SUPPORTING INFORMATION

text S1

This Supp. Info. text S1 contains some additional figures for Scandinavia.

Fig. S1 has been obtained using the complete set of $N = 160$ individual dispersal distances per generation (table S1).

Fig S2 is the same as Fig. 8 in the main paper, and has been obtained using the histogram with $N = 11$ bins (Fig. 3a in the main paper) constructed from the same set of 160 distances.

Fig S3 has been obtained using the histogram with $N = 4$ bins (Fig. 3b in the main paper), constructed from the same set of 160 distances.

It is observed that Figs. S1-S3 yield similar bounds for the cultural diffusion intensity ($C \leq 0.15$ in Fig. S1a, $C \leq 0.14$ in Fig. S2a, and $C \leq 0.13$ in Fig. S3a), as well as for the cultural effect (<20% in Fig. S1b, <19% in Fig. S2b, and <18% in Fig. S3b). A similar agreement is shown for continental Europe in the main paper (Figs. 5-7). Therefore, although the Neolithic spread rates in Scandinavia and in Europe are very different (see Fig. 4 and Sec. 4 in the main paper), the mathematical approach based on histograms yields quantitatively trustable results in both cases, even for histograms with few bins ($N = 4$).

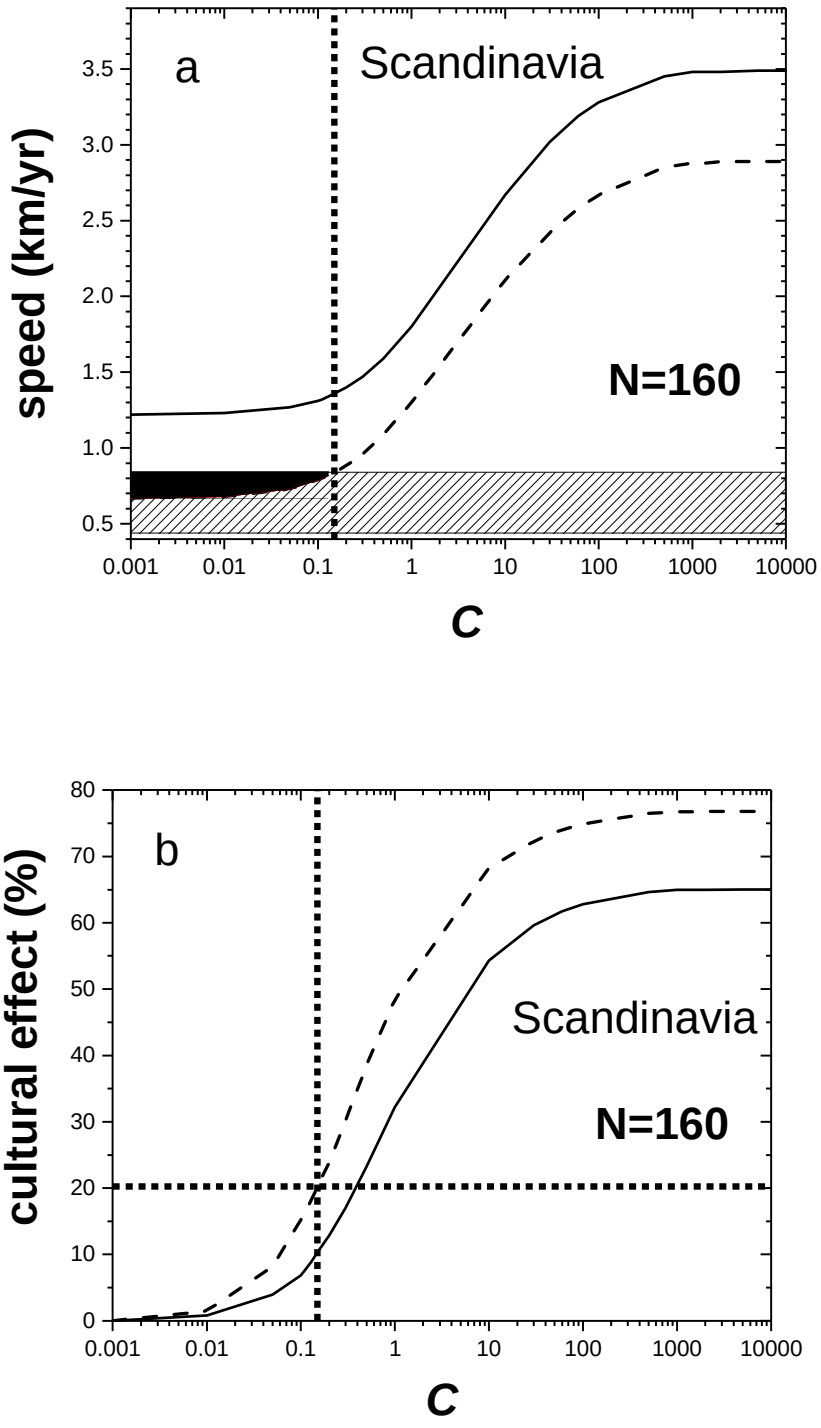


Fig. S1. (a) shows the spread rate (in km/yr) of the Neolithic wave of advance in Scandinavia, obtained from Eq. (1) in the main paper, as a function of the cultural transmission intensity C, using the complete set of $N = 160$ individual intergeneration dispersal distances for a pre-industrial population. The horizontal hatched rectangle is the spread rate implied by the archaeological data (0.44-0.84 km/yr). (b) shows the corresponding percentage of cultural diffusion, obtained from Eq. (2) in the main paper. The percentage of demic diffusion is 100% minus the cultural effect shown in this plot.

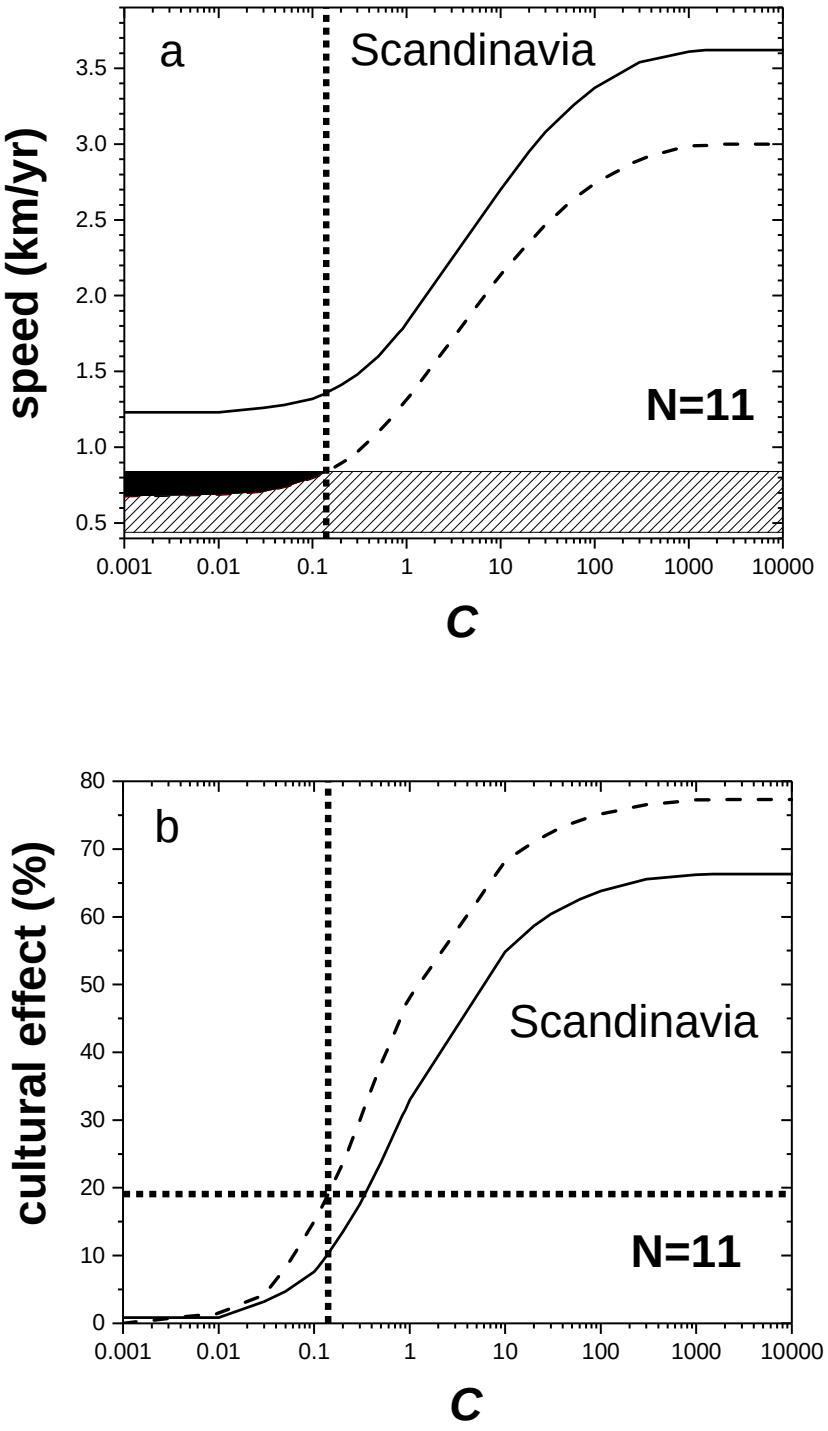
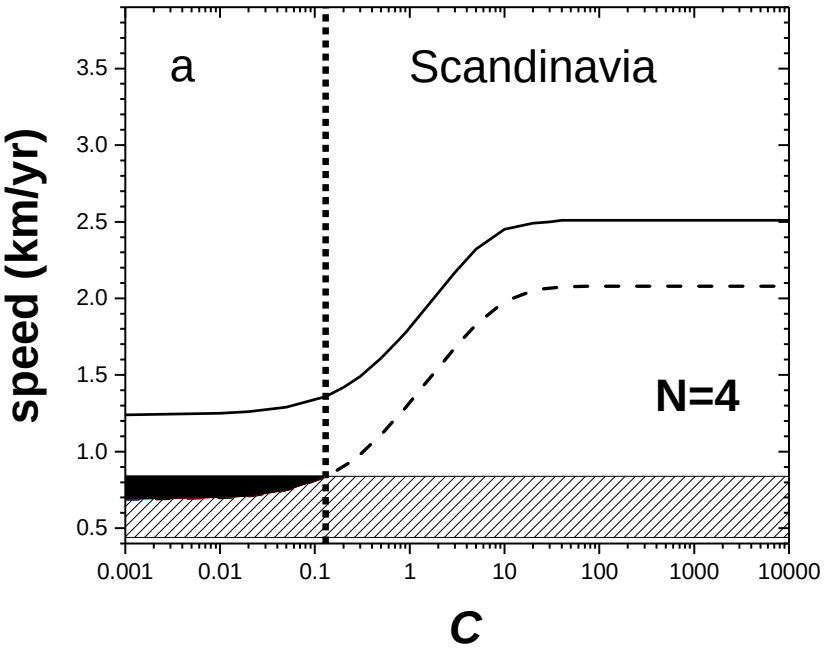


Fig. S2. This figure is the same as Fig. 8 in the main paper. (a) shows the spread rate (in km/yr) of the Neolithic wave of advance in Scandinavia, obtained from Eq. (1), as a function of the cultural transmission intensity C, using the histogram with $N = 11$ bins computed from the complete set of individual intergeneration dispersal distances for a pre-industrial population (Fig. 3a). The horizontal hatched rectangle is the spread rate implied by the archaeological data (0.44-0.84 km/yr). (b) shows the corresponding percentage of cultural diffusion, obtained from Eq. (2). The percentage of demic diffusion is 100% minus the cultural effect shown in this plot.



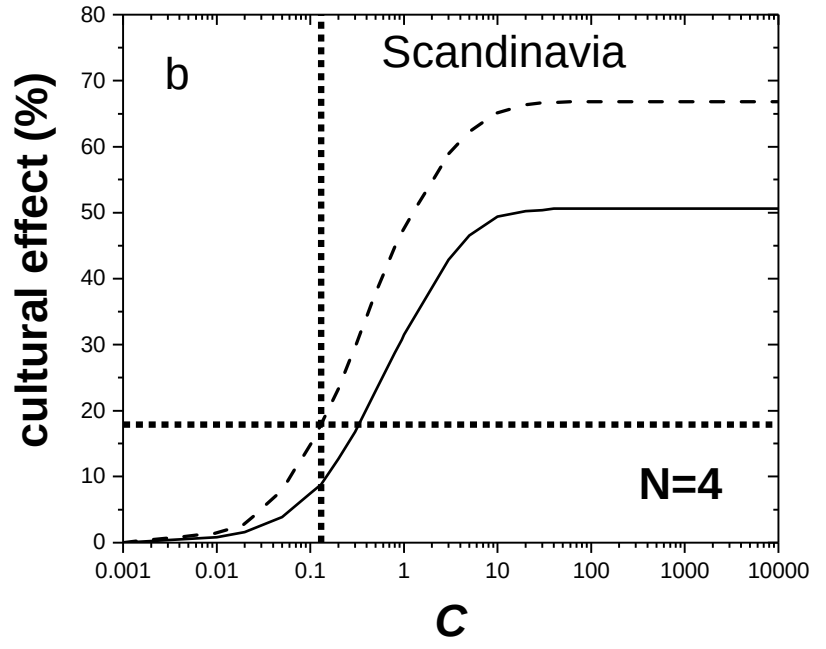


Fig. S3. (a) shows the spread rate (in km/yr) of the Neolithic wave of advance in Scandinavia, obtained from Eq. (1), as a function of the cultural transmission intensity C, using the histogram with $N = 4$ bins computed from the complete set of individual intergeneration dispersal distances for a pre-industrial population (Fig. 3b). The horizontal hatched rectangle is the spread rate implied by the archaeological data (0.44-0.84 km/yr). (b) shows the corresponding percentage of cultural diffusion, obtained from Eq. (2). The percentage of demic diffusion is 100% minus the cultural effect shown in this plot.