CHAPTER 4

ANALYSIS OF DATA

4.1. Occurrence within Morpheme Boundary

The occurrence of vowel harmony within morpheme boundary or especially in monomorpheme needs an analysis based on underlying representation of the appearing sounds. Whereas setting up underlying representation of each phoneme refers to the standard language and generative phonology which are not used in this thesis. The thesis also does not do any comparison with the standard style of the language. It is only going to describe how the similarity of vowels' phonetic features of Javanese words in Surabaya dialect which indicates certain pattern of vowel harmony.

There are two kinds of harmony found in the observed words. They are the harmony in all features together and harmony of height only. The relatively high position of the tongue when producing the vowels are almost at the same position, although the frontness of tongue position can be different or the same. If the frontness is different, it can be predicted that the tenseness of the vowels are in harmony too along with the harmony of the height. On the other hand, when there is resemblance of all features the vowels must be identical. In other words, the resemblance of all features indicates the occurrence of the same

vowels in single morpheme. This will be elaborated more later.

4.1.1. Height Vowel Harmony

Vowels of a morpheme may be in harmony in their feature of high position of the tongue. While the height of the tongue position itself is very relative and in gradation. Therefore, what is meant by height vowel harmony is one in which vowels are in some agreement of the height of the tongue position.

In this harmony, there are three kinds of height which these categorization are determined based on relative height. The categorization involves high, central, and low vowels. Vowels as members of vowel group usually undergo a vowel harmony process by combining them with the other members of the same group.

If front vowels are combined with back vowels, the agreement is on their value of height and also the tenseness. The agreement of value of height can indicate vowel harmony. It is supported by the fact that this kind of vowel combination has relatively higher combinations than others do.

Let see Table 3. The combinations of the same height vowels like /i/-/u/ or /u/-/i/,/o/-/e/ or/e/-/o/, and /ɛ/-/ɔ/ or /ɔ/-/ɛ/ have higher frequency rather than combinations of different height vowels.

From those facts, the harmony is considered as partial vowel harmony because the harmony is only on one feature, that is the high or low position of the tongue when producing the vowel and the tense also.

4.1.2. Harmony of Identical Vowels

Vowel harmony is usually indicated by the occurrence of same vowels like /ɔ/-/ɔ/, /o/-/o/, /u/-/u/, etc. Therefore, in the case within monomorpheme the occurrence of the same or identical vowels is regarded as vowel harmony because the vowels agree in all features (Hyman,1975:233). But, the occurrence within monomorpheme is doubtable because it seems that the occurrence of identical vowels is not the result of particular process of vowel harmony rather the original occurrence without any process. However, the occurrence of identical vowels has higher frequency which can support the prediction of vowel harmony to them.

The result of the research shows that not all identical Javanese vowels of monomorpheme have higher frequency than a vowel combined with other vowels. In other words, most vowels have higher frequency of occurrence if it is combined with itself, and it will be lower if it is combined with other vowels. Only a few vowels have lower occurrence in their identical vowel combinations. It means that a combination with other vowels, not with identical

ones, has higher frequency of occurrence .

Vowels which have higher frequency in their identical combinations are /u/, /ə/, /e/, /o/, /ɔ/, and /ə/. And the vowels which have lower frequency than other combination are /i/ which is lower than /ə/-/i/ and /ɛ/ which is lower than /ɛ/-/ɔ/ and /ə/-/ɛ/.

It is obvious that identical vowels establish complete vowel harmony which is indicated by a kind of vowel reduplication. Although the occurrence of vowel harmony is doubtful the principle of vowel harmony that all vowels within a specified unit agree in some phonetic feature (Hyman,1975:233) is fulfilled.

4.2. Occurrence Across Morpheme Boundary

Most phenomena of vowel harmony are found across morphemes boundaries. A couple of sounds from different morphemes undergo vowel harmony in certain condition. The sounds segment especially the vowels of different morphemes agree in some respect of phonetic features if only the morphemes are combined. In other words, the combining morphemes encourage the adjustment of involving vowels which can indicate the occurrence of vowel harmony.

The attachment of a morpheme to another, especially the affixes and the stems, causes the vowels of the morphemes to construct certain combination which possibly lead

to the occurrence of vowel harmony. Therefore. affixes play great role in producing vowel harmony. Some linguists think that there is no need to discuss the process of vowel harmony since an affix vowel can assimilate to the vowel in a neighboring syllable (Hyman,1975:235). However, some others say that vowel harmony is a kind of assimilation (Last,1984:171-172).

In this thesis, the occurrence of vowel harmony is analyzed based on the combination of vowel which is constructed by the result of morphemes combination. Then the combination of vowels is analyzed according to the nature of the combination, which is described in terms of the frequency of the occurrence.

There are two prominent points in this case. The harmony of height is also found in the occurrence of vowel harmony across morpheme boundary. Within the height vowel harmony there is a phenomenon of variation of phoneme in certain morphemes. The variation of phoneme does not change the meaning, and both forms are acceptable. Certain phoneme of a morpheme can undergo backness vowel harmony if the morpheme is combined with another.

4.2.1. Height Vowel Harmony

The height of vowels in a monomorpheme will change to certain value if the morpheme is combined with another morpheme. This phenomenon can be seen clearly on morphemes

with identical vowels structure. The change in the value of vowel feature occurs upon all vowels in the stem. The change includes the value of height and tense. Nevertheless, not all vowel phonemes change their value of height although each of them is in the similar condition and circumtance.

The vowels which undergo increasing of height are /o/ and /e/. The process can be described below.

1. Represented by the word 'usung', it can be seen that [o] changes to be [u] after the attachment of afixes.

   /osoŋ/ --> [osoŋ] `carry'

   root morpheme

   /oson/ + {-/ə n/} --> [usuŋən]
   {-/ɔ nɔ/} --> [usuŋɔnɔ]
   {-/ane/} --> [usuŋ^ne]

   The increase of height is clearer by this comparison.

   [o] [u]

   $\begin{bmatrix} - \text{ high} \\ - \text{ low} \\ + \text{ back} \\ + \text{ tense} \end{bmatrix}$ $\begin{bmatrix} + \text{ high} \\ - \text{ low} \\ + \text{ back} \\ + \text{ tense} \end{bmatrix}$

2. Represented by this word, it can be seen that in certain cases [ ] changes to be [i] after followed by a certain afix.

   /dewe/ --> [dewe] 'alone'

   /dewe/ + {-/an/} --> [diwi^n]

   The change of height value can be recognized by this comparison.

[e]	[i]
- high	+ high
- low	- low
- back	- back
+ tense	+ tense

3. This word can represent a particular case which harmonize [e] becomes [i]

   /deŋkle?/ --> [deŋkle?] 'stool'

   /deŋkle?/ + {-/e/} --> [diŋkli?e]

   This comparison can give a description of the change of height from a phoneme to the higher one.

[e]	[i]
- high	+ high
- low	- low
- back	- back
+ tense	+ tense

The harmony is that all vowels in the stem increase some of their feature value after being followed by certain suffixes. The suffixes begin with vowel /ə/, /ɔ/, /ɑ/, and /e/.

If the combination consist of not identical vowels but of same height ones like /i/-/u/, /o/-/e/ and /ɛ/-/ɔ/, it seems that high vowels cannot increase their value of height. But lower vowels are possible to increase their value of height. This example represents it.

/eroŋ/ --> [eroŋ] 'nose'

/eroŋ/ + {-/e/} --> [iruŋe]

The change is that [e] becomes [i], and [o] becomes [u].

The data do not show any phenomenon which indicates the change of /ɔ/ and /ɛ/ in a combination to be other higher vowels. It tends to keep the original form although the stem is combined with any affixes.

There is a variation of height vowel harmony involving vowel /e/. /e/ usually changes to /i/, but in certain words the vowel also can change to /ɛ/, after being combined with suffix. In the process of that /e/ becomes /ɛ/, the height value of /e/ is decreased. Vowel /o/ also has similar phenomenon that changes /o/ to /ɔ/. Although there is a change of height value, the vowels keep the value of backness. In other words, the process of height vowel harmony is limited upon vowels in the same backness. This word represent the phenomena.

/dolen/ --> [dolen] 'go to play'

/dolen/ + {-/an/} --> [dɔlɛnʌn] 'game or toy'

--> [dulinʌn]

The example shows that [o] can change to [ɔ] as well as [u]; and [e] becomes [ɛ] or [i]. The harmony is also indicated by increasing or decreasing of height value of all vowels in the stem. Therefore, if a vowel of the stem increases or decreases the value of height then the other vowel in the same stem will do the same process. Nevertheles, both forms are not different in meaning rather they are variants.

There are other kinds of height distinctiveness which involve middle vowels. The combinations that are meant consist of vowels with different backness and relatively different height too. There are 24 combinations in this qualification. In this kind of combination, the harmonization tends to occur on the front or back vowels, not on the middle vowels. These harmonized front and back vowels are usually as the second vowel. If the front or back vowel stands as the first vowel, it does not undergo any harmonization. Considering those limitations, there are only four combinations which are possible to be harmonized after the attachment of an affix. They are /ə/-/e/, /ə/-/o/, /ə/-/e/, and /ə/-/o/.

There is no fact which shows the changing from [ə] to [^] after any process. Therefore, middle vowels do not undergo height vowel harmony.

These words represent the combinations of middle vowel and front-central or back-central vowels.

1. /ə/-/o/

   /ɟantoŋ/ + {-/e/} --> [ɟ^ntuŋe] 'heart'

2. /ə/-/o/

   /kədoŋ/ + {-/e/} --> [kəduŋe] 'eddy'

3. /ə/-/e/

   /aŋen/ + {-/e/} --> [aŋine] 'wind'

4. /ə/-/e/-(/o/)

   /kətlesot/ + {-/e/} --> [kətlisute] 'lose'

In short, height vowel harmony which occur across morpheme boundary can occur upon back-central and front-central vowels. The results of the harmonization process are back-high and front-high vowels. That are

/e/ --> /i/

$$\begin{bmatrix} -\text{ high} \\ -\text{ low} \\ -\text{ back} \\ +\text{ tense} \end{bmatrix} \qquad \begin{bmatrix} +\text{ high} \\ -\text{ low} \\ -\text{ back} \\ +\text{ tense} \end{bmatrix}$$

/o/ --> /u/

$$\begin{bmatrix} -\text{ high} \\ -\text{ low} \\ +\text{ back} \\ +\text{ tense} \end{bmatrix} \qquad \begin{bmatrix} +\text{ high} \\ -\text{ low} \\ +\text{ back} \\ +\text{ tense} \end{bmatrix}$$

There are certain words which contain paticular vowel combination. The vowels undergo height vowel harmony too. The process of harmony flows both from lower vowels to higher ones and from higher vowels to lower ones. The vowels are /e/ and /o/. /e/ can change to /i/ or /e/; and vowel /o/ can change to /u/ or / / that the substitution of the phonemes and their derivatives does not change the meaning of the word. The derivatives of each phoneme are free variants.

The phenomenon is found in words like

a. /dewe/ --> [dewe] *'alone'*

/dewe/ +{-/an/} --> [dɛwɛʔʌn]

--> [diwijʌn]

b. /dolen/ + {-/an/} --> [dɔlɛnʌn] *'toy'*

--> [dulinʌn]

Height vowel harmony, generally, is a partial vowel harmony because the harmony is only on the feature of high or low position of the tongue.

4.2.2. Backness Vowel Harmony

The occurrence of backness vowel harmony in monomorpheme has lower frequency than height or identical vowel harmony. But if two morphemes are combined, it can be a harmony of their vowels without considering the frequency of the occurrence. However, the thesis is describing the appearing phenomenon of the observed words.

Backness vowel harmony is undergone only by phoneme /ɔ/. It is harmonized by the vowel of an affix. The harmonizing affix vowels can be /ɔ/, /a/, or /e/. The harmonization of /ɔ/ to /a/ can be the indication that [ɔ] is the allophone of [ʌ]. Although in other cases they are phonologically distinctive.

/ɔ/ and /a/ are distinctive in this minimal pair.

/tumɔn/ and /tuman/

'to recognize' *'habit'*

But [ɔ] appears to be the allophone of [ʌ] especially in complex morphemes, such as

/dɔwɔ/ + {-/ne/} --> [dʌwʌne] *'long'*

/gɔwɔ/ + {-/ne/} --> [gʌwʌne] *'carry'*

In short, the process of backness vowel harmony generally occurs upon /ɔ/ which changes to /a/. The change of backness is indicated by the change from back vowel to middle vowel.

CHAPTER 5

CONCLUSION