from the digraph figures) is traceable partly to the high uncertainty in the identity of the next state. From this we may infer that vowel states are flexible in that they allow great latitude in the types of letter distributions for following letters, viz., final letters, space, vowels themselves, consonants, pre-vowels. The vowels may then be viewed as pivotal letters "permitting" word endings and other types of letter distributions to produce what they may. Perhaps one may think of them as the oil of English.

Gross similarity of h to vowels in the 12 state model (where h dominates state 4) can be observed when we refer to Table IV where we see that in state 4 we have relatively high uncertainty about the next state, and low entropy for the letter produced, and this is a phenomenon shared by vowel states. When we have a model with a small number of states and this phenomenon is not possible we find h in a vowel state.

Let us return to the point raised earlier, that we may study the trend in uncertainty as the number of states increases.

As one might expect, as the number of states increases, the average uncertainty in the letter produced by a state $(H(Y|X))$ decreases uniformly, as the letters tend to



separate more strongly into the more refined types of states one encounters; thus, in general, states have less and less uncertainty in the letters they produce. However, as the number of states increases, the uncertainty in the next state following a state $(H(X))$ would be expected to increase since there are more states to go to. This is borne out, but the increase is far less than one might naively expect. For example, suppose the number of states is increased from 5 to 10. On the basis explained above, the entropy $H(X)$ (since it is expressed in logarithms to the base 2) should increase by 1. It does not; from Table III we see that it increases by only .41. This indicates in some sense the fact that the models become more meaningful; increasing order is introduced into the models.