
Subject: Re: Reading into arrays with order > 2

Posted by [Phil Aldis](#) on Mon, 08 Nov 1999 08:00:00 GMT

[View Forum Message](#) <> [Reply to Message](#)

> Assuming names3Mom is a 1D array of strings (of valid filenames) is there
> any reason why the following code will not read many files into a 3d
array?

```
>  
> FOR I=0,1 DO BEGIN  
>   close,1 & openr,1,names3Mom(I)  
>   readf,1,all3MomData(I,*,*)  
> END
```

> I get no error messages, but when I look at my array it contains no
data...?

> I'm quite sure the files being read contain data. Is this some inherent
> problem with readf and arrays with order > 2?

```
>  
> Steven
```

This is an very common mistake and is one which has cost me literally hours
of time cursing at my code only to realise that I've been duped again. The
problem lies in the readf line.

Unfortunately you can not read into subscripted arrays. This is to do with
the way IDL handles passing around subscripted arrays. Essentially when you
subscript an array, IDL creates a copy of that small subsection. So, it is a
temporary smaller array which gets passed into the readf function, not the
actual all3MomData array. This is called passing by value, because it is
only the value of all3MomData that is passed in, not the actual memory
location, so readf cannot change all3MomData at all.

So readf goes along as normal but instead of doing what you want, which is
to read the data into the right slice of all3MomData, it reads the data into
this smaller temporary variable. This is no use to you as this temp variable
is destroyed after readf is exited and nothing goes back into all3MomData.
This is why you're left with all 0's.

That's not a very good explanation - if you want a nice concise one then
you'll have to wait for David Fanning to post his reply.

That's all very well but you're now thinking what exactly do I have to
change. Well it's quite simple. Instead of reading directly into
all3MomData, you're going to go via a smaller variable which is the same
size as the slice, i.e

```
temp = all3MomData(0,*,*)  
FOR i=0, 1 DO BEGIN
```

```
OpenR, lun, /GET_LUN, names3Mom[i]
readf, lun, temp
all3MomData[i,*,*] = temp
Free_Lun, lun
ENDFOR
```

I've taken a bit of a liberty with your code, here. You used specific values for your file numbers (openr, 1, ...). However if for some reason the value of 1 was being used already by some other program, then your code would have mucked up their code. It is better to use the lun, /GET_LUN construction as it basically asks IDL to find a free number and then passes this number into the variable lun. Also try to use Free_Lun instead of just Close as Close does not properly free up the file.

Have a look at the IDL help files about this, but they're not crucial points.

My explanation has been a bit ropey, I'm sorry, but this help you stop the problem at least.

Anyway I've just realised you're at Oxford and well seeing as I'm at Caius College Cambridge, I'm sure I shouldn't have helped you :-)

Cheers,
Phil

Phil Aldis
Gonville and Caius College
Cambridge
CB2 1TA

Phone: 01223 520026
E-Mail : philaldis@yahoo.com
