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Subject: Re: Pass-By-Reference question.

Posted by [Mark Hadfield](#) on Wed, 10 Mar 2004 20:13:25 GMT

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Christopher Lee wrote:

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> In article <405594fa.0403100119.34769176@posting.google.com>, "Tim
> Robishaw" <timrobishaw@yahoo.com> wrote:
>
>> Hi there,
>> I've been using _REF_EXTRA for a long time now and have come to
>> appreciate that values of keywords sent to a module with the _REF_EXTRA
>> mechanism will override any keywords that are set inside the module.
>> Here is a great example: pro whaddup, _REF_EXTRA=_extra
>> plot, [0], [0], /NODATA, XRANGE=[-5,5], YRANGE=[-5,5], PSYM=4,
>> _EXTRA=_extra
>> end
>> IDL> whaddup
>> I see what the module asked for: axes from -5 to 5 with no datum
>> plotted.
>> Now I can override the XRANGE and YRANGE keyword values by passing them
>> by reference...
>> IDL> whaddup, XRANGE=[-1,1], YRANGE=[-1,1] I see what I asked for: axes
>> from -1 to 1. However, if I send NODATA set to ZERO, i.e., I'd really
>> like to see my datum this time...
>> IDL> whaddup, XRANGE=[-1,1], YRANGE=[-1,1], NODATA=0 I don't get what I
>> asked for. The value for NODATA sent by reference does not override the
>> value set inside the module. This is also true for the /NOERASE
>> keyword.
>
> Hi,
>
> IDL> plot, findgen(10), nodata=1
> IDL> plot, findgen(10), nodata=1, nodata=0
> % Duplicate keyword NODATA in call to: PLOT
> % Execution halted at: $MAIN$
> IDL> e={nodata:0}
> IDL> plot, findgen(10), nodata=1, _EXTRA=e
>
> Duplicate keywords give IDL no chance of knowing what to do, hence it
> complains, and it only looks in the _EXTRA struct if it doesn't find what
> it wants elsewhere.
```

Not so. As Tim said, keywords passed in via inheritance override keywords supplied explicitly. This is a very useful feature and virtually all of my code relies on it.

In previous versions of IDL there have been glitches in IDL's implementation of keyword precedence (for a while it worked with

value-inheritance but not reference-inheritance) but it has worked the way I describe since (I think) 5.4 or 5.5. There have been extensive, confusing discussions about this on the newsgroup in the past.

```
> If you want an option of overriding the nodata
> keyword, you need to look for it first, hence
>
> pro whaddup, nodata=nodata,_REF_EXTRA=_extra
>
> nodata_internal = 0
> if(arg_present(nodata)) then nodata_internal=nodata > 0 < 1
>
> plot, [0], [0], NODATA=nodata_internal, XRANGE=[-5,5], YRANGE=[-5,5], PSYM=4,
> _EXTRA=_extra
>
> end
```

Having inherited keywords override explicit keywords avoids the need for all this and allows much cleaner code.

As to why Tim's example works for XRANGE & YRANGE but not NODATA, I have no idea. Perhaps you are not really doing what you think you are doing.

--

Mark Hadfield            "Ka puwaha te tai nei, Hoesa tatou"  
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