Linguistics 331 Dan Silverman
Fall 2006

**Homework 3: Features**

1. Consult the IPA chart and the lecture notes, then find the feature or features that distinguish the two sounds in the following pairs (10 points for undergrads, 5 points for graduates):

   (a) ts, tʃ

   (b) i, j

   (c) e, o

   (d) i, ɛ

   (e) ɸ, v

2. Assume a segmental inventory composed of [ʕ, k, t, d, s, z, n, p, f, b, i, u, e, o, ɑ, w, h]. Indicate what feature or features characterize the following classes of sounds as natural classes, being as economical as you can with your use of features (10 points for undergrads, 5 points for graduates):

   (a) [t, s, d, z, n]

   (b) [ʕ, k, u, o, ɑ, w]

   (c) [f, p, k, h]

   (d) [ʕ, u, o, w, ɑ, b, d, z, n, i, e]

   (e) [i, u, e, o, ɑ, w]

3. Assume a language with the following segmental inventory:

   [p, t, ts, tʃ, c, k, ɸ, f, θ, s, ʃ, x, b, d, dz, dʒ, ɟ, m, n, ŋ, l, i, e, o, u, ɑ, y, ø, w, j].

   In each of the following groups, one of the segments is not a member of the natural class which the other sounds belong to. Identify that sound, and state what feature or features characterize the remaining class of segments (10 points for undergrads, 5 points for graduates).

   (a) [c, ʃ, ɟ, i, e, y, ø, j]

   (b) [t, ts, tʃ, θ, s, ʃ, d, dz, dʒ, ɟ, n, l]

   (c) [c, k, x, dʒ, ɟ, ŋ, i, u, y, w, j]

   (d) [k, x, ŋ, o, u, ɑ, w, j]

   (e) [p, ɸ, f, b, m, l, o, u, y, ø, w]

4. Formalize the following rules using features. Segmental inventories to be assume for each language are given in brackets (20 points):

   (a) b, d, ɡ → β, ð, ɣ / V __ [p, t, k, b, d, ɡ, β, ð, ɣ, m, n, ŋ, ɹ, i, u, ɑ, ʎ]

   (b) p, k, q → β, ɣ, ʁ / V __ [p, t, tʃ, , k, q, β, ɹ, dʒ, ɣ, ʁ, m, i, ĩ, e, ẽ, æ, o, u, ũ]

   (c) Ø → j / i, e __ u, o, ɑ [p, t, k, b, d, n, j, w, i, y, e,æ, u, o, ɑ]

   (d) C → C$^{j}$ / __ i, e, j [p, t, k, b, d, ɡ, f, v, s, z, x, m, n, l, ɹ, j, w, i, e, ɑ, o, u]

   (e) n assimilates in place to a following stop or affricate

   [p, t, k, q, ts, tʃ, f, s, ʃ, x, h, m, n, ŋ, i, y, ɯ, u, e, ɸ, ɑ, o]