

(G) Break it Down! (1/2) [5 Points]

Computers, like humans, often encounter words they have never seen before among the stream of language constantly inundating them, which can pose a challenge for the computer's understanding of language. One approach for handling novel words is to use a *character-level* model of language: Whereas word-level models treat words as non-decomposable units, character-level models can learn how individual letters (or chunks of letters) work together to create word meaning. For example, if a character-level model encounters the novel word *non-walruslike*, it could figure out its meaning based on the meanings of smaller chunks (*non-*, *walrus*, and *like*).

However, such a model might make mistakes if it breaks the word down incorrectly. The table on the left shows a list of words that a hypothetical character-level model might interpret incorrectly, while the table on the right shows (in random order) the definitions it might generate.

| | |
|-----|---------------|
| 1. | battery |
| 2. | biking |
| 3. | bowling |
| 4. | conundrum |
| 5. | decent |
| 6. | divergent |
| 7. | extent |
| 8. | idealist |
| 9. | incoming |
| 10. | message |
| 11. | missing |
| 12. | mistrust |
| 13. | preached |
| 14. | pronouncement |
| 15. | properties |
| 16. | protractor |
| 17. | puffiness |
| 18. | resting |
| 19. | trivial |
| 20. | unison |
| 21. | weeknight |

| | |
|----|---|
| A. | ordered group of notions |
| B. | small arrow-shooting device |
| C. | having two male monarchs |
| D. | item sharing the role of being a beaten instrument used by female religious figures |
| E. | did hurt beforehand |
| F. | in favor of a large farm vehicle |
| G. | not attending |
| H. | sharply wound once more |
| I. | era of disorder |
| J. | like pancake-making material |
| K. | remove pennies from |
| L. | courteous man who descends below water |
| M. | having three small glass containers |
| N. | flaky reddish material created by water droplets |
| O. | small horseman |
| P. | material binding together <i>I</i> , <i>you</i> , <i>she</i> , <i>he</i> , etc. |
| Q. | improperly produce a tune |
| R. | former cloth dwelling |
| S. | appropriate pieces of neckwear |
| T. | female northern bird |
| U. | having one male child |



(G) Break it Down! (2/2)

G1. On your answer sheet, match the words with the definitions they would be given.

| | | | | | | |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. <input type="text"/> | 2. <input type="text"/> | 3. <input type="text"/> | 4. <input type="text"/> | 5. <input type="text"/> | 6. <input type="text"/> | 7. <input type="text"/> |
| 8. <input type="text"/> | 9. <input type="text"/> | 10. <input type="text"/> | 11. <input type="text"/> | 12. <input type="text"/> | 13. <input type="text"/> | 14. <input type="text"/> |
| 15. <input type="text"/> | 16. <input type="text"/> | 17. <input type="text"/> | 18. <input type="text"/> | 19. <input type="text"/> | 20. <input type="text"/> | 21. <input type="text"/> |

G2. What English words would the model give the following definitions? Hint: One of these three words appears on the previous page. Write your answers on the answer sheets.

A. having two male children

B. did hurt once more

C. not going out with

