

The chronology of culture: a comparative assessment of European Neolithic dating approaches

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Archaeologists have long sought appropriate ways to describe the duration and floruit of archaeological cultures in statistical terms. Thus far, chronological reasoning has been largely reliant on typological sequences. Using summed probability distributions, the authors here compare radiocarbon dates for a series of European Neolithic cultures with their generally accepted 'standard' date ranges and with the greater precision afforded by dendrochronology, where those are available. The resulting analysis gives a new and more accurate description of the duration and intensity of European Neolithic cultures.

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Keywords: Neolithic, culture, chronologies, dendrochronology, radiocarbon dating, Bayesian analysis

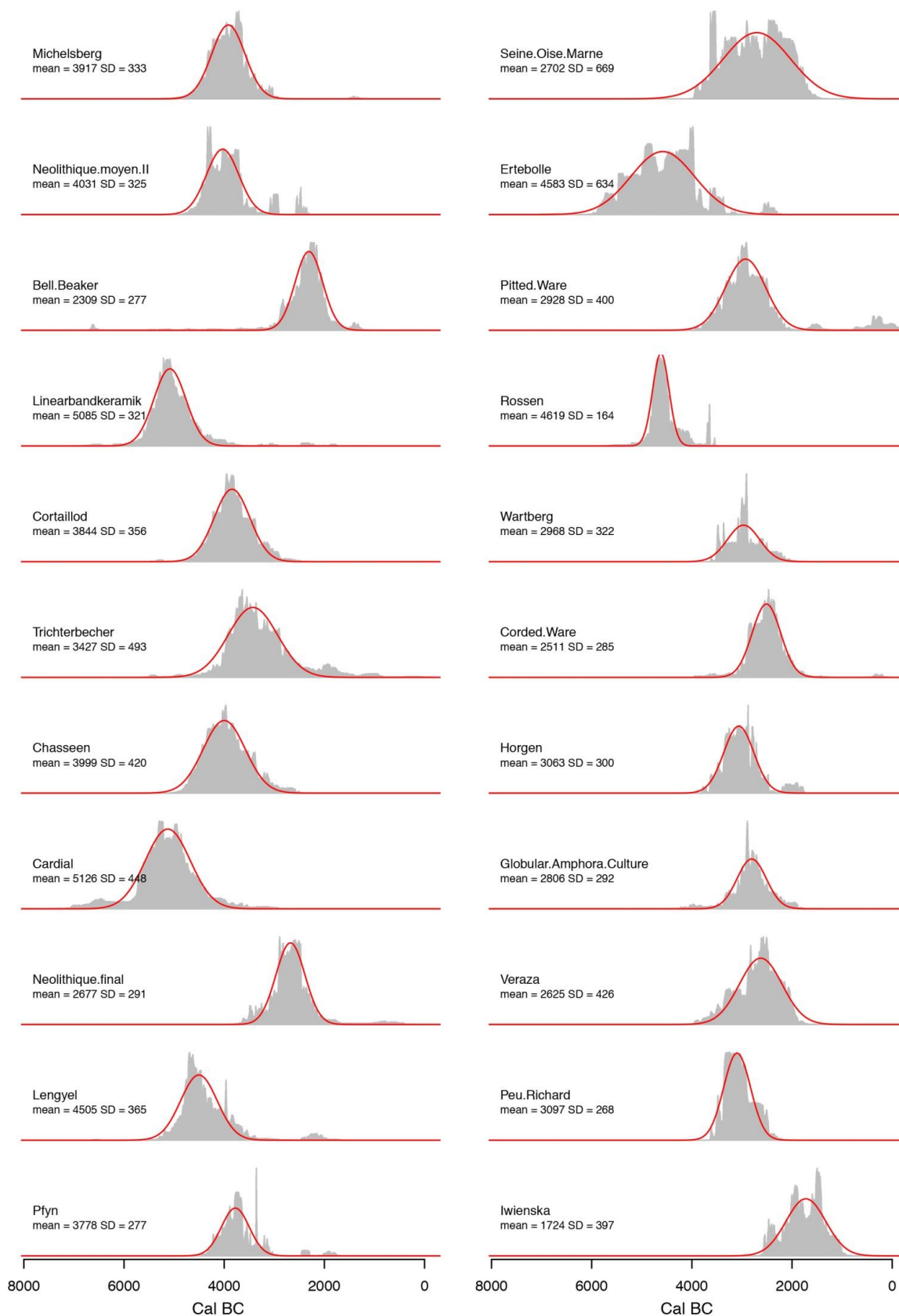


Figure S1. Summed probability distributions (SPD) for all of the 22 cultures in grey; red line shows the best fitted normal distribution.

Table S1. List of Neolithic and Early Bronze Age cultures included in this analysis with their ‘standard’ date range and bibliographic reference.

Culture	Standard (BCE)		Reference (start; end)	Culture	Standard (BCE)		Reference (start; end)
	Start	End			Start	End	
Aichbühl	4400	4150	Schier 2010	Linearbandkeramik	5500	4900	Lüning 2005
Altheim	3850	3400	Schier 2010	Luscherz	3000	2600	Strahm & Hauptmann 2009
Artenac	2900	2200	Salanova <i>et al.</i> 2011	Matignons	3650	3400	Ard 2013
Baalberge	4000	3500	Schier 2010	Michelsberg	4250	3500	Schier 2010
Baden	3500	3050	Schier 2010	Mierzanowice	2400	1600	Makarowicz 2003
Bell Beaker	2500	1800	Piguet & Besse 2009	Mondsee	3800	3200	Strahm & Hauptmann 2009
Bernburg	3100	2800	Schier 2010	Montbolo	4800	4200	Archéologie et patrimoine n.d.
Bischoheim	4400	4150	Schier 2010	Neolithique ancien rhodanien	5800	4700	Martin 2010
British EN	4000	3400	BIAB n.d.	Neolithique final	2900	2150	Salanova <i>et al.</i> 2011
British LN	3400	2300	BIAB n.d.	Neolithique Moyen Bourignon	4300	3650	Moreau 2010
Cardial	5600	4950	Van Willigen 1999	Neolithique moyen I	4500	3950	Moreau 2010
Castelnovian	6250	5500	Binder 2000	Neolithique moyen II	3950	3500	Moreau 2010
Cerny	4700	4250	Vanmontfort 2007	Obanian	6400	3000	Saville & Wickham-Jones 2012
Cham	3100	2800	Schier 2010	Orkney EN	3360	3030	Carey 2012
Chasseen	4400	3400	Van Willigen <i>et al.</i> 2009	Peu Richard	3300	2900	Ard 2013
Corded Ware	2800	2050	Schier 2010; Meyer <i>et al.</i> 2009	Pfyn	3850	3400	Schier 2010
Cortailod	4100	3400	Schier 2010	Pitted Ware	3400	2350	Larsson 2009
Courmonnien	3300	2250	Delauney 2006	Rivnac	3150	2800	Schier 2010
Deule Escaut	2900	2550	Salanova <i>et al.</i> 2011	Roessen	4750	4400	Lüning 1996; Schier 2010
Egolzwil	4400	4200	Doppler 2007	Saint Leonard	3800	3600	Piguet 2011
Ertebölle	5450	4100	Hartz & Lubke 2006	Salzmunde	3500	3100	Schier 2010
Ferrières	3450	2800	Lemercier 2010	Saone Rhone	3400	2400	Pétrequin <i>et al.</i> 1988
Fontbousse	2800	2300	Lemercier 2010	Schussenried	4200	3700	Moreau 2010
Gatersleben	4400	4000	Lüning 1996	Seine-Oise-Marne	3500	2700	Schier 2010
Globular Amphora	3100	2700	Schier 2010	St Pons	3500	3000	Lemercier 2010
Goldberg III	3100	2700	Schier 2010	Stichbandkeramik	4900	4100	Strahm & Hauptmann 2009
Grooved Ware	3250	2500	Sheridan & Brophy 2012	Swifterbant	5000	3400	Raemaekers 2003
Grossgartach	5050	4950	van Gijn & Louwe Kooijmans 2005	Treilles	3400	2100	Lemercier 2010
Hazendonk	3800	3400	Raemaekers 2003	Trichterbecher	4100	3000	Schier 2010
Hinkelstein	5000	4900	Strahm & Hauptmann 2009	Unetice	2200	1550	Brandt <i>et al.</i> 2013
Horgen	3500	2750	Hafner & Suter 2003	Veraza	3400	2850	Strahm 1994
Hutberg	3625	3525	Müller 2009	Villeneuve Saint Germain	5100	4700	Pailler <i>et al.</i> 2008
Irish EN	4000	3600	Whitehouse <i>et al.</i> 2013	Vlaardingingen	3300	2650	van Gijn & Louwe Kooijmans 2005
Iwienska	2600	1800	Makarowicz 2003	Walternienburg	3350	3100	Przybyl 2013
Jordansmühl	4000	3600	Lüning 1996	Wartberg	3500	2800	Schier 2010
Lengyel	4800	4000	Strahm & Hauptmann 2009				

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