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Subject: A strange behaviour of parameters passing  
Posted by [Daniel SAGE](#) on Thu, 03 Jun 1999 07:00:00 GMT  
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Hi,  
Who can explain me the strange behaviour when I passed my parameters ?  
I create a small and stupid example to see the disfunctioning of IDL.  
Why the first call of the procedure 'one' returns 1 and the second call  
return 2 ? According the documentation of IDL, the second calling is  
correct but  
not the first calling.  
Thank you

```
pro one, b
  b[0] = 2
end
```

```
pro two
  a = intarr(1)
  a[*] = 1
  one, a[*]
  print, a
  one, a
  print, a
end
```

```
% Compiled module: ONE.
% Compiled module: TWO.
IDL> two
  1
  2
```

-----  
Daniel Sage  
EPFL - Swiss Federal Institute of Technology - <http://www.epfl.ch>  
BIG - Biomedical Imaging Group - <http://bigwww.epfl.ch>

Address: EPFL, DMT/IOA, BM, CH-1015 Lausanne, Switzerland  
Tel: +41 21 693 5189  
Fax: +41 21 693 3701  
Email: [daniel.sage@epfl.ch](mailto:daniel.sage@epfl.ch)  
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Subject: Re: A strange behaviour of parameters passing  
Posted by [Liam Gumley](#) on Thu, 03 Jun 1999 07:00:00 GMT  
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Daniel SAGE wrote:

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  - > return 2 ? According the documentation of IDL, the second calling is
  - > correct but not the first calling.
- [code removed]

I believe IDL is doing what it is supposed to do.

In the first call (one, a[\*]), you are passing a subscripted array (even though you requested all elements). Subscripted arrays are passed by value and *cannot* be modified in the called procedure.

In the second call (one, a), you are passing an entire array. Entire arrays are passed by reference and *can* be modified in the called procedure.

Cheers,  
Liam.

--  
Liam E. Gumley  
Space Science and Engineering Center, UW-Madison  
<http://cimss.ssec.wisc.edu/~gumley>

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Subject: Re: A strange behaviour of parameters passing

Posted by [davidf](#) on Fri, 04 Jun 1999 07:00:00 GMT

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William Daffer ([vapuser@catspaw.jpl.nasa.gov](mailto:vapuser@catspaw.jpl.nasa.gov)) writes:

- > There's nothing wrong with passing expressions, unless you want to
- > change the value of the parameter inside a routine. It would be nice
- > if they gave us some way of checking whether an expression, rather
- > than a named variable, had been passed in. I am unaware of any such
- > capability.
- >
- > I don't think you can call this is a bug; I think it's a feature.

While we are on the subject of passing by reference (IDL variables) and passing by value (anything else, including expressions, system variables, structure de-references, etc.), I should just point out that this is *exactly* why this expression does NOT work in IDL:

```
FOR j=0, 10 DO Readf, lun, variable[j]
```

Although, I have to admit, it is an expression that every one of us has used at least once (and many times if we come to IDL from a FORTRAN background). People are still confused about why it produces no error message (Answer: because it actual \*works\*), and still returns no useful information.

In fact, here is a riddle Bilbo could have used with Smaug:

What works perfectly in IDL, but gives you no useful information?

Answer: Reading into subscripted variables!

Cheers,

David

--

David Fanning, Ph.D.  
Fanning Software Consulting  
Phone: 970-221-0438 E-Mail: davidf@dfanning.com  
Coyote's Guide to IDL Programming: <http://www.dfanning.com/>  
Toll-Free IDL Book Orders: 1-888-461-0155

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Subject: Re: A strange behaviour of parameters passing  
Posted by [Vapuser](#) on Fri, 04 Jun 1999 07:00:00 GMT  
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Daniel SAGE <daniel.sage@epfl.ch> writes:

Yeah, the answer is don't pass expressions into routines if you want the routine to change the value of its parameters.

In the first call you make to 'one' (e.g. one, a[\*]) the parameter is passed by `_value_` since it's not a variable but an expression (I think the completely proper way to say this is that what gets passed is a reference to a temporary variable that is destroyed when the routine 'one' exits) The second time you call 'one' the parameter is passed by reference, since you are passing a named variable and not a temporary one. In that case, you can change the contents of the parameter and have that change persist after return.

There's nothing wrong with passing expressions, unless you want to change the value of the parameter inside a routine. It would be nice if they gave us some way of checking whether an expression, rather

than a named variable, had been passed in. I am unaware of any such capability.

I don't think you can call this is a bug; I think it's a feature.

William

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> % Compiled module: ONE.
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> Daniel Sage
> EPFL - Swiss Federal Institute of Technology - http://www.epfl.ch
> BIG - Biomedical Imaging Group - http://bigwww.epfl.ch
>
> Address: EPFL, DMT/IOA, BM, CH-1015 Lausanne, Switzerland
> Tel:   +41 21 693 5189
> Fax:   +41 21 693 3701
> Email: daniel.sage@epfl.ch
> -----
```

--

William Daffer: 818-354-0161: vapuser@catspaw.jpl.nasa.gov

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Subject: Re: A strange behaviour of parameters passing

Posted by [steinhh](#) on Fri, 04 Jun 1999 07:00:00 GMT

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In article <3756C16A.A7C41C10@epfl.ch> Daniel SAGE  
<daniel.sage@epfl.ch> writes:

- > Hi,
- > Who can explain me the strange behaviour when I passed my parameters ?
- > I create a small and stupid example to see the disfunctioning of IDL.
- > Why the first call of the procedure 'one' returns 1 and the second call
- > return 2 ? According the documentation of IDL, the second calling is
- > correct but
- > not the first calling.
- > Thank you

The behaviour is just as it should be, and just as documented.  
See e.g. parameters:passing mechanism in the online help.

a[\*] is an expression, hence a copy of a is made, and the  
change in pro one affects only the copy.

Regards,

Stein Vidar

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Subject: Re: A strange behaviour of parameters passing

Posted by [David Kastrup](#) on Mon, 07 Jun 1999 07:00:00 GMT

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davidf@dfanning.com (David Fanning) writes:

- > Rose (rmlongfield@my-deja.com) writes:
- >
- >> Um, David, don't you mean Gollum (Smeagul)?
- >
- > Uh, right. I \*thought\* that name wasn't right, but my
- > kids weren't around and I couldn't put my hands on the
- > book in the time I looked for it. :-)
- >
- > Cheers,
- >

> David  
>  
> P.S. Let'ss jussst, ssssay the S'ses iss what  
> I rememberesses. :-)

Well, Bilbo tried riddle-talk on Smaug, too, but probably was less successful there.

--

David Kastrup Phone: +49-234-700-5570  
Email: dak@neuroinformatik.ruhr-uni-bochum.de Fax: +49-234-709-4209  
Institut für Neuroinformatik, Universitätsstr. 150, 44780 Bochum, Germany

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Subject: Re: A strange behaviour of parameters passing  
Posted by [davidf](#) on Mon, 07 Jun 1999 07:00:00 GMT  
[View Forum Message](#) <> [Reply to Message](#)

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Rose (rmlongfield@my-deja.com) writes:

> Um, David, don't you mean Gollum (Smeagul)?

Uh, right. I \*thought\* that name wasn't right, but my kids weren't around and I couldn't put my hands on the book in the time I looked for it. :-)

Cheers,

David

P.S. Let'ss jussst, ssssay the S'ses iss what  
I rememberesses. :-)

--

David Fanning, Ph.D.  
Fanning Software Consulting  
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Subject: Re: A strange behaviour of parameters passing  
Posted by [rmlongfield](#) on Mon, 07 Jun 1999 07:00:00 GMT  
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In article <MPG.11c20fb263dabbb19897d3@news.frii.com>,

davidf@dfanning.com (David Fanning) wrote:

- > In fact, here is a riddle Bilbo could have used with Smaug:
- >
- > What works perfectly in IDL, but gives you no useful
- > information?
- >
- > Answer: Reading into subscripted variables!
- >
- > Cheers,
- >
- > David

Um, David, don't you mean Gollum (Smeagol)?

:~)

Rose

Sent via Deja.com <http://www.deja.com/>  
Share what you know. Learn what you don't.

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