
Subject: Resizing Oddity

Posted by [David Fanning](#) on Thu, 29 Jan 2004 05:58:40 GMT

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Folks,

Ok, here is a question about image resizing that
really has me scratching my head.

Consider a small 2D image:

```
demo_getdata, scan, filename='ctscan.dat', dim=[256,256]  
scan = Rebin(scan, 64, 64)
```

I wish to make it larger. I'll use Congrid (but I have
the same problem with CMCongrid, Craig's alternative).
I can make it larger with and without interpolation.
Let's try interpolation first:

```
Window, Title='2D with Interpolation', 0, XSize=400, YSize=400  
TV, Congrid(scan, 400, 400, Interp=1)
```

Fine. Now without interpolation:

```
Window, Title='2D without Interpolation', 1, XSize=400, YSize=400  
TV, Congrid(scan, 400, 400, Interp=0)
```

This image has a "blocky" appearance, which in this case
is what I want. Good!

Next, consider a true-color image or 3D image. Here is one
for you to download. It is a 3x40x55 byte array.

<http://www.dfanning.com/hounddog.tif>

Let's have a look at it with interpolation:

```
dog = Read_Tiff('hounddog.tif')  
Window, Title='3D with Interpolation', 2, XSize=400, YSize=400  
TV, Congrid(dog, 3, 400, 400, Interp=1), True=1
```

Not bad. How about without interpolation:

```
Window, Title='Without (??) Interpolation', 3, XSize=400, YSize=400  
TV, Congrid(dog, 3, 400, 400, Interp=0), True=1
```

What!? Looks exactly the same as the "with interpolation"
window. What's going on?

To make this have the same blocky appearance I desire,
I have to do this:

```
bigdog = BytArr(3, 400, 400)
bigdog[0,*,*] = Congrid(Reform(dog[0,*,*]), 400, 400)
bigdog[1,*,*] = Congrid(Reform(dog[1,*,*]), 400, 400)
bigdog[2,*,*] = Congrid(Reform(dog[2,*,*]), 400, 400)
Window, Title='Without Interpolation', 4, XSize=400, YSize=400
TV, bigdog, True=1
```

I have two questions. The first is for all of you.

1. Why do I have to deconstruct my image to get what I expected to get with a single line of code? What is Congrid doing in Window 3 that is different from what it is doing in Window 4?

And the second is for those of you looking for extra credit.
(Nominations for the IEPA are due shortly.)

2. How do I get a blocky appearance with a row-interleaved image? For example:

```
testdog = Transpose(dog, [1,0,2])
```

Cheers,

David

P.S. Let's just say the more timely your answer is, the more extra credit you can receive. :-)

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