



A book regarding Kromdraai: Comments on Herries (2018)

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The book¹ entitled *Kromdraai: A birthplace of Paranthropus in the Cradle of Humankind, a South African heritage site*, which we co-edited, was published by SUN PReSS (AFRICAN SUN MeDIA) after peer review. The book relates to the Kromdraai Research Project (KRP), which is an enterprising and exciting scientific venture aimed at promoting palaeontological science and transfer of knowledge in the Cradle of Humankind, declared as a World Heritage Site by UNESCO in 1999. The KRP is supported inter alia by the National Research Foundation (South Africa); the Department of Science and Technology (South Africa); the Education, Audiovisual and Culture Executive Agency (EACEA) of the European Union; the Centre National de la Recherche Scientifique (CNRS, France); the Institut des Déserts et des Steppes (France); the French Ministry of Foreign Affairs; and the French Embassy in Pretoria.

New results are presented in the book by an international team (French, South African, Italian and German) to report on the latest developments of research and fieldwork at Kromdraai, a hominin cave complex which has yielded remarkable Plio-Pleistocene fossils attributed to *Paranthropus* and early *Homo*, constituting distant relatives of all humankind. An important outcome presented throughout the book is that the Kromdraai hominins and the associated fauna do not represent one single temporal period. As yet, the chronological interpretations of the Kromdraai hominin-bearing deposits have been essentially based on the unsubstantiated combination of three sets of assemblages successively collected by Robert Broom, Bob Brain and Elisabeth Vrba into Partridge's Member 3.² The new discoveries presented in our book are in strong opposition to these previous assumptions, as illustrated by the chronological interpretations made inter alia by Andy Herries and his colleagues.³

Herries has recently published a book review⁴ of our new volume¹. As detailed in our book, the vast majority of the fossil sample (including hominins) collected at Kromdraai before 2002 could not be tied precisely to any breccia members identified by Partridge². Until 2002, most of the Kromdraai hominin samples were unprovenanced, including the type specimen of *Paranthropus robustus* (TM 1517), discovered and described by Robert Broom in 1938. However, remarkable hominin and faunal samples have been discovered by our team, and are provenanced in the context of three distinct depositional phases now securely tied in a very detailed stratigraphic succession, in which the distinction between KA and KB localities is no longer justified (Chapter 3). In the new book on Kromdraai, reference is made to Member 2, previously considered as essentially sterile. This is far from reality. With some 2200 newly discovered fossils presented in Chapter 5, Member 2 represents the (as yet) oldest faunal assemblage from Kromdraai where more than 22 hominins have recently been found.^{1,5}

All the data presented in the new volume on Kromdraai have better stratigraphic control and provide a more coherent (temporally controlled) assemblage for analysis. Contrary to Herries' statements⁴, the Member system used in the book is not incompatible with the reappraisal of our proposed detailed stratigraphy (Chapter 3). Indeed, some members that Partridge² differentiated can be associated throughout the whole site (between Kromdraai East, Kromdraai West and even Kromdraai A).

Unfortunately, Herries does not comment on the main scientific issue raised (see above) in our book. Instead, he comments on specific issues in his review of the recent book.⁴ Some of them are discussed below.

Regarding the study of fauna from Member 2 (Chapter 5), Herries incorrectly states that it is 'rather devoid of actual data...no actual data are presented...no primary descriptions or metrics...A species list with no primary descriptions and evidence of what the fossils were compared to, is like stating the answer is 42, without any maths'. In response, attention can be drawn to the following. For birds, Table 5.1 presents metric data and descriptions. For primates, Fig. 5.2 summarises an extensive metric study associated with 'evidence of what the fossils were compared to', and metric data are also presented in Tables 5.2 – 5.4. For bovids, Table 5.5 presents NISP metrics (number of identified specimens) in a faunal list. The section is brief and preliminary on account of the fragmentary nature of the material, most of which can be identified only in terms of size groups (medium sized alcelaphines and large to medium sized Bovidae) such that (at this stage of KRP) it is simply not possible to identify most of the specimens to the level of species. Nevertheless, taken together, the ungulate samples from the Kromdraai Extension Site reflect semi-arid grassland, which is a relevant and important palaeoenvironmental assessment even though the bovid samples are so fragmentary. For carnivores, descriptions are given in the text, and Table 5.6 refers to an important 'composite faunal list' which serves to summarise data from a set of excavations undertaken by Brain, Vrba, Thackeray and Braga. Metrics for the carnivores are given in the text and in Tables 5.7 and 5.8.

Herries states that 'One of the *truly fundamental outcomes* of this book' (emphasis added) is 'that we will likely never know the exact provenience, and thus age, of the type specimen of *Paranthropus robustus* [TM 1517]'. This flies in the face of cited research⁶, giving exciting results of chemical analyses identifying titanium, manganese, rubidium and zinc in relation to Si and Ca, in samples K1 and K2 which were associated directly with hominin specimen TM 1517, and which were compared with other (provenanced) samples at Kromdraai, with important results. Ongoing geochemical analyses will help to refine these extremely important results.

Herries criticises the use of a 'pay-to-publish publisher', in this case SUN PReSS (AFRICAN SUN MeDIA). The words 'format' or 'formatting' are used seven times in the review. For example, he says that the book is 'an edited volume of scientific articles packaged in an odd rectangular, coffee-table format'. What is wrong with a book being rectangular? Books have been rectangular for centuries. And what is the definition of being a coffee-table book? Herries states: 'It does make you wonder why the authors chose this format of publishing for research.' SUN PReSS was selected at the recommendation of the editor of the *South African Journal of Science*, and was

chosen because it provided an appealing way of publishing extensive peer-reviewed results in colour and *in detail* (emphasis added).

Herries states that 'many readers will not come away trusting the information presented'. Essentially he is saying that many readers will distrust the content of the book. This derogatory statement is particularly disturbing. Contrary to Herries' statements, Professor Bob Brain (in his Foreword of our volume) praises the 'great detail' in which research at Kromdraai is being conducted.

Herries mentions 'grammatical and spelling errors throughout' the book. One may teach lessons but 'never throw a stone and hide his hand'. Herries should thoroughly proofread his own papers and correct his incorrect spelling of Kromdraai (not 'Kromndraai', p. 22)³.

To conclude, the Kromdraai book continues to be accessible through the reputable publisher, SUN PRess, and a revised edition is planned in an electronic form to make the detailed studies accessible worldwide. Moreover, the KRP has already and will soon continue to supplement the results presented in the book.⁷ In the near future, attention will be focused on sedimentology, taphonomy, chronology (both relative and absolute), faunal and hominin palaeobiology, taxonomy and phylogeny.

We hope that readers will decide for themselves whether the review by Herries⁴ is an accurate reflection of the KRP which is truly exciting in terms of new discoveries of hominin and other fossils, within a controlled stratigraphic context.

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References

1. Braga J, Thackeray JF, editors. Kromdraai: A birthplace of *Paranthropus* in the Cradle of Humankind, a South African heritage site. Stellenbosch: SUN MeDIA; 2016.
2. Partridge TC. Some preliminary observations on the stratigraphy and sedimentology of the Kromdraai B hominid site. *Palaeoecol Afr Surround Isl.* 1982;15:3e12.
3. Herries AIR. A multi-disciplinary seriation of early *Homo* and *Paranthropus* bearing palaeocaves in southern Africa. *Quat Int.* 2009;202:14–28. <https://doi.org/10.1016/j.quaint.2008.05.017>
4. Herries AIR. Kromdraai evolved, but poorly packaged. *S Afr J Sci.* 2018;114(1/2), Art. #a0241, 2 pages. <https://doi.org/10.17159/sajs.2018/a0241>
5. Braga J, Thackeray JF, Bruxelles L, Dumoncel J, Fourvel J-B. Stretching the time span of hominin evolution at Kromdraai (Gauteng, South Africa): Recent discoveries. *CR Palevol.* 2016;16:58–70. <https://doi.org/10.1016/j.crpv.2016.03.003>
6. Thackeray JF, McBride VA, Segonyane SP, Franklyn CB. Trace element analysis of breccias associated with the type specimen of *Australopithecus (Paranthropus) robustus* from Kromdraai. *Ann Transv Mus.* 2003;40:147–150.
7. Fouvel J-B. *Civettictis braini* nov. sp. (Mammalia: Carnivora), a new viverrid from the hominin-bearing site of Kromdraai (Gauteng, South Africa). *CR Palevol.* In press 2018. <https://doi.org/10.1016/j.crpv.2017.11.005>.

