Essential Dutch Dictionary by G. Quist and D. Strik, the Graphical Law classification

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Abstract

We find that the Essential Dutch Dictionary by G. Quist and D. Strik is classified by a magnetisation curve of a Spin-Glass in the presence of little external magnetic field.

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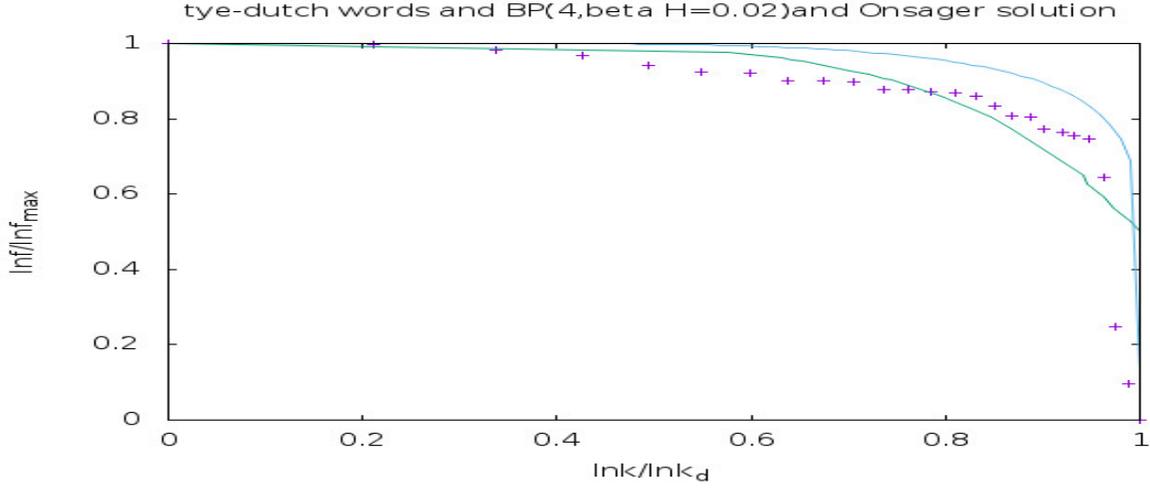| A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
763	1173	245	658	328	214	757	531	333	103	876	515	487	261	1049	652	6	553	1327	639	227	1294	550	0	2	400

TABLE I. the Essential Dutch dictionary words

FIG. 1. Vertical axis is $\frac{lnf}{lnf_{max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary with the fit curve being Bethe-Peierls curve with four nearest neighbours, in presence of little magnetic field, m=0.01 or, $\beta H = 0.02$. The uppermost curve is the Onsager solution.

I. INTRODUCTION AND RESULTS

In this short note we try to classify the Essential Dutch dictionary by G. Quist and D. Strik, [1], by studying the essential dutch words. The Dutch language alphabet is composed of twenty six letters like English. We should keep in mind the Essential nature of this dictionary. We count all the essential dutch words, [1], one by one from the beginning to the end, starting with different letters. The result is the table, I. Following the subjects, [2]-[12], as developed into methods and elucidated in, [13]-[32], we obtain the graphical results as the figures, 1-13, k_{lim} being the same as k_d.
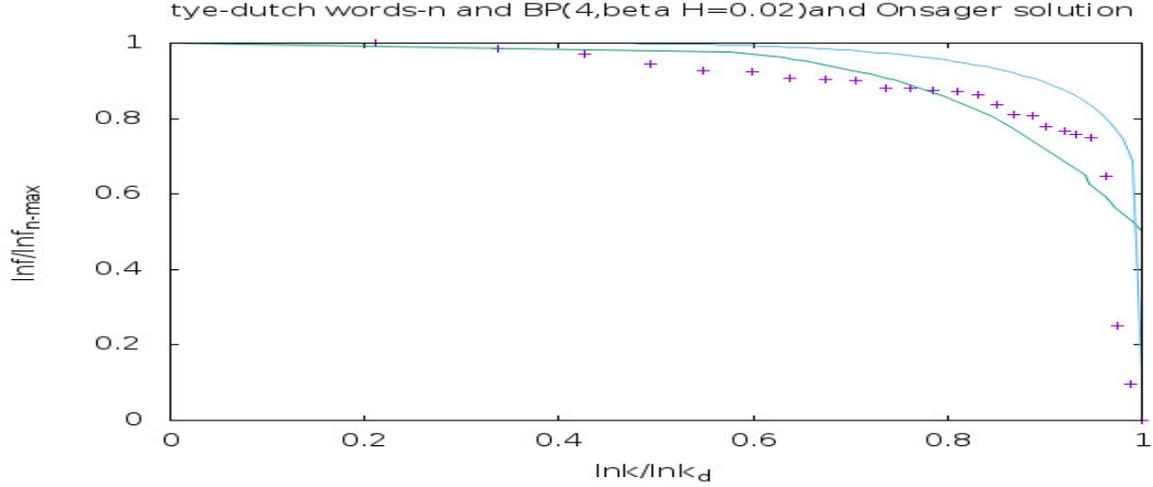
FIG. 2. Vertical axis is $\frac{lnf}{lnf_{next-max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary with the fit curve being Bethe-Peierls curve with four nearest neighbours, in presence of little magnetic field, m=0.01 or, $\beta H = 0.02$. The uppermost curve is the Onsager solution.
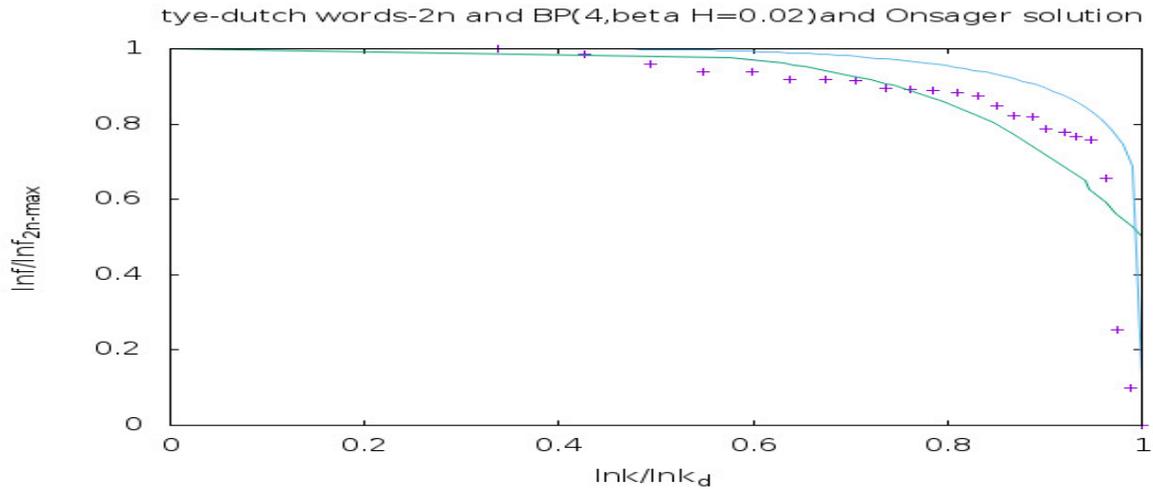

FIG. 3. Vertical axis is $\frac{lnf}{lnf_{nextnext-max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary with the fit curve being Bethe-Peierls curve with four nearest neighbours, in presence of little magnetic field, m=0.01 or, $\beta H = 0.02$. The uppermost curve is the Onsager solution.
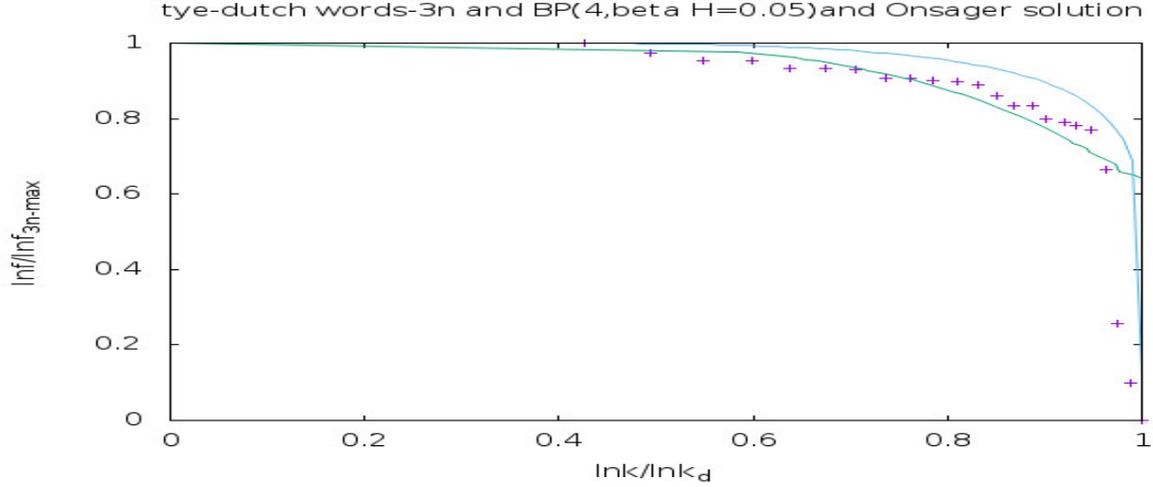
FIG. 4. Vertical axis is $\frac{lnf}{lnf_{nextnextnext-max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary with the fit curve being Bethe-Peierls curve with four nearest neighbours, in presence of little magnetic field, m=0.025 or, $\beta H = 0.05$. The uppermost curve is the Onsager solution.

FIG. 5. Vertical axis is $\frac{lnf}{lnf_{nextnextnextnext-max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary with the fit curve being Bethe-Peierls curve with four nearest neighbours, in presence of little magnetic field, m=0.05 or, $\beta H = 0.10$. The uppermost curve is the Onsager solution.

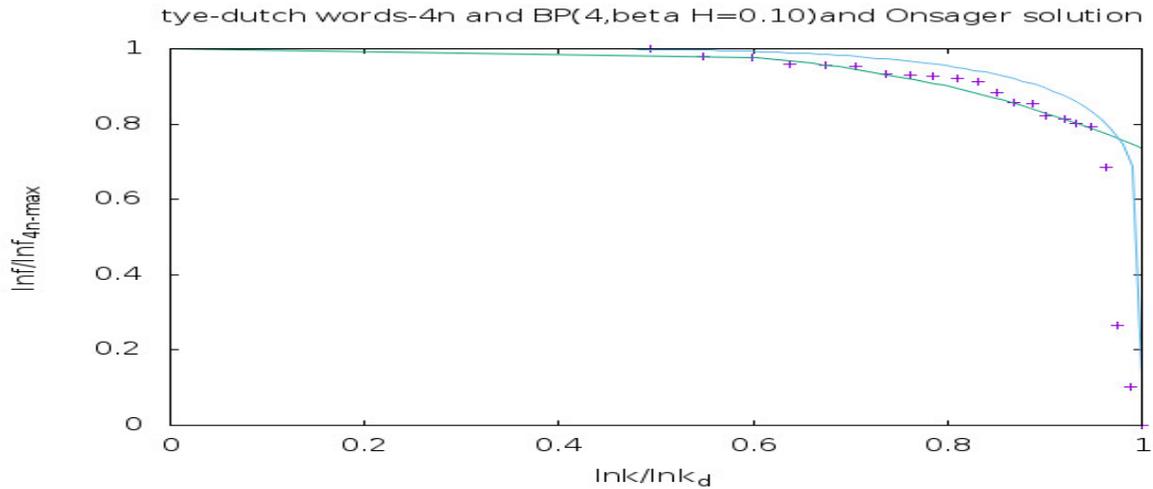tye-dutch words-5n and BP(4,beta H=0.10)and Onsager solution

FIG. 6. Vertical axis is $\frac{lnf}{lnf_{nnnnn-max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary with the fit curve being Bethe-Peierls curve with four nearest neighbours, in presence of little magnetic field, m=0.05 or, $\beta H = 0.10$. The uppermost curve is the Onsager solution.
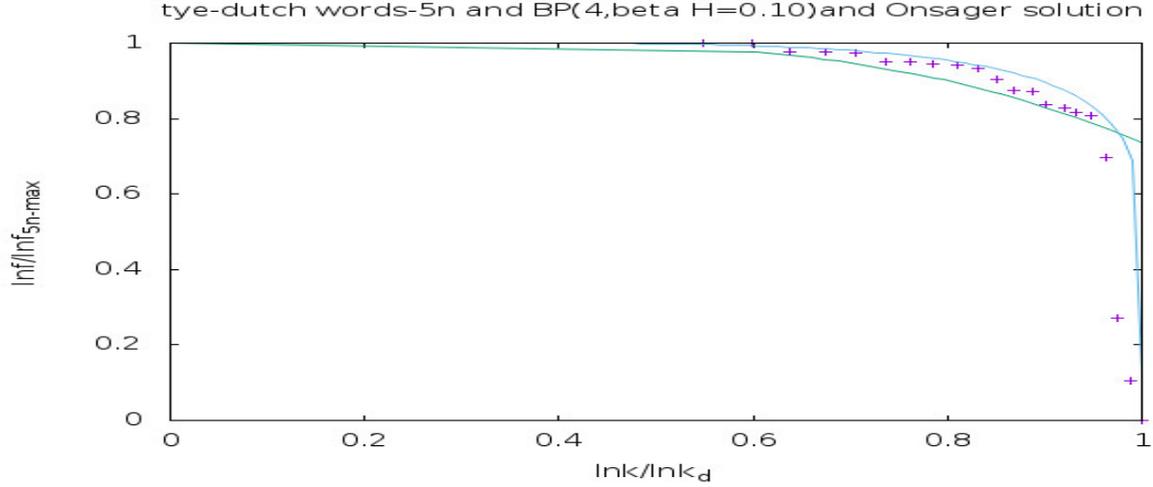

tye-dutch words-6n and BP(4,beta H=0.10)and Onsager solution

FIG. 7. Vertical axis is $\frac{lnf}{lnf_{6n-max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary with the fit curve being Bethe-Peierls curve with four nearest neighbours, in presence of little magnetic field, m=0.05 or, $\beta H = 0.10$. The uppermost curve is the Onsager solution.
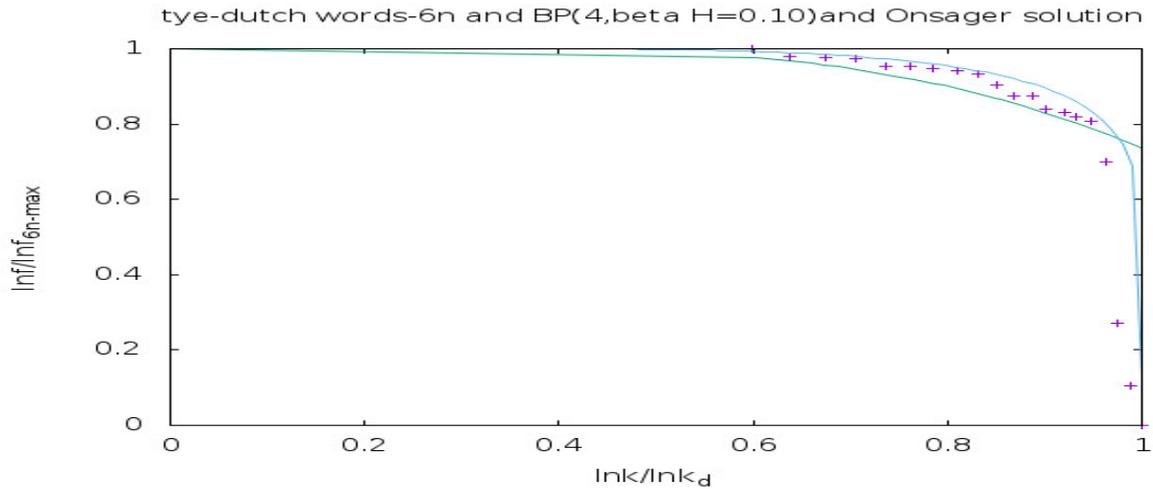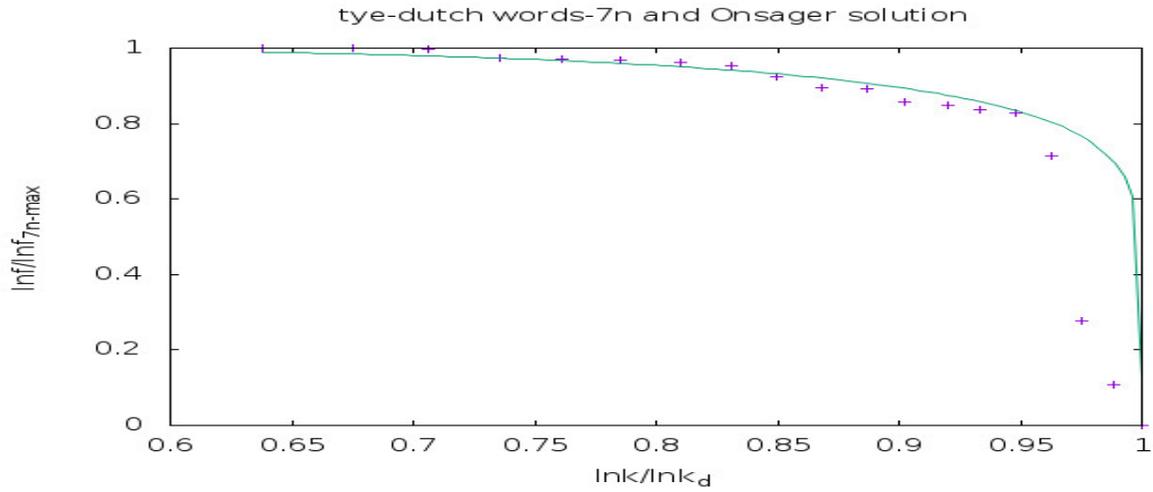
FIG. 8. Vertical axis is $\frac{lnf}{lnf_{7n-max}}$ and horizontal axis is $\frac{lnk}{lnk_{lim}}$. The + points represent the words of the Essential Dutch dictionary. The reference curve is the Onsager solution.

A. tentative conclusion

From the figures (fig.1-fig.8), we observe that there is a curve of magnetisation, behind the words of the Essential Dutch dictionary, [1]. This is the magnetisation curve, BP(4,βH=0.10), in the Bethe-Peierls approximation in the presence of little external magnetic field.

Moreover, the associated correspondence is,

$$\frac{lnf}{lnf_{4n-maximum}} \longleftrightarrow \frac{M}{M_{max}},$$

$$lnk \longleftrightarrow T.$$

k corresponds to temperature in an exponential scale, [12].

On the top of it, on successive higher normalisations, words of the Essential Dutch dictionary,[1], do not go over to Onsager solution in the normalised lnf vs $\frac{lnk}{lnk_{lim}}$ graphs.

To explore for possible existence of spin-glass transition, in presence of little external magnetic field, $\frac{lnf}{lnf_{rmax}}$, with $r = 1, 2, 3, 4$ are drawn against lnk in the figures fig.9-fig.13.

FIG. 9. The vertical axis is $\frac{lnf}{lnf_{max}}$ and the horizontal axis is lnk. The $+$ points represent the words of the Essential Dutch dictionary.
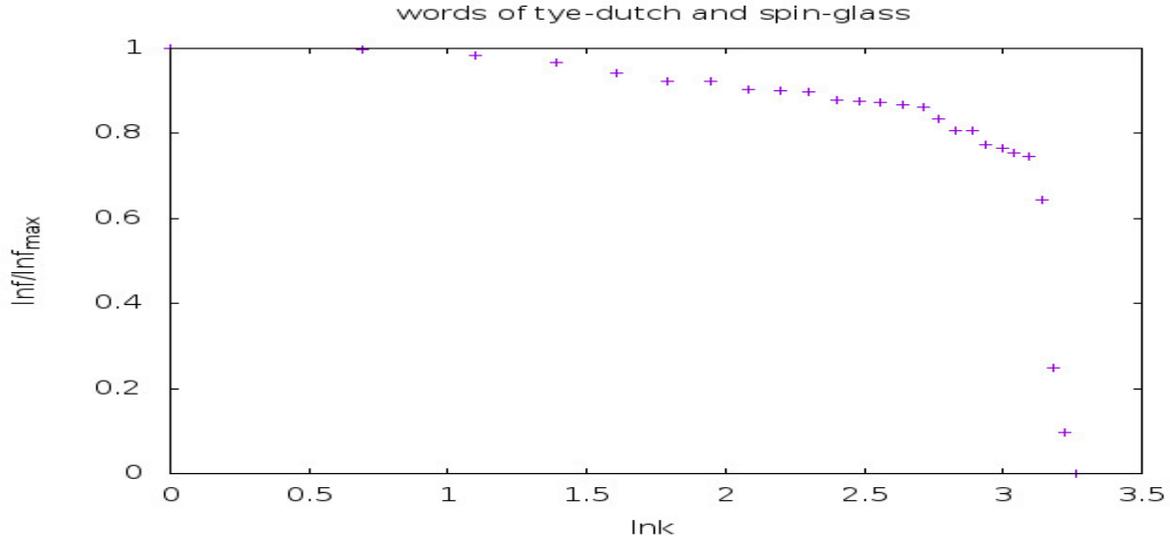

FIG. 10. The vertical axis is $\frac{lnf}{lnf_{n-max}}$ and the horizontal axis is lnk. The $+$ points represent the words of the Essential Dutch dictionary.

FIG. 11. The vertical axis is $\frac{lnf}{lnf_{2n-max}}$ and the horizontal axis is lnk. The + points represent the words of the Essential Dutch dictionary.

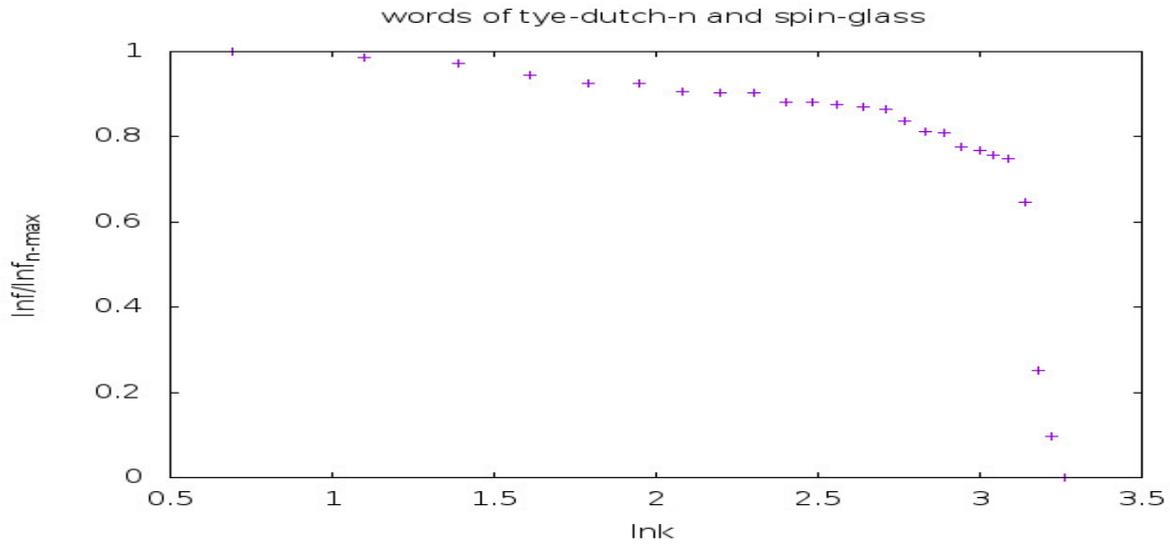FIG. 12. The vertical axis is $\frac{lnf}{lnf_{3n-max}}$ and the horizontal axis is lnk. The + points represent the words of the Essential Dutch dictionary.

FIG. 13. The vertical axis is $\frac{lnf}{lnf_{4n-max}}$ and the horizontal axis is lnk. The + points represent the words of the Essential Dutch dictionary.

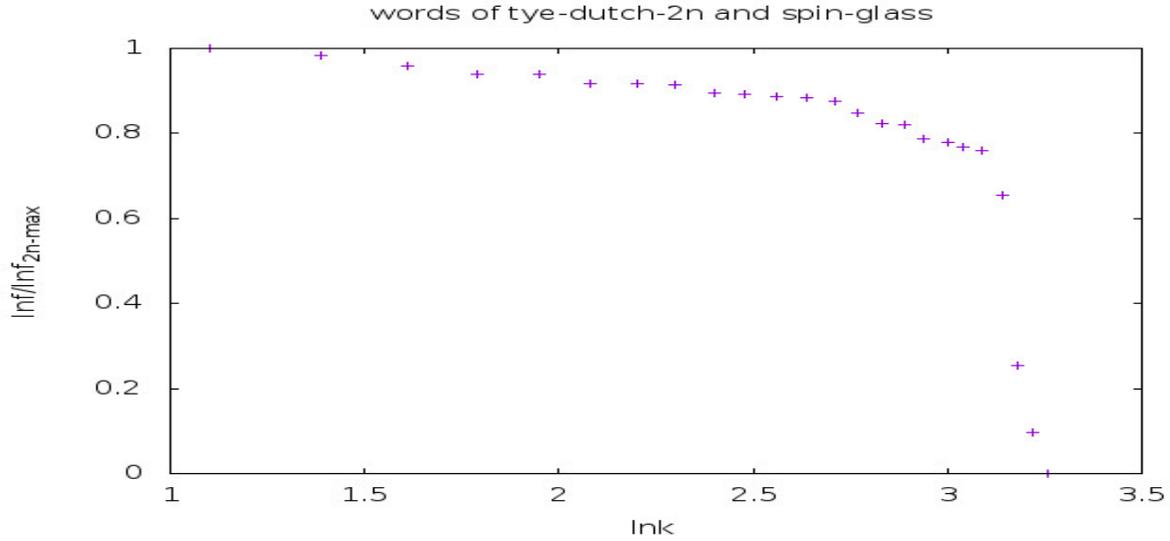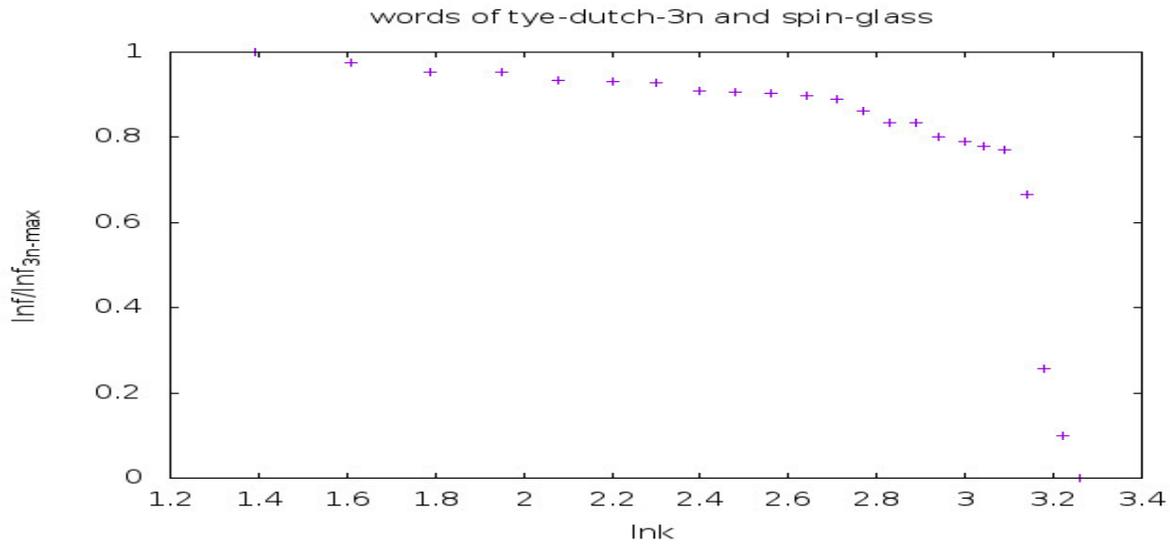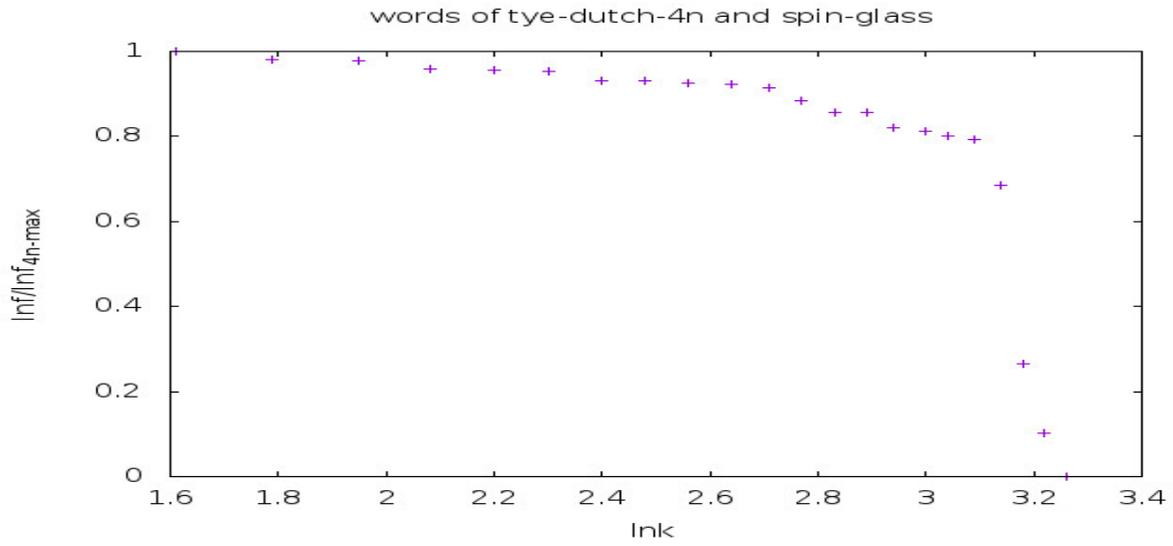### B. conclusion

In the figures Fig.9-Fig.13, the points has a clear-cut transition. Above the transition point(s), the lines are almost horizontal and below the transition point(s), points-line rises like the branch of a rectangular hyperbola. Hence, the words of the Essential Dutch dictionary, [1], is well-suited to be described by a Spin-Glass magnetisation curve, [33], in the presence of little magnetic field. Moreover, the associated correspondence is,

$$\frac{lnf}{lnf_{4n-max}} \longleftrightarrow \frac{M}{M_{max}},$$

$$lnk \longleftrightarrow T.$$

k corresponds to temperature in an exponential scale, [12].

II. ACKNOWLEDGMENT

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