

The Rise and Fall of Periphrastic *Do* in Affirmative Declaratives

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Due to the extensive collection of data, published by A. Ellegård in 1953, it is possible to analyze the development of periphrastic *do* in English from the late fourteenth century to the beginning of the eighteenth century. Some of the most important results can be found in [1], [2], and [3]. The main contribution of [1] is the use of the S-shaped logistic curve to model the change in frequency, p , of periphrastic *do*. In general, the logistic curve arises as the solution of the differential equation

$$(1) \quad \frac{dp}{dt} = sp(m - p), \quad t \geq T,$$

where s and m are constants, t is the time variable, and T is a fixed point in time (in [1-3], $m = 1$ is used and t is rescaled so that $T = 0$). Papers [2] and [3] deal more with explanations of the change and their authors agree on many points, but they also have points of departure. One of them is their different views on the historical development of periphrastic *do* in affirmative declarative sentences. The problem with these sentences is that the data cannot be fitted to the logistic curve, as opposed to all other sentence-types considered (negative declaratives, affirmative and negative questions, and negative imperatives). The data for affirmative declaratives follow the logistic curve only up to the mid-sixteenth century and after that periphrastic *do* starts to disappear in this environment. Kroch hypothesizes that this is due to a grammatical reanalysis, whereas Ogura's explanation is that the restricted use of *do* won the competition against its nonrestricted use and affix hopping.

The purpose of my paper is twofold. First, I show that a combination of two logistic curves gives a good fit for the affirmative declarative data. The first curve solves (1) with some $s = s_1 > 0$, $m \approx .1$, and $T = 0$. Then, as p gets close to its maximum (which is just below m) at $t = t^*$ (which corresponds to the mid-sixteenth century), a switch is made to a decreasing logistic curve with the same m , but with $s = s_2 < 0$ and $T = t^*$. This shows that the same model which is used to describe the rise of periphrastic *do* in all environments can also be used to describe the decline of *do* in affirmative declaratives.

Second, I use another model, based on grammar efficiency, [4-7], to support grammatical reanalysis as a possible factor in the development of *do* in affirmative declaratives (after all, Ogura's view does not necessarily contradict Kroch's, even though Ogura says it does). The reanalysis in question is that of emphasis. This reasoning is motivated by the fact that the Present-day English uses periphrastic *do* in affirmative declaratives only for emphatic *do*. In many cases of syntactic change (not restricted to reanalysis), [4-7], the grammar efficiency models show a certain pattern which may be viewed as a syntactic change universal. When the same approach is applied to the change in the use of *do* in affirmative declaratives, then the model with emphatic *do* is much closer to the universal pattern than the model without it.

References

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