

## Letter to the Editor/Erratum

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The article Monchot *et al.* (2013), used data that had not been made available for this paper and the owners of the data did not know about the use. The data in question underpinned Wiig *et al.* (2007) but were not enumerated in that

paper. At his request, these data were shared with Monchot on the condition that if the data were used in a publication, all data owners (Gjertz, Lydersen, Stewart & Wiig) would be included as co-authors. Such a manuscript Monchot H.,

Ready E., Wiig Ø., Stewart R. E. A., Gjertz I. & Lydersen C. Sex identification of walrus mandibles: Implications for understanding walrus biology and archaeology in the eastern Canadian Arctic, was eventually submitted to the journal *Arctic* 4 February 2013, after the *Anthropozoologica* paper had been accepted. The paper in *Arctic* required revisions but those revisions lapsed and the paper was rejected. A new version was submitted 29 June 2015, but was rejected 4 November 2015.

Figure 4 in the *Anthropozoologica* paper is a copy of Figure 3 in the *Arctic* submission. The text in the *Anthropozoologica* paper referencing this material is found on pages 21 and 22:

“Fig. 4. — Diagram of the maximum length (mm) and the maximum height (mm) and mixture analysis curve of the maximum length of the Tayara and Foxe Basin walrus mandibles (reference collection: Stewart, personal data in Wiig *et al.* 2007). (Mixture analysis, Cutoff point = 235.277 after Monchot & L  chelle 2002).” and “The most reliable and successful measurements for separating size groups in walrus focus on the mandible (Wiig *et al.* 2007; Monchot *et al.*, submitted). Thus, using the walrus individuals from Foxe Basin as a reference population (Wiig *et al.* 2007), we can plot in a bivariate diagram 5 of the 7 mandibles from Tayara (Fig. 4). The results show clearly the presence of 3 males and 2 females.” [emphasis added]. The “Monchot *et al.* (submitted)” citation refers to the manuscript that was submitted to *Arctic* and later rejected.

The journal *Anthropozoologica* bears some responsibility for allowing a citation to a manuscript that was not at least *in press*. We leave that to the journal editor to address. Because our data were published pre-emptively to the now suspended *Arctic* paper, readers are unable to determine the provenance and treatment of these data. Reviewers for *Arctic* voiced concerns about the ability to differentiate males from females without age data by which juveniles could be identified and it would have been better to have those issues resolved before citing the results.

This information that was in the draft *Arctic* manuscript is summarized here. The reference material from Wiig *et al.* (2007) comprised two samples. The first included mandibles of 33 female and 49 male walrus collected in Foxe Basin, Nunavut, Canada for other research (e.g., Fisher & Stewart 1997; Garlich-Miller & Stewart 1998, 1999). The mandibles were selected from a larger sample to represent an age range from 0 to 25-30 years in both sexes based on counts of annual growth layer groups (GLGs) in the lower canine (Garlich-Miller *et al.* 1993). By age five years there was no overlap between males and females of similar ages in the variables used (Wiig *et al.* 2007: 71).

The second reference sample was composed of 591 mandibles recovered from terrestrial haul-outs in the Tusen  yane area of southeastern Svalbard, residual from animals harvested mainly during the nineteenth century. The ages of these Svalbard walrus were between five and 30 years based on GLG counts of post-canine teeth present in 83 of the mandibles. The sex ratio in this sample was previously estimated using a discriminant analysis method (Wiig *et al.* 2007).

Monchot *et al.* (2013) used these measurement-at-age data in a mixture analysis described by Monchot & L  chelle (2002) (More details on the mathematical model and on various applications of mixture analysis are available in Aitkin & Tunnicliffe Wilson (1980), Everitt (1984), Flury *et al.* (1992), Airolidi *et al.* (1995), Dong (1997), Monchot (1999), Monchot & L  chelle (2002), Quil  s & Monchot (2004), Monchot *et al.* (2005), Fernandez & Monchot (2007), Helmer (2008), and Monchot & Gendron (2010).) The results of this analysis of the Wiig *et al.* data are presented in Fig. 4 of Monchot *et al.* (2013) with comparable data for the *Tayara* mandibles (age unknown) added.

We appreciate the editor of *Anthropozoologica* offering this opportunity to provide readers with the necessary details beyond Fig. 4 in Monchot *et al.* (2013) and proper credit for the sources of those data.

## REFERENCES

- AIROLDI J. P., FLURY B. D. & SALVIONO M. 1995. — Discrimination between two species of *Microtus* using both classified and unclassified observations. *Journal of Theoretical Biology* 17: 247-262.
- AITKIN M. & TUNNICLIFFE WILSON G. 1980. — Mixture models, outliers, and the EM algorithm. *Technometrics* 22: 325-331.
- DONG Z. 1997. — Mixture analysis and its preliminary application in archaeology. *Journal of Archaeological Science* 24: 141-161.
- EVERITT B. S. 1984. — Maximum likelihood estimation of the parameters in a mixture of two univariate normal distributions; a comparison of different algorithms. *The Statistician* 33: 205-215.
- FERNANDEZ H. & MONCHOT H. 2007. — Sexual dimorphism in the ibex (*Capra ibex* L.), application to a fossil population. *International Journal of Osteoarchaeology* 17: 479-491.
- FISHER K. I. & STEWART R. E. A. 1997. — Summer foods of Atlantic walrus *Odobenus rosmarus rosmarus* in Foxe Basin, Northwest Territories. *Canadian Journal of Zoology* 75: 1166-1175.
- FLURY B. D., AIROLDI J. P. & BIBER J. P. 1992. — Gender identification of water pipits (*Anthus spinoletta*) using mixtures of distributions. *Journal of Theoretical Biology* 158: 465-480.
- GARLICH-MILLER J. L. & STEWART R. E. A. 1998. — Growth and sexual dimorphism of Atlantic walruses (*Odobenus rosmarus rosmarus*) in Foxe Basin, Northwest Territories, Canada. *Marine Mammal Science* 14: 803-818.
- GARLICH-MILLER J. L. & STEWART R. E. A. 1999. — Female reproductive patterns and fetal growth of Atlantic walrus (*Odobenus rosmarus rosmarus*) in Foxe Basin, Northwest Territories, Canada. *Marine Mammal Science* 15: 179-191.
- GARLICH-MILLER J. L., STEWART R. E. A., STEWART B. E. & HILTZ E. A. 1993. — Comparison of mandibular with cemental growth-layer counts for ageing Atlantic walrus (*Odobenus rosmarus rosmarus*). *Canadian Journal of Zoology* 71: 163-167.
- HELMER D. 2008. — R  vision de la faune de Cafer H  yük: apports des m  thodes de l’analyse des m  langes et de l’analyse de Kernel    la mise en   vidence de la domestication, in VILA E., GOURICHON L., CHOYKE A. M. & BUITENHUIS H. (eds), *Archaeozoology of the Near East VIII*. TMO 49: 169-195.
- MONCHOT H. 1999. — Mixture analysis and mammalian sex-ratio among Middle Pleistocene mouflon of Arago cave (France). *Quaternary Research* 52: 259-268.
- MONCHOT H. & L  CHELLE J. 2002. — Statistical non parametric methods for the study of fossil populations. *Paleobiology* 28: 55-69.
- MONCHOT H., HOUMARD C., DIONNE M.-M., DESROSIER P. M. & GENDRON D. 2013. — The modus operandi of walrus exploitation during the palaeoeskimo period at the Tayara site,

- arctic Canada. *Anthropozoologica* 48 (1): 15-36. <http://dx.doi.org/10.5252/az2013n1a1>
- MONCHOT H. & GENDRON D. 2010. — Disentangling long bones of foxes (*Vulpes vulpes*) and (*Alopex lagopus*) from arctic archaeological sites. *Journal of Archaeological Science* 37: 799-806. <http://dx.doi.org/10.1016/j.jas.2009.11.009>
- MONCHOT H., MASHKOUR M. & VIGNE J.-D. 2005. — Kernel smoothing and mixture analysis for the determination of the sex ratios at death, at the beginning of the domestication of ungulates, in VIGNE J.-D., PETERS J. & HELMER D. (eds), *The First Steps of Animal Domestication. 9th ICAZ Conference, Durham 2002*. Oxbow Books, Oxford: 55-60.
- QUILÈS J. & MONCHOT H. 2004. — Sex ratio et analyse des mélanges d'*Ursus spelaeus* (Carnivora, Ursidae) du gisement pléistocène supérieur de Fate (Ligurie, Italie). Implications paléobiologiques. *Annales de Paléontologie* 90: 115-133.
- WIIG Ø., BORN E. W., GJERTZ I., LYDERSEN C. & STEWART R. E. A. 2007. — Historical sex-specific distribution of Atlantic walrus (*Odobenus rosmarus rosmarus*) in Svalbard assessed by mandible measurement. *Polar Biology* 31: 69-75.

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