STYLISTIC ANALYSIS OF ENGLISH IMPERATIVE COMMAND MOOD TRANSFER TO JAVANESE

Yune Andryani Pinem and Fauzia Fahmi Yuniarti Nasution
Sekolah Tinggi Teknologi Kedirgantaraan, Yogyakarta
j.andryani@gmail.com and fauzianasution29@gmail.com

DOI: doi.org/10.24071/llt.2019.220102

received 13 November 2018; revised 13 January 2019; accepted 10 March 2019

Abstract

Imperative Mood (IM) for Javanese is strongly related to social status determining language choice. Triglossia of Ngoko, Madya and Krama are pictured in language use as well as prosodic features of pitch contour. To look at how English IM transfers to Javanese is the purpose of this research as well as how this process influences variant of pitch contours produced by Javanese speaker. This is a comparative study highlighting difference and similarity visualized by Javanese and English pitch contours with similar semantic meaning to be analyzed in pragmatics stylistic framework. Imperative to Command (IC) cannot take place in Bottom-Up situation in Javanese for social reason which puts Imperative to Request (IR) and Imperative to Invite (II) as substitutions. Using sound production of Javanese from Jogja and Solo on English and Javanese imperative, intonation pattern from both languages is analyzed using PRAAT and described in pitch range. Findings of this research display cultural background of Javanese in IM which may be useful for English pronunciation class.

Keywords: pitch contours, imperative mood, comparative, pragmatic stylistics

Introduction

As part of language learning process, study of sentence – syntax – will be on the list along with words, phrases and others. Imperative is one of sentences which can be identified in structure by the absence of subject. Appearance of this sentence can be observed in morphology and syntax form. Beside of sentence structure in morphology and syntax, imperative can be differentiated from other types of sentence by paying attention on its sound production which is imperative intonation and on its punctuation mark which is exclamation at the end of the sentence. This term is described by Verhaar (2006:257) and Rahardi (2005:79) as a strategy to make interlocutor to do or not to do thing mentioned on the speech such as: Pergi(lah)! (Indonesian) and Go! (English). Demanding level on imperative sentence can be also varied based on its structure (Ramlan, 2005) as 1) Command, 2) Invitation, 3) Request, and 4) Prohibition or semantic features of obligation, permission, acceptance and wish in English Imperative (Lapeyre, 1993). In aviation, imperative can be found both on written and verbal announcement all over the airport, aircraft and hangar. As instruction, this type of sentence can be found on manual and standard operational procedure. Those instructions are written in
English as aviation standardized language but can be also bilingual accordingly to the airport local language.

Application of imperative sentence context or Imperative Mood (IM) is strongly related to High-Low level of demand which is determined by authority factor and relationship between speakers as sociolinguistic variables. This is what Han means by imperative illocutionary interpretation in correlation with construction of sentence structure reflecting Mood and Force (Han, 1999). Different level of demand is affected by speaker authorities, which is defined by one of language function to differentiate social status level in the community. This variety level of demand can make Imperative Sentence either really demanding which is considered rude/full of authority or pleading which is more polite pictured by the concept of face-threatening acts (FTA). Therefore, Command Imperative or directive force (Jary and Kissine, 2016) obviously has the highest level of demand on the other hand Request Imperative has the highest level of demand.

In pragmatic for the purpose of politeness, Indonesian imperative divided into 5 (five) moods can be utilized differently by employing particular linguistic element. Politeness in Indonesian imperative is considered necessary if we bear social status in mind between the interlocutors. Those elements are including (Rahardi, 2005) the additional of suffix –lah, marker to lower status of tolong, harap or mohon, phrase of sudilah kirinya or diminta dengan hormat, marker of politeness of silahkan, diperkenankan or biarlah, marker to invite of ayo, coba or mari. In similar, these pragmatic elements are pictured by marker coba (Kurniawati, 2013), mangga and nggih in Javanese or please, will you and some other modals (Frank, 1972:58) in English with word distribution difference in syntax (Nasution, 2015).

Communication style in pragmatics to employ language based on level of social status can be found in Javanese with Triglossia Krama Inggil/Alus, Krama Lugu/Ngoko Alus and Ngo ko Lugu. The occurrence comes in order from the highest to the lowest considering social level of speaker or also known as language stratification (unggah ungguh basa). As one of the biggest population of user in Indonesia, Javanese Language is considered as national heritage. Geographical origin is known in cultural centre territory (Special region of Yogyakarta and Surakarta) as the central of Mataram Kingdom. Whilst this language exists all over Java island with several styles or variations, it is also varied as result of assimilation of the spreading of its speaker through government transmigration program to all over Indonesia.

No doubt, English has different construction of imperative sentence from Indonesian since they have different system and cluster. Therefore, to avoid difficulty in teaching-learning process, particularly in learning English as foreign language, contrastive analysis can be utilized. By comparing target language with student native language, potential pattern which causes problem in learning can be predicted and anticipated. Imperative sentence is not only marked by characterized marker in syntax, but also in sound production which may lead to different certain intonation. For English learner from Javanese background (L1), Javanese dialect in this intonation is unavoidable especially by looking at its language cluster (proto-
Austronesia) which shares none with English history (Proto-Germanic). Automatically, one language is different to another.

Interference of L1 toward L2 has been found in studies of Javanese speaker in producing English sound. Among those studies, several topics raised based on contrastive and comparative method which are applied toward both languages. In pronunciation, phonology element being highlighted are pronunciation shift (Laila, 2012), interdental affricative and alveolar approximant (Dewi, n.d.) (Dewi, 2014), vowel duration (Perwitasari et al, 2015), monophthongs production (Fakhrunnisa, 2015) and English consonants (Luviya, 2016). Other element being observed is Speech Community influence (Sudrajat, 2016) and perspective toward both languages (Amalia et al, 2018).

To look at how English Imperative Mood especially in Imperative to Command transfer to Javanese and how Javanese native speakers produce them in prosodic features is the objective of this study. Finding of this study may be beneficial to describe and anticipate potential problems for Javanese students in learning this English imperative mood.

Method
This was both theoretical and field study. From sastra.org, all possible transfer from 10 English IC to Javanese IC, IR and II were consulted and generated. This was for theoretical research which was the first and foremost data to be used as tool on further phonology field research. All data collected were analyzed linguistically on pragmatics especially related to Face Threatening Act and Politeness. For the phonology field research, 5 Jogja-Solo Javanese respondents were selected to produce and record all English and Javanese IM. This selection was done carefully by considering their family tree both from father and mother line. This consideration was taken to maintain the originality of culture and to minimize assimilation of culture as occurs in border area. These selected respondents were chosen from other Javanese who are not qualified for having one or two of his/her family on line who is no longer Jogja-Solo Javanese.

Each of respondents produced 10 English IM along with its 2 versions of its Javanese IM variation (Ngoko and Krama). Total 150 sound productions were recorded and collected from 5 respondents which were later stored into several categories of sentences. These categories were based on position of VI (initial, second and final) and on numbers of syllable (1, 2 and 3 syllables). Using PRAAT, the highest and lowest pitches were determined in hertz. These pitches were data to be analyzed and later to be drawn in a conclusion. Next, the difference between the highest and the lowest were calculated to know the distribution of intonation produced by all respondents.

Findings and Discussion
Pragmatic Stylistics, Analysis beyond the Language on Language Structure
Looking at prosodic features which are pitch contours on English Imperative Mood (IM) of Javanese speakers, one must pay attention on inter-lingual factors constructing the respondents. Mood is what really matters to Javanese since there is three-level of language (triglossia of Ngoko, Madya and Krama) determined by
social status of its recipient. 5 (five) categories of English IM which are Imperative 1) to command (IC), 2) to advise (IA), 3) to invite (II), 4) to prohibit (IP) and 5) to request (IR) can be applied differently in Javanese.

In applying Imperative Sentence, IC and IA are commonly designed in TOP-DOWN Situation which means that this comes from someone older (HSS: higher social status) to younger person (LSS: lower social status). In Javanese culture, one cannot simply command other with higher social status since it is considered impolite. Regardless language transfer process between English and Javanese, for the purpose of politeness in pragmatics, you don’t command yet you request, which in this case; Javanese puts different IM in usage.

In the contrary, one with HSS can easily command other with LSS. Therefore, language properly used is Ngoko which is the lowest among triglossia. BOTTOM-UP Situation occurs when one applies IR putting him/her in LSS. Lowering speaker status in IR and honoring the second speaker enhances possibility the one’s request to be accepted. In addition, Imperative Marker ‘Please’ in English is frequently replaced by ‘mangga’ or ‘tulung’ which means ‘help’ (Nurhayati and Mulyani, 2006:133) or ‘Ngapunten’ in Javanese which gives the sense of guilty feeling in semantic and showing strong hesitation in pragmatics. In IR, not only Javanese puts ‘Ngapunten’ as marker, but there is also tendency to elongate the sentence such as ‘Nyuwun tulung’ which means ‘ask for a help’ for FTA and honoring purpose. The longer the sentence, the more its’ politeness level as occurred in Indonesian.

In a situation where someone with HSS give an order to someone lower (IC occurrence), both in English and Javanese imperative style may occur as in table 2. Social status of the speaker on this conversation is higher than the addressee as from a teacher to a student, a senior to a junior, parents to a son/daughter or a superintendent to a subordinate.

<table>
<thead>
<tr>
<th>ENGLISH (IC)</th>
<th>Ngoko</th>
<th>JAVANESE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bring the bags</td>
<td>Gawakna tase</td>
<td>Tulung bektakaken tasipun</td>
</tr>
<tr>
<td>Open the door</td>
<td>Bukaken lawange</td>
<td>Tung bikaken lawangipun</td>
</tr>
<tr>
<td>Hurry up</td>
<td>Cepeta</td>
<td>Mangga enggal</td>
</tr>
<tr>
<td>Stop</td>
<td>Mandhega</td>
<td>Mangga kenedel</td>
</tr>
<tr>
<td>Sit down</td>
<td>Linggiha</td>
<td>Mangga lengghah</td>
</tr>
<tr>
<td>Switch off the light</td>
<td>Pateni lampune</td>
<td>Ngapunten, pejahaken lampu menika</td>
</tr>
<tr>
<td>Wake up</td>
<td>Tangia</td>
<td>Bapak, wungu, pak</td>
</tr>
<tr>
<td>Get out</td>
<td>Metua</td>
<td>Mbah, medial rumiyin</td>
</tr>
<tr>
<td>Wash your cloth</td>
<td>Kumbahen klambimu</td>
<td>Nggirahi agemanipun, bu</td>
</tr>
<tr>
<td>Stand up</td>
<td>Ngadega</td>
<td>Panjenengan jumeneng</td>
</tr>
</tbody>
</table>

Table 1

Imperative Transfer Process from English to Javanese

Source: www.sastra.org

Several distinctive characteristics can be found to depict imperative in Javanese in form of suffix after a directive force. Those suffixes adding give imperative meaning on verb. Among of suffixes in Ngoko, there are suffix-na (gawakna),
suffix-en (bukaken, kumbahen), suffix-a (cepeta, mandhega, linggiha, metua, ngadega), and suffix-i (pateni). In Krama, suffix can be found are –aken (betakaken, bikaken, pejahaken) and –i (nggirahi).

### Table 2

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>IMPERATIVE SENTENCE</th>
<th>DISTINCTIVE IM FEATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>English (IC)</td>
<td>“Bring the bags”</td>
<td>Verb imperative (VI) in directive force</td>
</tr>
<tr>
<td>Javanese (IC)</td>
<td>“Gawakna tase”</td>
<td>VI (Ngoko) + Suffix –na</td>
</tr>
<tr>
<td>Javanese (IR)</td>
<td>“Tulung bektaken tas menika”</td>
<td>Politeness marker + VI (Krama) + Suffix –aken (1a)</td>
</tr>
<tr>
<td></td>
<td>“Nyuwun tulung bektaken tasipun”</td>
<td>Asking marker + politeness marker + VI (Krama) + suffix-aken (1b)</td>
</tr>
</tbody>
</table>

Imperative feature found to depict ‘bring the bags’ in Javanese is suffix-na after a directive force. This force is represented by gloss in Ngoko (‘gawa’ or ‘bring’). However, there is a difference when someone with LSS wishes to give an order to someone higher. This is where IM switches from IC to IR. Requesting imperative occurs as in table 2. This is defined as a wish because this situation will never occur in a normal Javanese context. Speakers of this imperative context are the same with what can be found on table 1, yet in opposite direction (bottom-up) as from a student to a teacher, a junior to a senior, a son/daughter to parents or a subordinate to a superintendent.

In bottom-up situation, there will be a noticeable change showed by the appearance of Krama VI which is higher in language level replacing gawa (Ngoko) to bektaka (Krama). Along with this changing diction, the sentence is also elongate into more than 2 words by additional adverbs functioned as distinctive IM feature signing the transition of IM (Command to Request/Invitation) in Javanese. These features have different meaning based on various markers as follows:

**(1a) Politeness marker**

As the language switch from Ngoko to Krama in VI (gawa to bektaka), the sentence elongates by the presence of Javanese adverbs. Instead of merely saying ‘gawakna’, distinctive IM feature uses two words with additional politeness marker ‘tulung’ means ‘please help’ or ‘please’ to the VI. This marker is available to use in any Javanese IR to increase politeness level in requesting someone to do or don’t do something.

**(1b) Asking marker + Politeness marker**

Second version of Javanese IR adds ‘nyuwun’ means ‘asking for’ in front of politeness marker, which only means that the latter is more polite than the first because it is longer. In additional, not only imperative distinctive feature, but there is also a shift from a single noun ‘tas’ into phrasal noun ‘tas menika’ or suffix-e ‘tase’ into suffix-ipun ‘tasipun’ to give politeness impression when pointing the noun. In context, different impression between both glosses in Ngoko and Krama.
Javanese which means ‘the bags’ can be portrayed by the usage of index finger facing downward (tase) and thumbs or open palm facing upward (tasipun and tas menika) toward the referent noun.

Table 3

<table>
<thead>
<tr>
<th>LANGUAGE</th>
<th>IMPERATIVE SENTENCE</th>
<th>DISTINCTIVE IM FEATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>English (IC)</td>
<td>“Switch off the light”</td>
<td>VI</td>
</tr>
<tr>
<td>Javanese (IR)</td>
<td>“Ngapunten, tulung pejahaken lampunipun”</td>
<td>Guilty marker + Politeness marker + VI (Krama) + Suffix –aken (2)</td>
</tr>
<tr>
<td>English (IC)</td>
<td>“Stop”; “Hurry up”; “Sit Down”</td>
<td>VI/phrasal VI</td>
</tr>
<tr>
<td>Javanese (IR)</td>
<td>“Mangga kendel”; “Mangga enggal”; “Mangga lenggh”</td>
<td>Invitation marker + VI (Krama) (3)</td>
</tr>
<tr>
<td>English (IC)</td>
<td>“Wake up”; “Get out”; “Stand up”; “Wash your cloth, mum/madam”</td>
<td>VI/Phrasal VI</td>
</tr>
<tr>
<td>Javanese (IR)</td>
<td>“Bapak, wungu, pak”; “Mbah, medal rumiyin”; “panjenengan manga jumeneng”</td>
<td>Honorific Marker (HM) + VI (Krama) or verb (Krama) + repetitive HM (4a)</td>
</tr>
<tr>
<td></td>
<td>“Nggirahi agemanipun, bu”</td>
<td>HM + VI (Krama) + rumiyin (first, ahead) (4b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VI (Krama) + suffix-i + honorific marker (4c)</td>
</tr>
</tbody>
</table>

(2) Guilty marker

‘Ngapunten’ directly can be translated as ‘sorry’. Therefore by having this term in an imperative sentence gives semantic meaning of apologizing. In pragmatic, this state shows strong hesitant from the speaker toward the addressee of asking or telling him/her to do something. Again, this gives clear stratification between the speakers. Having this marker elongates the sentence since there are still politeness marker and VI with suffix afterward. The usage of ‘pejah’ is representing the highest gloss of Krama which are ‘mati’ (switch off) in Ngoko.

(3) Invitation marker

Instead of using directive words, in transfer process of English IC with single gloss, Javanese invitation marker is added in imperative represented by lexicon ‘mangga’ means ‘go ahead’. This occurrence of invitation marker is caused by hesitation to use only single word to ask someone older to do something. This marker has similarity with ‘please’ in English to avoid FTA toward addressee. Basically, by only putting this marker in front of any command along with Krama gloss will increase politeness level in imperative.
(4) Honorific marker

Another marker used to give politeness in IC is the occurrence of address form before (‘bapak’ (‘dad’ or ‘sir’) or ‘mbah’ (‘grandma’ or ‘granddad’ since it is genderless) for specific term or ‘panjenengan’ (formal ‘you’ or ‘vous’ in French) for general term 4a) and after (‘bu’ means ‘mum, mam or madam’ 4b) Krama verb. As in the occurrence of invitation marker, this address form also functions to save a HSS addressee from FTA of being asked to do something using only a single word by a LSS imperative operator. To say directive illocutionary force toward a HSS addressee along with his/her address form will honor him/her and therefore switch IC to IR in Javanese. Further, there is also a tendency to repeat the address in a shorten version as a way to put the addressee more in higher position. (‘bapak wungu, pak’ → bapak tobe shortened as pak. Second version of this usage of HM is the additional final of rumiyin which closely means ‘first’ or ‘ahead’ (4b). This word is an act of positioning the interlocutor as the first to honor her/him therefore is also considered as honorific marker. Finally, in addition, the word ‘nggirah’ means ‘wash’ is followed by suffix -i to give imperative meaning to order (4c).

What to keep in mind about these markers is that they are all interchangeable as adverb. There is no boundary to keep a certain marker in particular sentence only, yet it is free to be used in other sentence. Therefore, for one imperative order, one can have several variations of sentences according to his/her language style.

**IM switch during Language Transfer**

Although word-to-word transfer is possible from English IC to Javanese, yet, because of social level and politeness purpose, English IC must be switched to other IM in Javanese. This shift is necessary to keep the conversation as natural as in real Javanese context. Direct transfer from English IC to Javanese IC will give awkward and unusual situation when it occurs in BOTTOM-UP circumstance. Not only by the word choice and IM switch, but in context many times this change is also pictured by body gesture (bowing toward the addressee) and low tone sound.

‘stop’ → ‘mandega’ → ‘mangga kendel’
[English command/EC] → [Ngoko command/NGC] → [Krama invitation/KRI]

‘get out’ → ‘metua’ → ‘bapak, wungu, pak’
[English command/EC] → [Ngoko command/NGC] → [Krama request/KRR]

**Picture 1**

IM Switch in English-Javanese Transfer Proses
B. Pitch Contours Profile

Beside those linguistic elements to indicate IM, imperative sentence can also be recognized by the prosodic feature of pitch contours. English IM sound production is depicted on pitch, which is transcribable in ToBI as H*!H-L% (Jeong and Condoravdi, 2018). As mentioned earlier, IC and IR have difference in tone. Hypothetically, the first can be louder/higher in pitch than the latter considering direction of the order whether TOP-DOWN or BOTTOM-UP. However, this may depend on VI configuration as nuclear of the sentence, whether sentence-initial or final (Feldhausen, Brehm, & Lausecker, 2014). For IM transfer from English to Javanese, there are three positions of VI based on Mood’s interpretation on sentence structure.

Pitch H/L Range

150 Imperative Sentences both in English and Javanese are produced and recorded by 5 native Jogja-Solo Javanese. In both language, each respondent produce by merely reading the sentence without any additional context as to whom the sentence is addressed. However, since there is an indicator in the body of the sentence represented by gloss, in Javanese Imperative Sentence, each respondent is able to create context spontaneously and act out the sentence as in normal situation.

Each of production in sentence is measured in hertz to know the highest and the lowest pitch score. In a diagram, all high and low pitches are presented as follows:

As depicted by Picture 2, maximal pitch for all English IC production is higher than minimal pitch in average. However, there is one condition where maximal pitch is lower than average maximal pitch in overall. It is presented by pitch contour in English IM ‘wash’ (199.33 Hz) which is produced by R1 who is a male. Even though this particular VI is in one syllable, this occurrence happens in more than one syllable imperative sentence ‘wash your cloth’. Since sound production is
affected by its surrounding, it is common to have declining in pitch in a longer sentence. It is supported by the fact that regardless his low maximal pitch compared to others, this respondent constantly produces lower minimal pitch (130.74 Hz) in exactly the same VI. Different phenomena can be found in abnormality of R1 when producing ‘bring’. This VI is also in one syllable, but come in a longer sentence ‘bring the bags’. It results in a significant range between high and low pitch (513.08/79.95). There is also one range production which is quite different. It is pitch range produced by R3 – a female – with H/L range between 425.15 Hz and 220.90 occurred on more than one syllable VI ‘wake up’.

There is not much that picture 3 can portray except that there is a consistency of pitch range produced by all respondents. This is not so surprising since this occurrence reveals in more than one syllable of VI. Of course there will be a tendency to retreat sound on that position therefore the high pitch will be withdrawn by the low and on reverse. As in English Imperative, R1 reveals substantially lower high pitch compared to others. Repetitively, he does this to a series of three syllables VI. However, he also shows a very distinctive range of H/L on Javanese ‘gawakna’ from ‘gawakno tas kuwi’ (372.18/97.83) and ‘bukaken’ from ‘bukaken lawange’ (416.39/77.58). In average, this range difference is more than ten times bigger in number compared to his closest H/L range on ‘ngadega’ (191.23/161.07). This condition is also triggered by length of sentence. Both ‘gawakna’ and ‘bukaken’ appears in a longer syllables of a complete sentence ‘gawakna tase’ and ‘bukaken lawange’, while ‘ngadega’ although emerges in 3 syllables yet it is only one in one word of imperative sentence. Similar with this circumstance, other respondents also give the identical pattern of ‘gawakna’ and ‘bukaken’.

![Picture 3.](image-url)
Surprisingly, R1 who is a male respondent produces repetitively lower high pitch production on Javanese Krama compared to other respondents. However, looking at low pitch position, it can be said that both male respondents are able to maintain relatively close low pitch production between above 50 Hz to less than 150 Hz. Nevertheless, R5 depicts significantly different range of pitch. By considering range pattern between high and low pitch production, R5 shows a substantial range on VI on imperative sentences with more than two words. This difference of ranges are demonstrated on ‘jumeneng’ (417.66/69.15), ‘medal’ (355.41/90.86) and ‘kendel’ (306.44/90.87). It seems that R5– while constantly maintain lower pitch tend to put distinctive range of high and low pitch in long imperative sentences to make his sentence more politely.
Looking at the distribution of each difference of High and Low Pitch produced in English, Javanese Ngoko and Javanese Krama, clearly that each respondent has his/her own style in delivering imperative sentence. However, it can be seen that range high pitch to low pitch in English and Ngoko IC – pictured by the black and orange line – has too much irregularity. It can be sometimes bold and noteworthy, yet in other production it can be insignificant. This free style in English IC is considered normal because with no category in social level, it is function to give order to interlocutor. On the other hand, imperative sentence in Krama consistently are able to be maintained in small range of high pitch and low pitch except for R5 who does this to make his imperative Krama more politely. Therefore, having the same randomness in pattern, Javanese Ngaka is the closest in intonation for English IC transfer, while Javanese Krama may represent other IM in English.

Conclusion

In order to make it as natural as possible, English IC transfer to Javanese can be done in three different ways. First, direct Command Mood can be transfer into Javanese Command Mood in Ngaka which occurs in Top-Down situation. In bottom-up situation, it is considered impolite to order someone in higher status, therefore IM changes to requesting and inviting. This change of IM represented by the occurrence of Krama VI, several distinctive IM features and elongate sentence.

From irregularity of high/low pitch range shared by English and Ngoko IC, it can be generated that even though all respondents does not have any context in mind about each imperative sentence, yet all are able to put similarity between giving an order in English with giving an order in Ngoko. Without context, it is clear that English IC and Javanese Ngoko is similar in intonation pattern showing that speech community does not put any border between high-low social status and imperative command is meant to be delivered freely with no social boundaries. In contrast, because of difference in gloss, all respondent are able to set abstract context in mind about giving an order in bottom-up situation. Spontaneously, all respondents are able to maintain intonation in low pitch as a sign of respect toward interlocutor. In addition to this phenomenon, there is also a repetitive small range of difference between high and low pitch in general.

This research limits at the possible transfer of English IC to Javanese and how it can be seen in the production of intonation. However, this study is still potential to develop more by looking at socio-pragmatic features of English IC affecting in the production of intonation. There is also phonological rule in short and long sentence that may affect in the position of highest and lowest pitch which has not being observed in this exploration.

References


