Holocene records from the southeastern Bay of Biscay: global vs regional signals

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Study area: Southeastern part of the Bay of Biscay (SE BoB)

- Temperate marginal oceanic area
- Wide range of contrasting hydrological conditions
- Under continental influence, the site is likely to record amplified climatic variations compared to the deep-sea

Regional signature

- Continuous dominance of *N. incompta* and *G. bulloides* ➔ continuous presence of rather productive spring conditions.
- Decrease of *G. inflata* ➔ stronger water column stratification during summer.
- *G. ruber* (nearly absent from the modern fauna of the BoB) contributes with up to 15% to the fossil assemblages at some periods. Whenever NAO is minimal, the IPC penetrates the BoB, and G. ruber is expatriated from southern populations to the BoB.
- Highest proportions of *O. universa* ➔ maximum SSTs due to orbital forcing.

The local paleoenvironmental signals recorded by fossil faunas can be interpreted in terms of global (orbital forcings and regional (NAO), seasonality) climatic forcing.

*G. ruber* is used as an indicator of episodic incursions of the warm and salty Navidad Current onto the SE BoB. Because the formation of this current is closely linked to the NAO, we might also record long-term intervals of negative NAO indices.

Sedimentary records from two distant sites give for the first time, a fairly comprehensive spatial overview of the functioning of the BoB during the Holocene.

MAJOR POINTS:

- The regional imprint is especially seen in surface waters since sedimentary environments and physiographic contexts are different for both cores.
- The lack in recording some events at station WH is due to the lower sedimentation rate and to time constraint by ¹⁴C dating.

**Station B (550 m)**

**Planktic foraminifera (Station B)**

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**Regional signature (common features between Stations B and WH)**

- The regional imprint is especially seen in surface waters since sedimentary environments and physiographic contexts are different for both cores.
- The lack in recording some events at station WH is due to the lower sedimentation rate and to time constraint by ¹⁴C dating.

**Benthic foraminifera (Station B)**

- Very eutrophic species (e.g. *C. carinata, B. marginata*) decrease in proportions, and are gradually replaced by eutrophic species (e.g. *U. mediterranea*) and mesotrophic species (e.g. *C. pachyderma*).