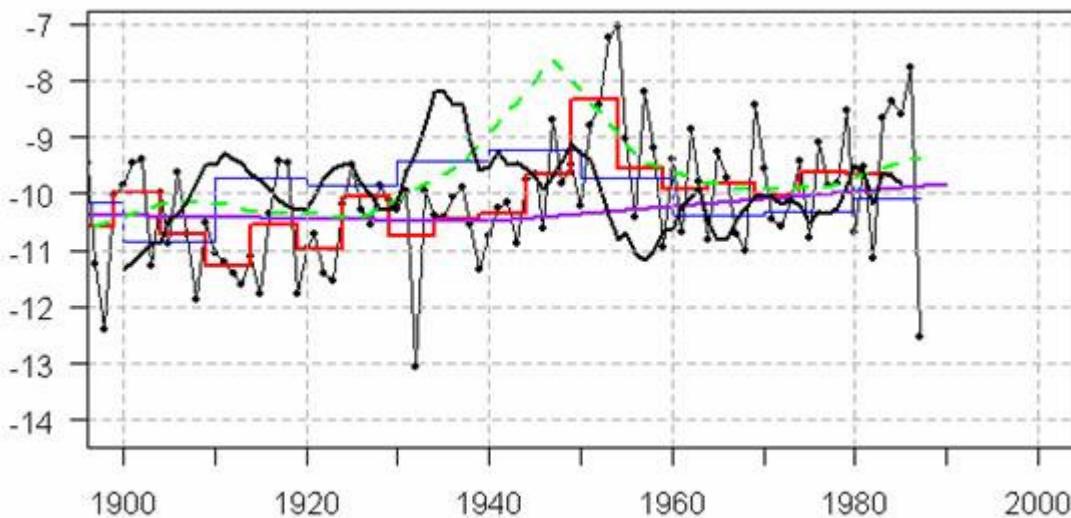


Thompson Correspondence

Introduction

The following correspondence primarily concerns data for Thompson's prominent Dunde, Guliya and Dasuopu ice cores. In addition to writing Thompson, I've also corresponded (mostly without success) with editors of Climatic Change, Science and PNAS, all of whom published articles by Thompson. There are two distinct issues:

- When I started, Thompson had archived nothing in connection with Dunde, Guliya and Dasuopu. As a result of my complaint to Climatic Change, he provided a very small archive of decadal O₁₈ data from 1000 on. This is only a fraction of the data produced in connection with these cores (some of which include much earlier data.) In the past few months (from July 2012), Thompson has added to these very small archives but they remain very incomplete.
- Thompson has also provided "grey" versions to various authors who cite the same print publication. Unfortunately, some grey versions are inconsistent with other grey versions, resulting in a spaghetti graph of Thompson versions, as illustrated for Dunde below.



Dunde Versions. Heavy black – Yao et al 2006 (3 year rolling average); thin black - MBH98 (annual); red - PNAS 2006 (5-year averages); blue - Clim Chg 2003 (10-year averages); purple - Yang et al 2002 (values in 50 -year intervals); green - Crowley and Lowery 2000 (original in standardized format, re-fitted here for display by regression fit to MBH98).

In the correspondence below, I first wrote to Mosley-Thompson in late 2003 (shortly before the MM2003 publication) without any success. In 2004, as a reviewer for Climatic Change, I persuaded them to adopt a data policy. (Prior to my review, in the 28 years that Schneider had edited the journal, apparently no reviewers had ever asked for supporting data and my request

had therefore required the editorial board to adopt a new policy.) This request led to the archiving of 10-year average O₁₈ data for the three cores from 1000 on, but nothing else. In late 2004, I sent several emails to Thompson, none of which were acknowledged.

In 2005 and 2006, I corresponded with editors of *Science*, seeking sample data for Dunde, Guliya and Dasuopo. In fall 2005, *Science* forwarded O₁₈ data for Kilimanjaro, but did not provide the data for the cores that I had requested. (I was also then seeking Esper data; *Science* was then backfilling from the Hwang scandal and was temporarily relatively responsive and ultimately required Esper to provide measurement data.) I continued to seek a comprehensive archive for Dunde, Guliya and Dasuopo from *Science* through June 2006, but they got nowhere with Thompson and eventually they stopped acknowledging my reminders.

In 2007, I asked PNAS to require Thompson to provide a comprehensive archive. This was relatively soon after the NAS panel and House Energy and Commerce Committee hearings in 2006, where I had met Ralph Cicerone, President of NAS. Both PNAS and Cicerone were unresponsive and these efforts also amounted to nothing. I wrote again to Lonnie Thompson at Cicerone's suggestion, copying various parties and got no response.

My pst files for 2008-9 are unfortunately garbled. However, I recall a brief exchange with Ellen Mosley-Thompson, which, as I recall, resulted in her sending me a small Antarctic dataset.

During the past few months, Thompson has supplemented the NOAA archives for Dunde, Guliya and Dasuopo. However, instead of these archives representing Thompson's legacy to the scientific community (as they should), they remain woefully inadequate. Ellen Mosley-Thompson, has led numerous ice core expeditions to Greenland and Antarctica, and, to my knowledge, has archived nothing from these expeditions either at NOAA or elsewhere.

Stephen McIntyre
July 5, 2012

Correspondence

Oct 19, 2003 McIntyre to Mosley-Thompson

I noticed that you have not contributed data from Dunde, Guliya or Dasuopo ice cores to the World Data Center for Paleoclimatology or your 10-year series on Huascaran and Sajama. I presume that this is an oversight. If so, I think that these would be worthwhile contributions and that it is important to support the digital archiving program of WDCP.

Yours truly,
Stephen McIntyre

Oct 19, 2003 Mosley-Thompson to McIntyre

I have forwarded your comment to Lonnie Thompson as these are his data sets. Indeed our philosophy in the past few years has been to release all the data that are published in a peer-

reviewed journal. Witness that all the data from the Kilimanjaro cores that were presented in Science are in the data center. Some of the older cores do need to have the data deposited and we appreciate you bringing that to our attention. As time and resources allow us to pull those together, we will deposit them.

Thank you,

Ellen Mosley-Thompson

cc: Lonnie Thompson

Oct 19 2003 McIntyre to Mosley-Thompson

Thanks for your reply. I realize that time and resources are always limited. However some of these older datasets are being currently used in multi-proxy compilations such as Bradley, Hughes and Diaz and it would be worthwhile to ensure that the information already being digitally distributed is also at WDCP.

Pending the eventual archiving at WDCP, I would appreciate a digital version of the Guliya, Dasuopu and Dunde O18 datasets and of the 10-year versions for Huascaran and Sajama.

Thanks for your attention.

Steve McIntyre

Oct 19, 2003 Mosley-Thompson to McIntyre

Stephen - two things

- 1) I see that you have copied Lonnie Thompson and that is good as these are his data sets.
- 2) I see no affiliation for you - where are you located? You did not provide a signature and yahoo of course gives no information about the sender.

Ellen Mosley-Thompson

March 19, 2004 McIntyre to Schneider

... On another topic, I am looking for digital versions of the Dunde, Guliya and Dasuopu data reported in Thompson et al. (2003), Climatic Change 59, which I have been unable to locate at the World Data Center for Paleoclimatology or elsewhere and was unsuccessful in requesting the data from the authors. In keeping with the following policy:

However, the Climatic Change editorial board is firm in believing that authors must publish or make available by other means--typically websites these days--the data used and the methods/algorithms

could you request Dr. Thompson to publish this data forthwith, preferably at WDCP.

Thanks, Steve McIntyre

May 12, 2004 Kivel to McIntyre

Stephen Schneider has asked me to let you know that we have contacted Dr. Lonnie Thompson regarding the data sets used in his paper at Climatic Change. Dr. Thompson has informed us that he is planning to place those data sets on their web site within the next few weeks. If that doesn't happen, please let us know.

Regards,

Katarina Kivel

May 12, 2004 McIntyre to Kivel

Thank you very much for this. I am not the only person who Thompson has frustrated and it is nice to see that Prof Schneider (or you) have looked after this matter with what seems to be his (your) usual efficiency. Wouldn't it make more sense to ask him to archive the data at WDCP, who have an excellent service and where some of Thompson's other data is archived.

AGU archiving policies for their journals (GRL) forbid the use of "gray" archives such as personal or even university websites and I would recommend that you try to achieve this standard wherever possible. WDCP would certainly like to have these series so that this standard can be easily met in this case.

Regards, Steve McIntyre

June 3, 2004 McIntyre to Kivel

To date, Dr. Thompson has only placed the 10-year averages for 1000 on the 3 Chinese cores on his website. The original data presumably came in a different form. What is the status of this? Also the series are much longer than posted. Why doesn't he just archive his data at WDCP?

Regards, Steve McIntyre

June 4, 2004 Kivel to McIntyre

Just a brief message to let you know that we have passed along your comments below to Dr. Thompson.

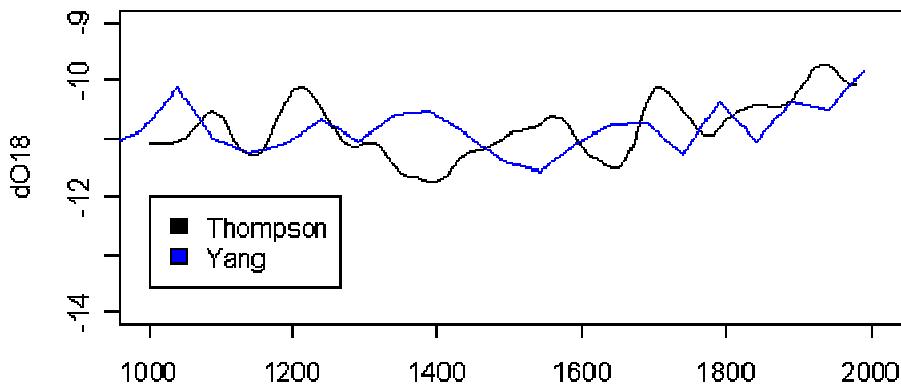
Regards,
Katarina Kivel

July 27, 2004 McIntyre to Schneider and Kivel

I note that, at your request, Dr. Thompson has now archived 10-year average values for Dunde, Guliya and Dasuopu ice cores and that these values correspond to Figure 5 in their Climatic Change article(see <http://bprc.mps.ohio-state.edu/Icecore/Climatic-change-2003-Fig5-table.XLS>), but has not archived annual data. Since the Dunde ice core was taken about 17 years ago and nothing was archived from this core prior to your intervention, your intervention has obviously improved the situation, even if the archiving is very incomplete and inadequate. I urge you to insist on archiving of all data and in a permanent archive, rather than the present "gray" archive at Thompson's website.

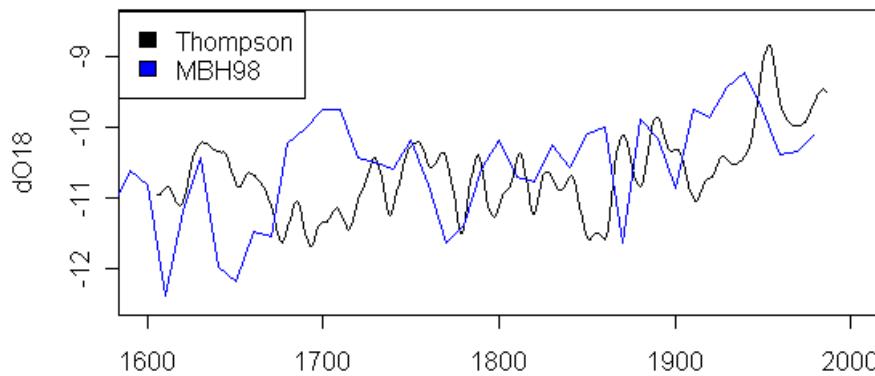
Previously, other "gray" versions of Dunde ice core have been used by Yang et al. on a 50-year average basis after 200 in their Chinese composite published in GRL and by Mann, Bradley and Hughes (archived at <ftp://holocene.evsc.virginia.edu/pub/MBH98>) on an annual basis after 1600, published in Nature (1998). The figure below compares a smoothed version of the CC2003 Thompson data for Dunde (11-point gaussian weights applied to decadal data) as against the version applied by Yang (pers. comm.).

Dunde Versions - 50 year smoothed



The next figure compares a smoothed version of the annual Dunde data used in MBH98 (11-year smoothing) with the CC decadal version, again with obvious differences.

Dunde Versions - Second Comparison



I did not see any discussion in the Climatic Change article reconciling the different versions. Was this considered by your referees? Can you obtain and publish an explanation for the differences. I suspect that the situation is similar with other Himalayan ice cores.

I note that the use of gray data versions in paleoclimate lends itself to surreptitious changes of data without notice to readers. Since some of these data sets are used for multi-proxy studies, this can be very troublesome. AGU policy for their publications (not enforced unfortunately) limits citation to archived data and requires explicit data citation (by identification number). I am urging Climatic Change, and other paleoclimate journals, to implement an accurate system of data citation along the lines of AGU policy.

Thank you for your attention.
Regards, Stephen McIntyre

July 26 Kivel to McIntyre

Thank you for your message.

Just to let you know that we have forwarded your request to Dr. Thompson and will let you know as soon as we receive a reply. Please note that I will be out of the office during August, so please be sure to send all communications to Stephen Schneider with a copy to this email address.

Regards,

Katarina Kivel

Sep 21, 2004 McIntyre to Thompson

Dear Dr. Thompson,

I have been looking at some of the versions for Dunde δO_{18} and would appreciate some assistance. I have compared the versions posted at your FTP site with the version posted at Professor Mann's FTP (annual 1606 on) and with a version used by Professor Yang (50 year averages), plotted below. Obviously, there are significant discrepancies between the versions: what is the reason for this?

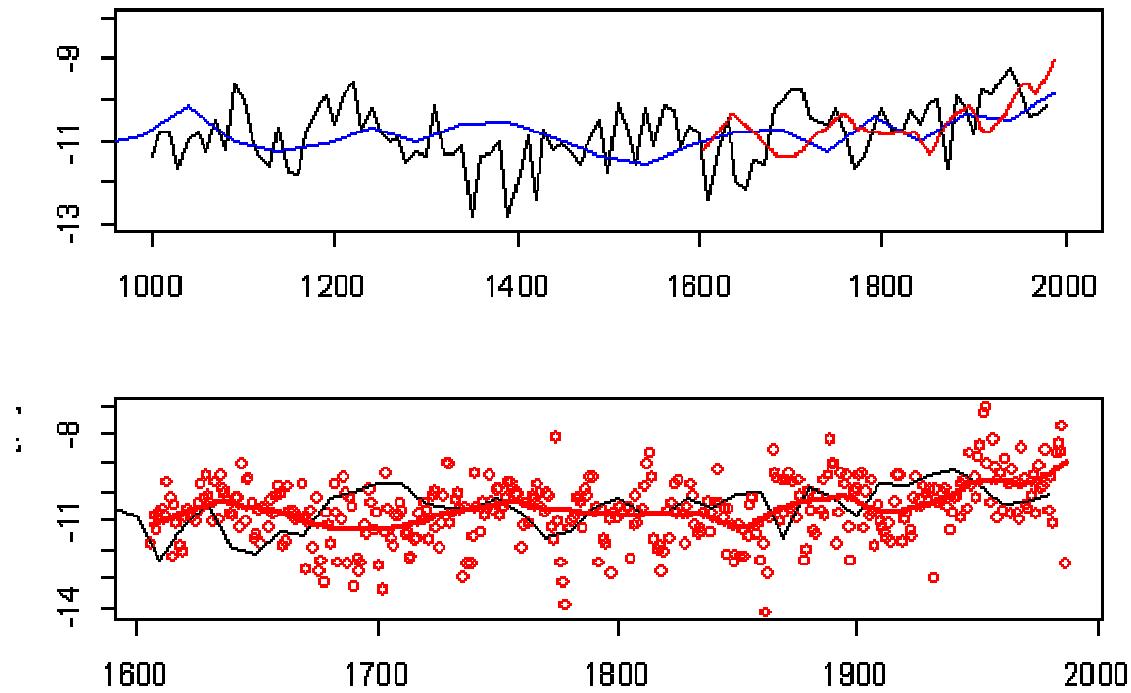


FIGURE 1. Top: Black (Thompson 2004 FTP site); red: smoothed MBH98 version; blue: Yang version; **Bottom:** red points: MBH98 version; red line: smoothed MBH98 version; black: Thompson (2004) version.

Secondly, when I compare the decadal version at your FTP site to the previous plots, there seem to be significant differences. For example, the data from the Thompson FTP site yields a

different plot than Climate since 1500 Figure 27.16 – the earlier figure had positive values just after 1340, while the current version has a strong negative value.

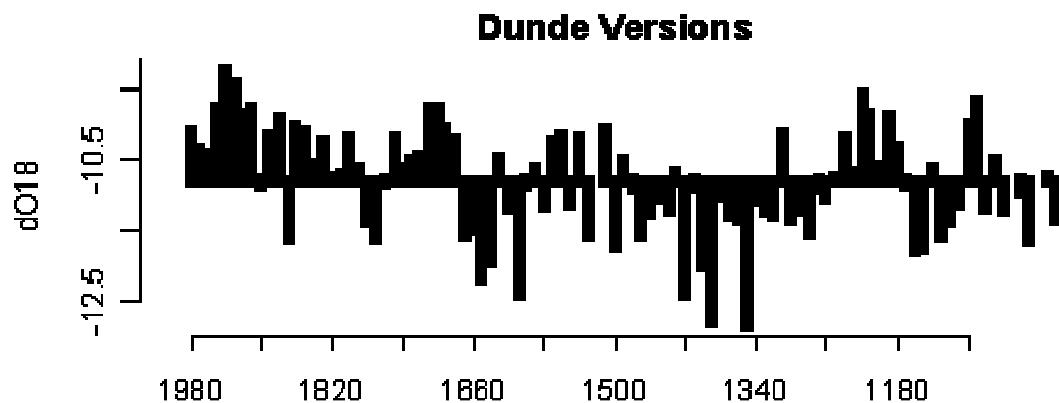


Figure 2. Thompson FTP data plotted like Climate since 1500 Figure 27.16.

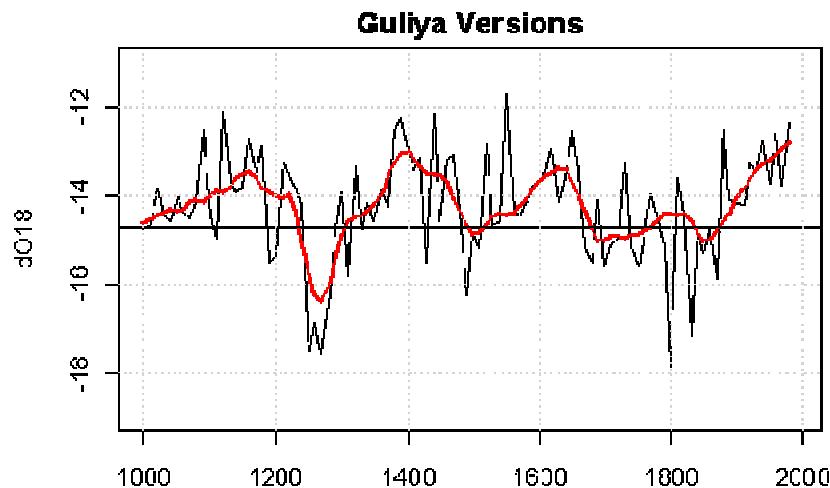
Do the differences pertain to changes in age model or is there some other explanation? Is there an FTP location for the underlying information, from which the different results can be reconciled?

Thanks, Steve McIntyre

Sep 21, 2004 McIntyre to Thompson

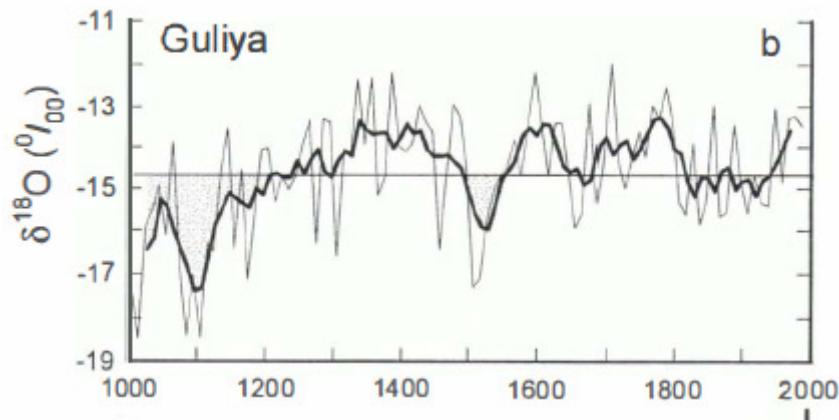
Dear Dr. Thompson,

I would also appreciate some assistance with Guliya. I plotted the Guliya data from your FTP site (showing the decadal data for your Climatic Change 2003 article). When I compare this graphic to Lin et al., Ann Glac 21 (1995), Figure 4(b), the shape has many points of similarity, but the 13th century is shown as having high values, rather than low values, as below. Is there underlying data available from which these different versions can be reconciled?



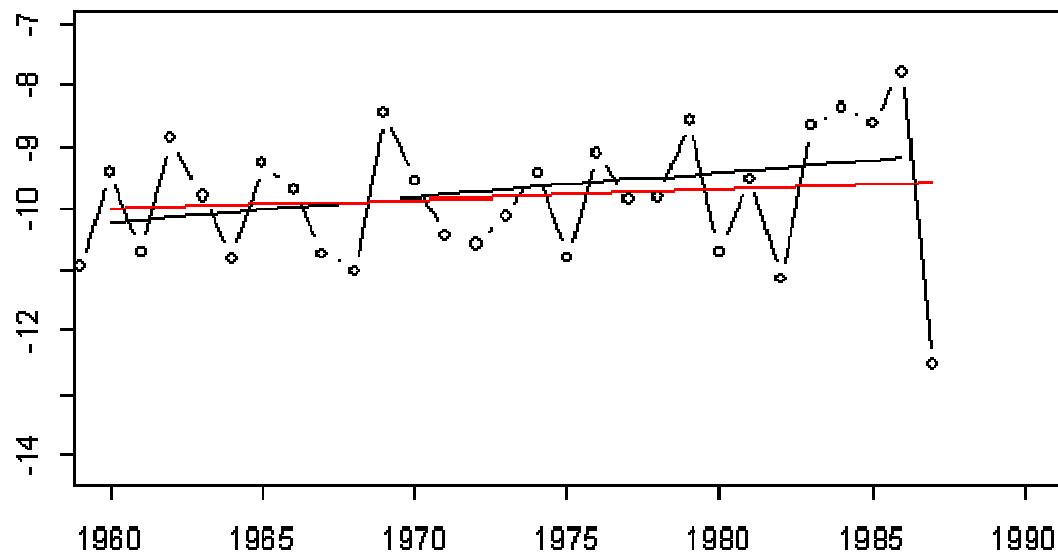
Yours truly, Stephen McIntyre

[SM Note: here is the referenced figure from Lin et al 2005, showing the discrepancy, which may arise from differences in dating.



Sep 21, 2004 McIntyre to Thompson

Another question on Dunde. The data used in Lin et al., JGR 101 (1996) appears to be identical to the annual data used by Mann et al. The figure below shows the MBH98 data plotted in the same manner as Figure 4 of Lin et al. (1996). The data used in Lin et al., JGR 101 (1996) appears to be identical to the annual data used by Mann et al. The figure below shows the MBH98 data plotted in the same manner as Figure 4 of Lin et al. (1996). Notably, the final (low) value is not plotted. The slope of the line in Lin et al. appears to have been calculated without the low closing value. What is the reason for this?



Regards,
Steve McIntyre

Oct 21, 2004 Schneider Letter to McIntyre in Ordinary Mail

[I can't locate this letter which is responded to in my email of Nov 23, 2004.]

Nov 11, 2004 McIntyre to Thompson

Forwarded most recent email without response.

Nov 11, 2004 McIntyre to Climatic Change

Forwarded most recent email, noting that I had not had any response

Nov 23, 2004 McIntyre to Schneider

In your [snail mail] letter of Oct. 21, you refer to the decadally averaged data used in the Thompson et al. (2003) paper. I agree that the data version used in that paper is available at the website; the trouble is that these data versions do not reconcile to other versions of the data used elsewhere (see below.)

There is virtually no correlation in the 20th century between the Dunde series used by Mann et al in 1998 and the present version. Why is this? Given this inconsistency, surely the authors should archive the raw data (rather than averaged data) and explain the inconsistencies. Ideally this sort of reconciliation would have taken place prior to publication, but, since it didn't, I think that you should require them to archive the underlying data and reconcile the inconsistencies. It's not enough just to archive another inconsistent version of averaged data.

Thanks, Steve McIntyre

[Note – this exchange with Climatic Change fizzled out at this point.]

Feb 6, 2005 McIntyre to Richard Kerr of *Science*

[This email was sent following an interview about our then recently published article about MBH98.]

Dear Richard,

perhaps you could help me with something. Does *Science* have a policy requiring contributing authors to archive (or otherwise make available) data reported in *Science*. I have been trying for nearly 18 months to get data published in Science by Lonnie Thompson on the Dunde, Guliya and Dasuopu ice cores, all staples of multiproxy studies.

Last year, in response to my inquiries to Climatic Change, Thompson archived 10-year average values for Dunde, Guliya and Dasuopu ice cores, corresponding to Figure 5 in their Climatic Change article(see <http://bprc.mps.ohio-state.edu/Icecore/Climatic-change-2003-Fig5-table.xls>). This was slightly helpful but fell far short of proper archiving.

This is especially so because this data version is inconsistent with different "grey" versions of Dunde previously circulating and used in Mann et al. [1998] and Yang et al[1002] as shown in the two figures below.

Dunde Versions - 50 year smoothed

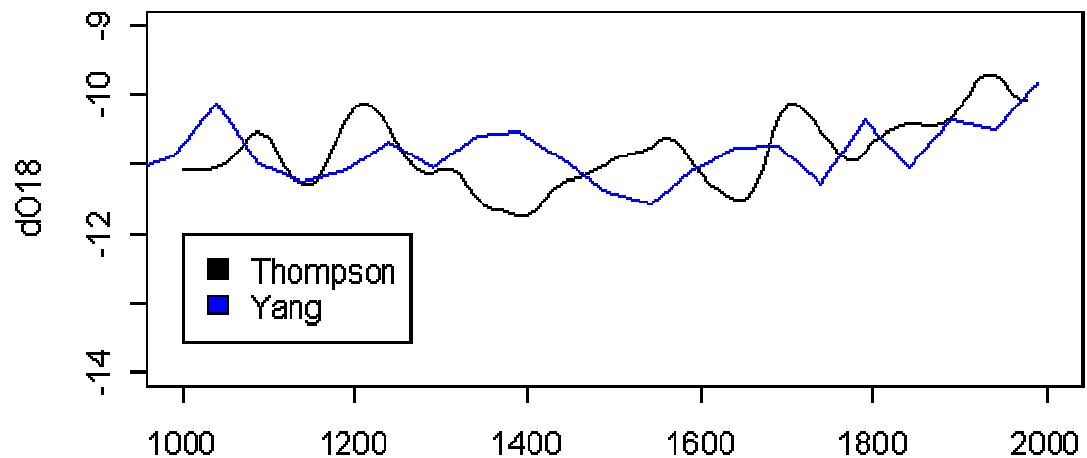


Figure 1. Dunde: Yang version versus smoothed version of Thompson [2003] version.

The next figure compares a smoothed version of the annual Dunde data used in MBH98 (11-year smoothing) with the CC 2003 decadal version, again with obvious differences.

Dunde Versions - Second Comparison

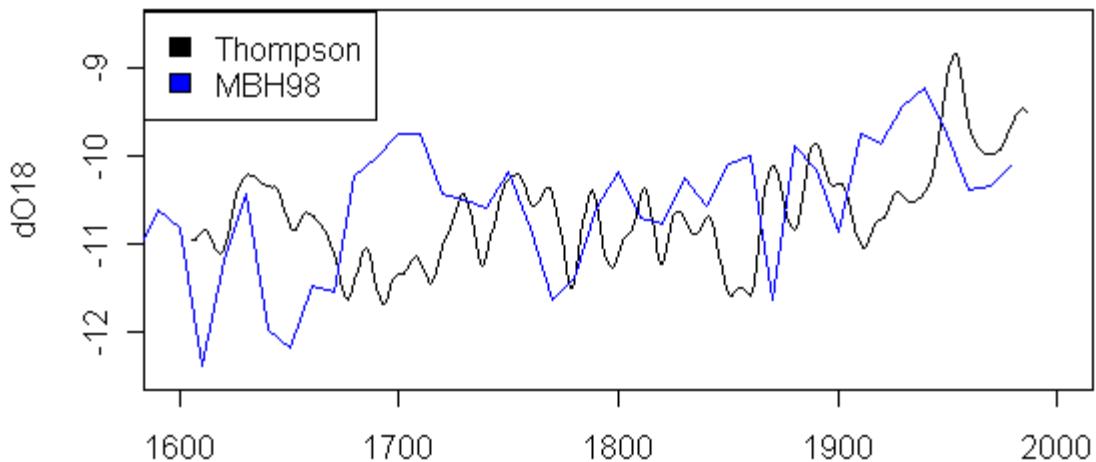


Figure 2. Dunde - Thompson 2003 version versus smoothed MBH98 version,

There has never been any explanation of the differences, which are visually quite material. In order to effect a reconciliation, one needs to see the original data by sample (which was taken 17

years ago), together with an explanation of the differences. Since Thompson originally published in Science, perhaps Science could take some initiative in getting him to archive the original data and methods. ...

If there is anything that you can do (including forwarding this to the person responsible), I would appreciate it.

Thanks, Steve McIntyre

Feb 15, 2005 Kerr to McIntyre

Dear Steve,

Interesting questions. I'm only a news writer here, so I would point you to the following two links in our Advice to Contributors pages. Requirements for archiving data seem to focus on the biological and genomic, or at least those areas with prominent public archives.

Climatic and geophysical data archives exist, but Science doesn't seem to notice. Also, even the biological requirements are fairly new.

http://www.sciencemag.org/feature/contribinfo/prep/gen_info.shtml#datadep
http://www.sciencemag.org/feature/contribinfo/prep/prep_online.shtml#categories

You might direct any questions to our online editor, Stewart Wills:

Good luck.

Dick

Feb 15, 2005 McIntyre to Stewart Wills, Online Editor, *Science*

I am writing at the suggestion below of Richard Kerr who interviewed me about 10 days ago. In the email below, I requested data pertaining to paleoclimatic studies published in Science, where I have been unable to obtain data from the authors and requested the assistance of Science as the publishing journal. Thanks for your attention, Steve McIntyre

Feb 15, 2005 Wills to McIntyre

Dick Kerr is correct that our policy on deposition of data to public repositories has tended to focus on the life sciences. However, one of our published conditions of acceptance is that "any reasonable request for materials, methods, or data necessary to verify the conclusions of the experiments reported must be honored," which would seem to cover the situation you discuss herein. If I am understanding your request correctly, you are looking for the data underlying the three Science papers by Thompson et al. from 1997, 1998, and 2000, which undergird a later (2003) study by Thompson et al. in a different journal.

I am copying this to Brooks Hanson, the deputy editor for physical sciences here at Science, who is really more qualified to respond to the issues raised here.

Cordially yours,
Stewart Wills

Feb 15, 2005 McIntyre to Wills

Thanks for the prompt and courteous reply. With respect to the Thompson data, the problem is that the version of the Thompson data published in 2003 in Climatic Change on a decadal basis is inconsistent with other versions (also published in smoothed forms). Accordingly, there is little point in merely providing the plot-points for previous alternative smoothed version, as Thompson would almost certainly do. What is needed is a digital record of the sample data together with a Readme reconciling the different versions.

This applies to the Dunde, Guliya and Dasuopu data, all of which was published in Science. Since these sites have been widely applied in multiproxy studies and were drilled many years ago, I think that comprehensive archiving of all drill data is long overdue. I have also requested that Climatic Change take initiative in this matter, but they have either not done so or have been unsuccessful.

...

Thanks for your consideration,
Steve McIntyre

Feb 15, 2005 Wills to McIntyre

Thanks for this additional information. As noted, I've referred the matter to Brooks Hanson, whom you copied to your message.

Best wishes, and good luck in this,
Stewart

Feb 15, 2005 Brooks Hanson, Deputy Editor, *Science* to McIntyre

Dr. Wills passed me your inquiry, and I'm looking into it further. Can you please provide a bit more detailed request of what you would like with respect to the data for these papers and what specifically you have already requested from the authors (Thompson and Cook), then I'll be happy to look into it further. We can look into requesting data, but would not ask the authors for or require further interpretations of the data at this point (e.g., your note on a readme file) or for data published in other journals.

Sincerely,
Brooks Hanson
Deputy Editor, Physical Sciences.

July 15, 2005 McIntyre to Hanson

Sorry not to respond earlier. I failed to do so at the time and just noticed my oversight. I presume that you will have taken some initiative in the mean time. In the event that you have not done so, here are some thoughts.

As far as I'm concerned, Thompson et al. should archive at the World Data Center for Paleoclimatology an authoritative, organized and complete archive for each drill-hole of all their samples, including whatever measurements were taken for each sample, as well as the log for each hole. *Science* has been the primary outlet for the publication of their results. However, for

example, Thompson et al. had never archived any results for Dunde, Dasuopu or Guliya (all published in *Science*) until last year when they made a limited archive of decadally averaged results after I pressed Climatic Change, where they published decadally-averaged information on dO18.. However, this is far from being a complete archive. Their archiving responsibilities under the purview of *Science* extend to every ice core published in *Science*.

They have archived information from Kilimanjaro, but not for samples. Since the authors have carried out age adjustments on their ice cores based on pattern-matching, it is highly pertinent to have the entire corpus of samples in order to validate their proposed sample matching.

Given the authors concern that the glaciers themselves may be receding, it is particularly vital that they archive this data in a permanent archive such as WDCP.

Regards,
Steve McIntyre

Aug 26, 2005 McIntyre to Hanson

Any progress with this inquiry originally made on Feb. 6? Regards, Steve McIntyre

Sep 2, 2005 Hanson to McIntyre

[Asked that note be kept confidential. Said that they were in communication with Dr. Thompson and are working to assure compliance with our stated policies.]

Sep 2, 2005 McIntyre to Hanson

Thank you for your courteous note. In your note, you mention that I stated on my blog that you do not have "a stated policy (rather easily checked)". I checked the posting that I think that you're discussing, but was unable to see where I made that statement. I must be missing something. Could you identify the statement in question so that I can make any appropriate corrections.

In respect to your prior emails, I regret any misunderstanding. My communications to you did not pertain to a pending submission; rather they were more in the nature of a complaint to a corporation. There was no indication in your replies that the replies were intended as confidential and it did not occur to me that this was your intent. Because Dr Thompson, the publisher of *Science* and the editor of *Science* had all criticized the Barton Committee on its concern about data disclosure in respect to climate science, I thought that the data disclosure practices of Dr Thompson and *Science* were fair comment.

Having said that, I regret any misunderstanding and I would be pleased to respect your wishes as to confidentiality on the present note. Do you wish that confidentiality to extend to even to the fact that you are now working with Dr Thompson to ensure compliance with your policies or may I post up this fact on my blog in order to ensure an accurate record.

Yours truly,
Steve McIntyre

Sep 2, 2005 Hanson to McIntyre

[Asked that email be kept private.] In response to my request for blog posting, Hanson referred to the following statement by me and to a commenter's comment:

the underlying issue is that Science does not seem to either have policies that require authors to archive data or administration practices that ensure that their policies are applied. Since NSF then relies (a reliance which seems to me to be an abdication of their own separate responsibilities) on journals like Science, with either inadequate policy or inadequate administration, there's a knock-on effect.

Sep 2, 2005 McIntyre to Hanson

I appreciate the pleasant tone of your email and am trying to maintain the same tone. So I hope that you take the following comment in this spirit.

My email refers to journals with "either inadequate policy or inadequate administration". Given that Thompson has generated large data sets which are nowhere archived, one of the two is surely applicable.

You have made that the point that you believe that Science's policies are adequate. If so, then surely this points to inadequate administration. Or perhaps policies have changed and it was past policy rather than past administration that resulted in the present situation. Either way, if there had been both adequate policy and adequate administration, the Thompson data would be currently archived. I don't see the problem with my sentence as it stands.

I remain concerned about the implementation of your policy to see whether, in practice, it will prove "adequate" with a reluctant contributor within the terms that I believe appropriate. My view is that appropriate archiving of a unique dataset, such as the ones that Thompson (to his credit) has collected, requires the archiving of every single measurement on every single sample up and down the ice core. This is trivial with modern technology.

I am pleased that the present editors of Science, including yourself, are turning their attention to this matter and I am sure that you will carry out these efforts with the distinction that marks your journal. However it remains to be seen whether the effective administration that is now being applied will succeed in achieving the desired goal of a complete archive.

Let's hope so. If so, I will be the first to congratulate you upon accomplishing this and will do so without any backbiting or backhanded remarks.

Regards, Steve McIntyre

Sep 6, 2005 Hanson to McIntyre

[Asked whether I'd approached the authors directly.]

Sep 10, 2005 McIntyre to Hanson

... In the case of Thompson, the particular request pertained to the Himalayan ice cores, rather than the list below, but you might as well deal with the Thompson problem in an organized way

rather than piecemeal. The WDCP database has been in existence long enough to cover most of the Thompson cores. Aside from obligations pursuant to publication in Science, Thompson would have archiving responsibilities pursuant to NSF funding, but NSF has made little attempt to ensure compliance and seems to have relied on the assumption that journals would have ensured archival compliance....

Regards, Steve McIntyre

Sep 24, 2005 McIntyre to Hanson

... I have directly requested information from the authors without success. (While I have done this, this would not affect the obligations of the authors to properly archive their data pursuant to your policies.) The particular requests sent to you differ somewhat from the prior requests.

The World Data Center for Paleoclimatology has been in existence to cover nearly all the applicable data sets. The Quelccaya data, which is the earliest project, actually has some information archived (although not complete). ...

I have accepted an invitation to act as a reviewer for IPCC 4AR and want to examine this data as part of my review.

Yours truly,
Steve McIntyre

Oct 3, 2005 Hanson to McIntyre

[Hanson said that he was working with authors to get data].

Oct 3, 2005 McIntyre to Hanson

I'm glad that this is progressing. ...

In order to simplify your own administration of this type of work, you might institute a web-based form in which the submitting authors verify that they have archived their data and detailed procedures at an FTP site for potential review in accordance with your policies (and prior to publication, confirm that the archive is at a permanent website). The existence of this type of form would not guarantee that it was actually done, but it would transfer responsibility to the submitting authors at an appropriate time, and provide a more effective remedy in the event of non-compliance.

Cheers, Steve McIntyre

Oct 21, 2005 Hanson to McIntyre

Hanson sent d18O files for two Kilimanjaro cores (NIFC2.pdf; NIFC3.pdf). I transcribed these and placed them online (see climateaudit.info/data/). Hanson asked if he could pass my name on to Thompson to help clarify additional details on other requests.

Oct 21, 2005 McIntyre to Hanson

Thank you somewhat for your efforts in this. I presume that Thompson is, to some extent, trying to be annoying by providing a pdf file rather than placing the data in a proper digital archive. More importantly, there is additional sample information e.g. chemical analyses, which is not in these files. This should be part of the archive. What is the status of this?

As to the other sites: I do not want to deal with Thompson directly. I have attempted previously without any success and am relying on your good offices. I don't see what problems could possibly exist in creating a complete archive or how I could be of any assistance to Thompson in this.

However, if there are specific issues which Thompson has raised with you, I would be happy to respond on specific issues.

This is sure slow going. As I mentioned before, I would really encourage you to create a web-based submission form in which authors acknowledge your data archiving requirements, commit to meeting those requirements and provide particulars on the final archive, which could be included in the Supplementary Information.

Cheers,
Steve McIntyre

Feb 2, 2006 Hanson to McIntyre

I've sent you some data from Thompson's Kilimanjaro paper. The previous Thompson papers were published before our current policy. However, we are working with him to have relevant data made available (the cores are archived at an archive at OSU).

Sincerely,
Brooks Hanson

Feb 2, 2006 McIntyre to Hanson

Thank you for your prompt response to my letter in respect to Osborn and Briffa [2006], Esper et al [2002] and Thompson et al [1989; 1997]. I appreciate your efforts in this and realize that you are frustrated at being criticized. However, if you reflect on the matter, I'm sure that you will agree that the problem stems entirely from the original authors failing to comply with Science's data archiving policy.

It will come as no surprise to you that I do not believe that the additional data, useful as it is, comes anywhere near discharging Science's obligations under its data policies for reasons that I will set out in detail below. I will discuss the shortfalls in connection with what I understand to be one of Science's governing policies

http://www.sciencemag.org/feature/contribinfo/prep/gen_info.dtl#datadep) :

Science supports the efforts of databases that aggregate published data for the use of the scientific community. Therefore, before publication, **large data sets ... must be deposited in an approved database and an accession number provided for inclusion in the published paper.**

Since the issue pertains to how Science discharges its policies, it is my position that you, rather than the original authors, are the appropriate arbiter of that. (Additionally, the authors have refused all requests in the past and I see no reason why their behavior would now differ.)

Status of Each Request:

....

6. *Thompson provides a complete archive of both Dunde and Guliya ice cores, including both isotope and chemical data.*

While I appreciate that Thompson has provided sample information on (only) 2 Kilimanjaro cores, he did not provide the requested accompanying chemical information necessary for their interpretation. The Kilimanjaro data is obviously of little help with the Dunde and Guliya data.

The U.S. Global Change Research Program required archiving of data commencing in 1991 and the World Data Center for Paleoclimatology has been in existence since then and has been online since 1994. Accordingly there was an adequate facility for the archiving of the Guliya core when it was published in 1997.

I realize that the Dunde core was published in 1989, at a time when your present archiving policies were not in effect. However, Thompson has published versions of this series in other journals which are inconsistent with the version published in Science. I cannot imagine that you are content with such a situation. Even if you did not have policies at the time, I am sure that you can give a very firm request to Thompson and I find it difficult to believe that Thompson would refuse a direct request from Science to provide this data. If he has refused a direct request, then that too is relevant information, upon which I would appreciate confirmation.

Again, I apologize for putting you in the middle of this and for the public nature of the exchange. However, some of this has been going on far too long with minimal results, leaving no alternative. However, I assure you that I will be equally public in commending you if and when you resolve matters. In my opinion, you should simply do the following:

- (1) send a copy of your data archiving policy to each of the authors: Osborn-Briffa; Esper et al. and Thompson;
- (2) tell Osborn-Briffa and Esper et al. that you expect them to comply with the policy which was in effect at the time of publication or else you will retract the article.
- (3) tell Thompson that, if he wants to publish at Science in the future, he should immediately clean up his archive for the earlier articles.

Obviously there has been some inadequate housekeeping in the past. I can understand this and my concern is not with the past. My concern is with the present. You have an opportunity to remedy the situation now and no one will criticize Science for ensuring that paleoclimate authors meet Science's data archiving policies. On the other hand, you will be justly criticized both by me and others if you don't do so.

Regards,
Stephen McIntyre

Mar 17, 2006 Hanson to McIntyre

[Temporizing email to say that he was still checking

Apr 18, 2006 Hanson to McIntyre

[Sent some data on Esper and Osborn-Briffa.

May 11, 2006 McIntyre to Hanson

...

I note that no progress seems to have been with the Thompson data and hope that you are continuing your efforts on this front as well. Once again, I appreciate your efforts. It is too bad the various authors have responded with bits and pieces of their data, rather than with complete information.

May 19, 2006 McIntyre to Hanson

Again, I have not heard from you regarding Thompson. Is this simply a dead topic? Should I conclude that Science will making no efforts to require Thompson to archive data beyond what is presently available?

[this exchange then fizzled]

Apr 4, 2007 McIntyre to PNAS (see [here](#))

Last year, I was invited to make a presentation to the National Academy of Sciences Panel on Surface Temperature Reconstructions on millennial temperature reconstructions and have published several peer-reviewed articles in the field, which were cited by the above panel in their report last year.

I am writing in connection pursuant to your policies for availability of unique materials and databases <http://www.pnas.org/misc/iforc.shtml#submission> in connection with Thompson et al 2006, Abrupt tropical climate change: Past and present, PNAS 103, 10536-10543

Your policy statement says that:

Unique Materials: Authors must make **Unique Materials** (e.g., cloned DNAs; antibodies; bacterial, animal, or plant cells; viruses; and computer programs) promptly available on request by qualified researchers for their own use.

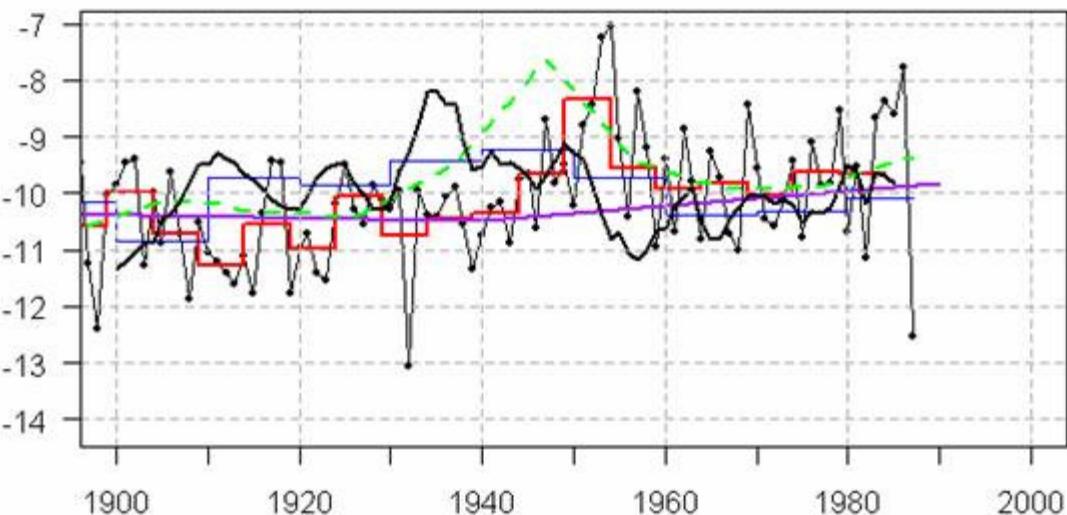
and:

Databases: Before publication, authors must deposit large data sets (including microarray data, protein or nucleic acid sequences, and atomic coordinates for macromolecular structures) in an approved database and provide an accession number for

inclusion in the published paper. When no public repository exists, authors must provide the data as Supporting Information online or, in special circumstances when this is not possible, on the author's institutional web site, provided that a copy of the data is provided to PNAS.

Thompson et al 2006 describe results from ice cores drilled at Dunde, Guliya, Dasuopu, Puruogangri, Quelccaya, Huascaran and Sajama. For each core, several thousand samples were taken and analyses on a sample-by-sample basis made for isotopes, chemistry and other indicators. The information for each core constitutes a large data set within the meaning of your policies. There is an excellent public repository for ice core data at the World Data Center for Paleoclimatology, which satisfies your definition of a public repository. Under your policies, Thompson et al had an obligation to archive this data as a condition of publication, but this appears to have been overlooked. Although Thompson et al provided a highly abbreviated summary of isotope information as Supplementary Information, the Supplementary Information is incomplete and not compliant with journal policies.

There is a pressing need to ensure compliance with journal data policies, because numerous inconsistent summaries are in gray and peer-reviewed circulation. For example, the figure below illustrates substantial differences between Dunde δO18 data summaries. These discrepancies can only be reconciled through examination of the underlying large data sets, which should have been archived prior to publication had journal policies been followed.



Dunde Versions. Heavy black – Yao et al 2006 (3 year rolling average); thin black - MBH98 (annual); red - PNAS 2006 (5-year averages); blue - Clim Chg 2003 (10-year averages); purple - Yang et al 2002 (values in 50 -year intervals); green - Crowley and Lowery 2000 (original in standardized format, re-fitted here for display by regression fit to MBH98).

I request that you ensure that Thompson et al comply with your data policy by forthwith archiving the large datasets used in the PNAS article for each individual ice core (Dunde, Dasuopu, Guliya, Puruogangri, Quelccaya, Sajama, Huascaran) and for the entire suite of isotopes

and chemistry. In addition, because the discrepancies may result from changing algorithms for dating the ice cores, I further request that the dating procedure for each core be made available under your Unique Materials policy.

Thank you for your attention.

Stephen McIntyre

May 10, 2007 PNAS to McIntyre see [here](#)

Thank you for your messages and your interest in PNAS. I apologize for the delay in getting back to you, but I wanted to speak with Dr. Thompson about this request personally and he was out of the office for quite some time. I was able to reach him via phone the other day, however, and can now address your query. According to Dr. Thompson, the data you seek have all been deposited in the archive you specifically mentioned as well as being mirrored on his own website. Let me know if you have any further questions.

Michael Baden-Campbell
Senior Editorial Coordinator, PNAS

May 10, 2007 McIntyre to PNAS see [here](#)

Unfortunately, the following response from Dr Thompson is simply false: "According to Dr. Thompson, the data you seek have all been deposited in the archive you specifically mentioned as well as being mirrored on his own website"

I am perfectly aware of the highly incomplete summary information archived at WDCP and at Dr Thompson's website. Indeed, I used this information to plot the attached figure. You can readily verify for yourself that Dr Thompson's answer is false.

My request was as follows: "Thompson et al 2006 describe results from ice cores drilled at Dunde, Guliya, Dasuopu, Puruogangri, Quelccaya, Huascaran and Sajama. For each core, several thousand samples were taken and analyses on a sample-by-sample basis made for isotopes, chemistry and other indicators. The information for each core constitutes a large data set within the meaning of your policies."

In a responsive data archive, you could identify the sample number, top, bottom, isotope, chemistry and other indicators. Since several thousand samples were taken for each core, there would be several thousand lines in the archive. If there was more than one core for a site, each core would require a separate data file.

In the case of (say) the Dunde ice core, the only information archived by Thompson at WDCP is here: <ftp://ftp.ncdc.noaa.gov/pub/data/paleo/icecore/trop/dunde/dunde-d18o.txt>

This only covers isotope information for part of the core and this is not a sample-by-sample basis but has been aggregated into decadal averages. The same for other sites.

I re-iterate my request that PNAS ensure that Thompson comply with PNAS policies on these data sets.

Regards, Steve McIntyre

May 30, 2007 McIntyre to PNAS see [here](#)

Any progress with this?

June 21, 2007 McIntyre to Cicerone, PNAS

I have received no response to this [attached prior request to PNAS]. As I said in my earlier email, Dr Thompson's answer on data availability to you was false. I gave you a specific method to verify that his answer was false. Please advise on me on the status of this request and whether you plan to ensure compliance with PNAS policies. Regards, Steve McIntyre

July 26, 2007 McIntyre to Cicerone, PNAS

As noted below, Lonnie Thompson's response in connection to the availability of data was false. I provided you with detailed evidence showing this. Would you please take steps to require Thompson to comply with PNAS policies on data availability or rescind the article in question.
Regards, Steve McIntyre

July 29, 2007 Cicerone to McIntyre

After receiving your July 26 electronic mail, I inquired again about the Thompson et. al. paper and related data.

Dr. Thompson states, and the PNAS editors concur, that he has met the conditions of publication as stated by PNAS, for example, in PNAS Information for Authors under journal policies.

Have you ever tried to write to him directly at Ohio State University, or to inquire about whether any OSU reports might be available with even more of the *meta* data that you seek?

Yours sincerely, R. J. Cicerone

July 29, 2007 McIntyre to Cicerone

I asked for the sample data in order to reconcile inconsistent versions of Guliya and other data sets. At this time, the data is unavailable to resolve these inconsistencies as outlined in my original request. I strongly disagree that the data provided by Thompson complies with PNAS policies and believe that your decision in this matter is incorrect. Do PNAS policies offer an avenue in which I can appeal your decision?

While I disagree that PNAS policies correctly interpreted permit the present obstruction and obfuscation, if this is your view, then you should immediately re-examine your policies to ensure that they are modified so that they no longer permit obstruction and obfuscation in the future. You might consider asking the panel on data archiving for advice in this respect, if you are unable to develop adequate policies yourself.

Upon re-reading my original request, I note that one aspect of the request pertained to meta-data and, while I have asked Thompson for data – which he has not provided – , I have not specifically asked him for meta-data. I will request such information from him, but, given his track record of obstruction, I do not expect any success. It would have been more appropriate had PNAS made the request as I asked.

Your performance in this matter has been shameful. The issues of climate change are important and neither you nor the National Academy of Sciences should be parties to the efforts of certain scientists to obstruct the archiving of important data.

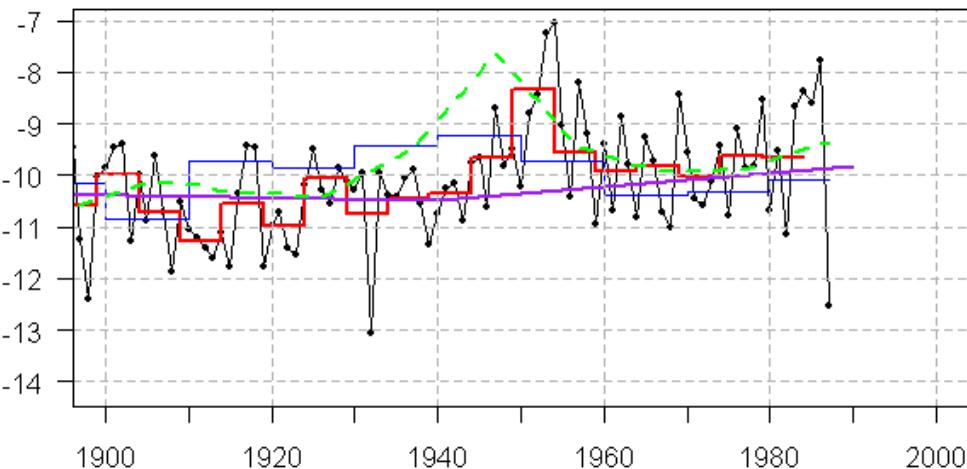
Regards, Steve McIntyre

July 30, 2007 McIntyre to Thompson

Cc Cicerone, Gerald North, Kurt Cuffey, Arden Bement (NSF), Brooks Hanson (Science)

Last year, I was invited to make a presentation to the National Academy of Sciences Panel on Surface Temperature Reconstructions on millennial temperature reconstructions and am a coauthor of several peer-reviewed articles in the field, which were cited by the above panel in their report last year and more recently by IPCC .

Your ice core dO18 data series have been applied in a number of temperature reconstructions. For each ice core, you have reported the taking of several thousand samples. However, the isotope and chemical data on a sample-by-sample basis has not been archived. Over the years, a number of inconsistent versions of some series have entered into circulation, as illustrated below for Dunde data. (A similar situation applies for Guliya.) Can you explain the reasons for the inconsistencies in these data versions?



Dunde Versions. Heavy black – Yao et al 2006 (3 year rolling average); thin black - MBH98 (annual); red - PNAS 2006 (5-year averages); blue - Clim Chg 2003 (10-year averages); purple - Yang et al 2002 (values in 50 -year intervals); green - Crowley and Lowery 2000 (original in standardized format, re-fitted here for display by regression fit to MBH98).

Because of the importance of this data, would you please provide a sample-by-sample archive of all isotope, chemical and other relevant data for Dunde, Guliya, Dasuopu, Puruogangri, Quelccaya, Huascaran and Sajama to the World Data Center for Paleoclimatology or other recognized archive. I further request that the dating procedure for each core be archived concurrently.

Thank you for your attention.
Stephen McIntyre

October 10, 2007 McIntyre to Bement, NSF

Dear Dr Bement,

I have read the recent GAO Report, which states:

The NSF agencywide policy states that researchers are “expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections and other supporting materials created or gathered.”

For several years, I have been attempting to obtain the "primary data" pertaining to Thompson's ice cores from Dunde, Guliya and elsewhere. This data was used recently in An Inconvenient Truth. For each core, there are typically over 3000 samples, and each sample has a suite of measurements including isotopes and chemistry. Thompson has failed to archive this "primary data" and has failed to share it with other researchers. Instead of archiving this important data, Thompson has (and this only after complaint) archived only gross summaries of the oxygen isotope information and not always for the complete core. Grey versions of the data are often inconsistent.

If existing NSF policies are sufficient to require Thompson to archive or share this data, could you please take immediate steps to require him to do so. If NSF policies are inadequate to require him to do so, could you please immediately advise the GAO that your policies do not require Thompson to archive or share his data so that GAO does not mislead readers who might interpret the language in their report as implying that NSF policies are binding on researchers.

Regards, Stephen McIntyre