Distinctive Features

A. Major Class Features

[± cons] (Consonantal - Nonconsonantal)
Sounds which are [+ cons] are those which have some kind of constriction along the center of the vocal tract. This constriction must be at least as narrow as that required for a fricative.

[± son] (Sonorant - Nonsonorant)
Sounds which are [+son] are those which are produced with a constriction in the vocal tract that allows the air pressure both behind and in front of the constriction to be relatively equal. This feature generally divides the sound system into sonorants ([+son] sounds), which are nasals, approximants, glides, and vowels, and obstruents ([−son] sounds), which are oral stops, fricatives, and affricates.

[± approx] (Approximant – Nonapproximant)
Sounds which are [+approx] are those sounds whose constriction allows for a frictionless escape of air. (Note: This is not an SPE feature.)

[± syllabic] (Syllabic – Nonsyllabic)
Sounds which are syllabic function as the nuclei of syllables.

B. Manner of Articulation Features

[± cont] (Continuant – Noncontinuant)
Sounds which are [+cont] are those which are produced without a central blockage in the vocal tract. For example, fricatives have a central constriction, but there is no complete blockage of the air, and they are therefore, [+cont].

[± nas] (Nasal – Nonnasal)
Sounds which are [+nas] are produced with nasal airflow.

[± lat] (Lateral – Nonlateral)
Sounds which are [+lat] are produced with airflow passing through one or both sides of the tongue, which is in contact with the central part of the oral cavity.

[± strident] (Strident – Nonstrident)
Sounds which are [+ strident] are characterized acoustically by highly random noise as a result of forcing the airstream through a very narrow channel towards the upper front teeth.

[± del rel] (Delayed Release – Instantaneous Release)
Only affricates are [+ del rel] sounds.

C. Laryngeal Features

[± voice] (Voiced – Voiceless)
Sounds which are [+voice] are those which are produced with vibration of the vocal folds.

[± spr gl] (Spread Glottis – Nonspread Glottis)
Sounds which are [+spread glottis] are those produced with a glottal configuration that produces audible glottal friction. For example, the aspirated stops in English are [+spread glottis]

[± constr gl] (Constricted Glottis – Nonconstricted Glottis)
Sounds which are [+constricted glottis] are those which are produced with the vocal folds drawn together and tense.

D. Cavity Features

[± lab] (Labial – Nonlabial)
Sounds which are [+labial] are produced by the lips.

[± ant] (Anterior – Nonanterior)
Sounds which are [+ant] are produced no further back than the alveolar ridge.

[± cor] (Coronal – Noncoronal)
Sounds which are [+ cor] are produced by raising the blade of the tongue towards the teeth, the alveolar ridge, the palato-alveolar (alveo-palatal) region, or the hard palate.

[± distr] (Distributed – Nondistributed)
Sounds which are [+ distr] are produced with an obstruction that extends over a considerable area along the middle line of the oral tract.

**E. Tongue Body Features**

[± high] (High – Nonhigh)
Sounds that are [+ high] are produced with a raised tongue.

[± low] (Low – Nonlow)
Sounds that are [+ low] are produced with a lowered tongue.

[± back] (Back – Nonback)
Sounds that are [+ back] are produced with a retracted tongue.

**F. Tongue Root Features**

[± tense] (Tense – Lax)
Tense vowels are produced with more muscular tension and greater constriction than lax vowels

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**Natural Classes**

**Definition**
A natural class is a set of sounds that have certain phonetic features in common and act together in phonological rules.

All the members of a natural class are affected in the same way in the same environment. Similarly, all members of a natural class have the same effect on other sounds that occur in their environment.

For a group of sounds to constitute a natural class,
- they must all share one or more features and
- there should be no other sounds in the language that have this feature or combination of features.

**Examples (English)**
Voiceless stops form a natural class. They all have the same effect on voicing a following fricative (realized as [s]). Likewise, voiced stops form a natural class and all have the same effect on a following fricative (realized as [z]).

\[
\begin{array}{ll}
\text{map} & \text{tab} \\
\text{cup} & \text{cub} \\
\text{mat} & \text{fad} \\
\text{hit} & \text{bid} \\
\text{pack} & \text{rag} \\
\text{tick} & \text{leg}
\end{array}
\]