speaking a jargon that the parents found quite incomprehensible. The third child in the family, who was a few years older than the two problem children, had apparently no trouble understanding his brothers and often acted as their translator. After listening to the children for a few evenings, Professor Applegate discovered that the children were using a secret language of their own devising: by adding two rules to standard English, they were rendering their language quite impenetrable to their parents—although not to their brother.

Specifically, Professor Applegate found that the children's speech was modified by two rules absent from their parents' English. In words containing two identical stops—i.e., two occurrences of a sound from the set [p t k b d g]—the children's speech was subject to a Glottal Stop Rule that replaced the second stop by a glottal stop [ʔ]. The children therefore pronounced words such as cake, daddy, and paper as shown in group 1 of Table 8.

Second, the children's speech lacked affricates and fricatives—i.e., sounds belonging to the set [f θ s ʃ ɹ s ʔ z ʃ z] were not used. In the children's language, a Consonant Rule replaced these with the corresponding stops—[f] by [p], [θ s ʃ ɹ] by [t], [ʔ] by [b], and [z ʃ z] by [d]. As a result, the children pronounced alike words that are differentiated in adult speech, as shown in groups 2 and 3 of Table 8.

That was not all, however. The children differentiated the stop sound that arose by the Consonant Rule from all other stop sounds: only the latter were replaced by glottal stops as a result of the Glottal Stop Rule. (Additional examples are shown in group 3.) These rules, like those in the Kasem plural formation, were applied in a definite order, first the Glottal Stop Rule and then the Consonant Rule. Thus, did became di[ʔ] by the Glottal Stop Rule, and the Consonant Rule was not applicable. On the other hand, doze, to which the Glottal Stop Rule was not applicable, became do[d] by the Consonant Rule. Since the rules are ordered, it is impossible at this point to apply the Glottal Stop Rule again.
Some Words In a Language Invented by Children

<table>
<thead>
<tr>
<th>1</th>
<th>cake</th>
<th>caH</th>
<th>daddy</th>
<th>da[›]y</th>
<th>paper</th>
<th>paHer</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>full</td>
<td>[p]ull</td>
<td>pays</td>
<td>pay[d]</td>
<td>walks</td>
<td>walk[t]</td>
</tr>
<tr>
<td></td>
<td>pull</td>
<td>[p]ull</td>
<td>paid</td>
<td>paid</td>
<td>walked</td>
<td>walk[t]</td>
</tr>
<tr>
<td>3</td>
<td>suit</td>
<td>t[j]uit</td>
<td>doze</td>
<td>do[d]</td>
<td>fife</td>
<td>[p][t]</td>
</tr>
<tr>
<td></td>
<td>toot</td>
<td>too[fl]</td>
<td>did</td>
<td></td>
<td>pipe</td>
<td>pi[pl]</td>
</tr>
</tbody>
</table>

Table 8. To give themselves a "secret" language, two children devised an elaborate set of transformations for common English words. Like the Kasem language of West Africa, the children’s language was based on rules rather than rote memory—an indication, writes the author, that humans prefer even complex computation to rote memory. The relationship between the children’s words and their cognates in adult varieties of American English is obvious in most instances, yet the differences were sufficient to block comprehension by adults. The PI is the phonetic symbol for a glottal stop, the sound that appears between the words *an aim* when the phrase is pronounced to differentiate it from the phrase *a name*.

While this system may seem surprisingly sophisticated, both it and the rules of Kasem are instances of the human tendency to use rules— with sometimes unexpected results. In the case of the Cambridge children, the tendency was used to obstruct rather than facilitate communication.

**Language as Genetic Endowment**

To summarize, the core of knowledge that fluent speakers have of their language has the form of rules, and these rules go well beyond what is directly observable in the movements executed by our vocal organs in speaking and the resulting acoustic signals. Each language has its own special set of rules, and these rules constitute the essence of what we learn when we acquire mastery of a given language. In learning these rules, young children require no special instruction, and much of what they—or, for that matter, any language students—learn never enters their consciousness. Underlying these rules is a set of highly abstract hypotheses about language, including such propositions as these: Speech is made up of words; words, in turn, are made up of sequences of sounds subject to definite rules; the rules affect specific groups of sounds; the same groups of sounds figure in other rules in English as well as in other languages; and the rules of any given language interact in the fashion shown by the Kasem plurals and the children’s secret language.

The highly sophisticated character of these propositions excludes the possibility that they are acquired through experience. Yet the attainment of fluent command of a language by a native speaker crucially implies access to these and similar propositions. The conclusion, there-
fore, is that these propositions are a special aspect of the human genetic endowment, that they are part of what makes our species distinct from all others.

**Bibliography**


**FOR DISCUSSION AND REVIEW**

1. How does Halle support his argument that "our perception that utterances are made up of words is a kind of illusion"?

2. Summarize four principles of English word structure. Describe when and how you learned them. If you know a language other than English, analyze whether or to what extent these same principles apply to it.

3. Why is it significant that the same groupings of sounds occur in the rules of many unrelated languages? Give two examples of such groupings. What kind of principle seems to govern the composition of these groupings? (Note: In answering the latter question, you may find it useful to review the preceding selection, "Phonetics" by Edward Callary.)

4. Halle refers to "the exuberance with which languages use rules" and illustrates his point with examples from Kasem, a language spoken in West Africa. Drawing on your own knowledge, give an example from another language. Explain how the Kasem example supports Halle's conclusion that "recourse to computation is so strongly favored over rote memory that speakers apparently do not have the option of foresaking rules for memorization."

5. Pig Latin and Ab-language are only two of the many secret languages that children have developed. If you know another such language, write out an explanation of its rules. Describe how you learned the language.