in Gresik (Sutoko,1981)

Some people say that Javanese spoken by people in
Gresik is still considered is Javanese in Surabaya style;

or in other words, Gresik is still the area of Surabaya dialect.

This 'dialect' has several specific phonemes. These phonemes have certain certain distributions which distinguish the dialect from another one. But this characteristic does not constrain the speaker of the language since those phonemes can be variation of another phoneme which does not change the meaning of word, but in another word the phonemes are distinctive.

Phonological characteristic of 'Gresik dialect' are generally on the vowels. These are the patterns.

a. /i/ --> /e/

[pite?] --> [pete?]

[iroŋ] --> [eroŋ]

b. /u/ --> /o/

[wuwoŋ] --> [wowoŋ]

[buwoh] --> [bowoh]

c. /i/ --> /ɛ/

[sərʌbi] --> [sərɛbɛ]

[kətiʌ?] --> [kətɛʌ?]

d. /e/ --> /ɛ/

[telɔ] --> [tɛlɔ]

2.2.3.2. Tuban Dialect (Sunaryo,1984)

In Tuban dialect, there are couples of vowels which

are varying in the their use. They are:

/a/ and /ə/   in /parakeso?/ and /par keso?/   'dawn';

/ɔ/ and /ə/   in /kaɔssəpɔrɔt/ and /kaɔssəpɔrət/   'shirt';

/ɔ/ and /o/   in /burɔh/ and /buroh/   'labor';

/ɔ/ and /u/   in /rusɔh/ and /rusuh/   'dirty';

/ə/ and /ɛ/   in /trək/ and /trɛk/   'truck';

/e/ and /ɛ/   in /serɔ?/ and /sɛrɔ?/   'cooking tool';

/e/ and /i/   in /ekra?/ and /ikra?/   'cleaning tool';

/ɛ/ and /i/   in /putɛh/ and /putih/   'white';

/o/ and /u/   in /cano?an/ and /canu?an/   'cabin'.

2.2.3.3. Demak Dialect (Sudaryono,1990)

There are two kinds of phoneme variations. They include vowel and consonant variations. But as long as this study is about vowels, I only elaborate the variation of vowel found in Demak dialect. These variations do not change the meaning of the words.

The patterns of variation of vowel can be formulated below:

a. /i/ tends to be /ɛ/ in word 'nyilih' ('to borrow') , from the combination of {N-} + /silih/. So /ɲilih/ becomes /ɲilɛh/.

b. the variation of /i/ includes /u/ in /njipu?/ and /njupu?/ means 'to take'.

c. /u/ varies to be /ɔ/ in the word 'lawuh'; therefore

/lawuh/ varies to be /lawɔh/ means 'food'

d. /u/ tends to be /ɛ/ and in the same time another /u/

becomes /i/ in /lupguh/ that becomes /lipgɛh/ means

'to sit'.

2.2.4. Some Vowel Harmony Studies

There are studies on vowel harmony found in several

languages throughout the world. Some of them are :

1. Kisseberth (1969) in Hyman, 1975

In Yawelmani, long vowels as [e:] and [ɔ:], according

to Kisseberth, should be represented phonologically as long

vowels as /i:/ and /u:/ since in the underlying struc-

ture

/CCV(C)/, there is a tendency of complete copying of

the stem vowel if the structure applies a phonological

rule of

inserting a vowel between the first two consonants. The

process is in the following way :

a. CCe: (C) --> CiCe: (C)

b. CCa: (C) --> CaCa: (C)

c. CCu: (C) --> CuCɔ: (C)

d. CCɔ: (C) --> CɔCɔ: (C)

The copying of stem vowels are not completely, i.e.

the copied vowels are always short. But for a and c the

underlying forms of the stem should be CCi: and CCu:. These

vowels of the abstract underlying forms are copied but

losing the length quality. Therefore the solution requires

a rule in the following form:

a. $\begin{bmatrix} i: \end{bmatrix}$ --> $\begin{bmatrix} e: \end{bmatrix}$

b. $\begin{bmatrix} u: \end{bmatrix}$ --> $\begin{bmatrix} ɔ: \end{bmatrix}$

Only /u:/ and /ɔ:/ which merged as /ɔ:/ in all envi-
ronments involve absolute neutralizations. But still, both
involve setting up "imaginary forms", that is, phonological
forms which do not exist on the surface and that are con-
verted to phonetic forms in a context-free fashion.

2. Zimmer (1967,1970) in Hyman, 1975

He described vowel harmony in Turkisk which character-
ized on the roundness feature. In this language high vowels
agree in both backness and roundness. Thus, the vowel in
the momentary suffix /iyor/ is pronounced [ì] after front
unrounded vowels, and [u] after back rounded vowels.

3. Vago (1973) in Hyman, 1975

He reported front-backness harmony in Hungarian. It is
seen in this example. The first person plural suffix 'we'
is realized as *unk* after back vowels and *unk* after front
vowels, as seen in the following forms:

hoz-unk 'we bring'   ül-ünk   'we sit'

varr-unk 'we sew'   ver-ünk   'we beat'

However, there is a exception for several certain verb
stems with /i/ and /i:/ which these stems take back vowels
in their suffixs (although they consist of front vowels).
For example, *szid-unk* 'we curse", not **szid-ünk*. It is due
to that the vowels /i/, /i:/, /ɛ/. /e:/ are called 'neu-

tral' because of the odd way they interact with the normal vowel harmony rule.

If the neutral vowels co-occur in a stem.with 'normal' or no-neutral vowels, they seem less important as controllers of vowel harmony, then the neutrality itself is not a problem since the vowel harmony rule can be so constructed with ignoring neutral vowels and the last non-neutral vowel in the stem controls. However if a stem consists only neutral vowels, the vowel harmony system appears to break down, and so the harmonization looks random.

In order to predict the occurence of this exception or to prevent /unk/ from becoming *ünk*, he posited an abstract underlying high central unrounded vowel /i/ in the stem *szid*. By a low-level phonetic rule all instance of /ɨ/ would be converted to [i], but only after vowel harmony had had a chance to apply.

CHAPTER 3

PRESENTATION OF THE DATA