



Benthic foraminifera in their role as geochemical archives: ground thruthing of palaeo-redox proxies

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Foraminiferal research contributing to the elucidation of past climate variability has become more and more combined with geochemical approaches. It is of utmost importance to understand the (palaeo)ecological context of the taxa and species studied before the geochemical data from the foraminiferal test can be correctly interpreted. Moreover, biomineralisation models for foraminifera predict species specific elemental incorporation into the calcite lattice which is confirmed by experimental studies in the laboratory. Therefore, the development of new geochemical proxies based on foraminiferal tests necessitates the use of numerous methodological approaches with contrasting resolution and sensitivity. In this study, we want to explore the application of Mn/Ca and V/Ca as palaeo-redox proxies using traditional wet-chemical methods (ICP-AES and ICP-MS) as well as Laser Ablation ICP-MS and Secondary Ion Mass Spectrometry (SIMS). In this way, we intend to interpret variability related to environmental as well as intrinsic factors (e.g., vital effects). Therefore, we use benthic foraminifera from contrasting study areas and within each sample we study species from different microhabitats. Preliminary results of uncleaned specimens of *Uvigerina* spp. from IODP site U1385A, SW Iberian Margin, analysed by SIMS show that Mn/Ca and V/Ca could be associated with comparable intra-shell differences. For the use as palaeo-redox proxies the origins of this variability have to be assessed in more detail. Then, it could be possible that benthic foraminifera play a more and more dominant role as proxy carriers for geochemical signatures from low oxygen environments.