
Subject: grayscale vs. color

Posted by [noymer](#) on Tue, 16 May 2000 07:00:00 GMT

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

Sorry if this is a stupid question. I am making some line graphs (eps files) for a book, using IDL direct graphics. Some of the graphs have several series and it would be nice to use solid grey as an alternative to dot-dash-double-dot-dash-double-dotdash or whatever for some lines.

In the past, I have always loaded a colortable and there is always some color, not hard to find, that turns into the just right shade of grey when it goes to the laser printer. This color is not always "grey" --- it's whatever color prints out grey.

Trouble is, this time it's going to some imagesetter (no idea which kind) far far away. Plus they don't want color and they'll probably freak if they see color. I don't know what they'll say to a grey-like-color in a color EPS file; maybe that's kosher, but isn't there a way to have grayscale in a garden-variety B&W EPS file?

Is there a quick and dirty way to load a colortable that is really just a grayscale? I looked in the material I had but didn't find anything.

TIA,

-- Andrew

noymer@my-deja.com

Sent via Deja.com <http://www.deja.com/>
Before you buy.

Subject: Re: grayscale vs. color

Posted by [Martin Schultz](#) on Mon, 22 May 2000 07:00:00 GMT

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

put in a feature request for supporting the CMYK color scheme! Apparently it doesn't happen too often that this is needed (which leads to the question: what kind of graphics software do these hot-shots who are writing books use?), but it is sure frustrating if, after months of reiteration, your oh-so-beautiful plot can't be used for publication because of -- err, yes, color handling ;=) I sure hope that Corel Draw will be available for Linux one of these days; that could help ...

Martin

>
> Sorry if this is a stupid question. I am making some line
> graphs (eps files) for a book, using IDL direct graphics.
> Some of the graphs have several series and it would be nice
> to use solid grey as an alternative to dot-dash-double-dot-dash-
> double-dotdash or whatever for some lines.
>
> In the past, I have always loaded a colortable and there is
> always some color, not hard to find, that turns into the just
> right shade of grey when it goes to the laser printer. This color
> is not always "grey" --- it's whatever color prints out grey.
>
> Trouble is, this time it's going to some imagesetter (no idea
> which kind) far far away. Plus they don't want color and they'll
> probably freak if they see color. I don't know what they'll say to
> a grey-like-color in a color EPS file; maybe that's kosher, but isn't
> there a way to have grayscale in a garden-variety B&W EPS file?
>
> Is there a quick and dirty way to load a colortable that is
> really just a grayscale? I looked in the material I had but didn't
> find anything.
>
> TIA,
> -- Andrew
> noymer@my-deja.com
>
> Sent via Deja.com <http://www.deja.com/>
> Before you buy.

[[Dr. Martin Schultz Max-Planck-Institut fuer Meteorologie [[
[[Bundesstr. 55, 20146 Hamburg [[
[[phone: +49 40 41173-308 [[
[[fax: +49 40 41173-298 [[
[[martin.schultz@dkrz.de [[

Martin Schultz, martin.schultz@dkrz.de writes:

- > it is sure frustrating if, after months of
- > reiteration, your oh-so-beautiful plot can't
- > be used for publication because of -- err,
- > yes, color handling ;=)

What sort of problems are you running into? Out of Gamut colours?

I print IDL-generated graphics on CYMK printers all the time, usually by including TIFFs in a layout or drawing program, or by making EPS files and sticking them in work-processing files. Usually the printer driver does a fine job of converting the colour space, but if I want to do it manually I just fire up Photoshop or Illustrator. The last thing I want is RSI wasting their programmers' time trying to compete with Adobe.

Or am I missing something?

Struan

Subject: Re: grayscale vs. color
Posted by [davidf](#) on Mon, 22 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Martin Schultz (martin.schultz@dkrz.de) writes:

- > put in a feature request for supporting the CMYK color scheme!

Hear, hear!

- > Apparently it doesn't happen too often that this is needed (which leads
- > to the question: what kind of graphics software do these hot-shots who
- > are writing books use?), but it is sure frustrating if, after months of
- > reiteration, your oh-so-beautiful plot can't be used for publication
- > because of -- err, yes, color handling ;=)

Uh, they use black and white, mostly. :-(

But printing technology is advancing so rapidly that scientists must inevitably become experts in the graphics arts arena too if we want to present our data in the best light (as it were).

I've actually been thinking of adding some color graphics to the Second Edition of my book. Hell, a whole chapter on color handling and not one color picture! It is absolutely inevitable. CMYK (and I

mean *real* CMYK, not something half-baked) would be a welcome addition to the program library.

And it will fit in nicely with the 24-bit color printers that are in all of our futures. Perhaps a concerted response now will get IDL out ahead of the curve on this one. :-)

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

Subject: Re: grayscale vs. color

Posted by [Struan Gray](#) on Tue, 23 May 2000 07:00:00 GMT

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

David Fanning, davidf@dfanning.com writes:

> But what I would like, very much, is for the PostScript
> device to be a true 24-bit device so that 24-bit images
> could be reproduced in good CYMK colors. Now, of course,
> you have to Color_Quan 24-bit images to get PostScript
> color.

This is the sort of more fundamental issue I feel RSI should address. The whole colour mess in general should really be sorted out. The direct graphics colour model in particular seems stuck in the early 80's when 8-bit colour was something new and exciting.

It would be a real benefit to programmers if RSI made the whole of IDL work like object graphics, with the details of on-screen representation handled behind the scenes by default, but with tools to interrogate the display for those that needed to ensure that, for example, annotations and overlays really did stand out as-plotted.

> And the other thing I could *really* use is some kind
> of decent preview image in PostScript files.

Sharing files across platforms I find that previews seem to choke programs more than almost anything else, but I'd like the option to have them. On systems with colour management installed I'd also like to be able to embed a colour profile, particularly for greyscale images I've carefully tailored to have just the right amount of shadow or highlight detail.

I've recently installed and started programming the latest versions of several other packages which do similar things to IDL (Labview for instrument control, Igor for 1D graphing and analysis). This has reminded me of all the little niggly problems I've come to simply accept about IDL, but which are not necessary and waste everyone's time. I still like and use IDL a lot, but I resent having to find workarounds because RSI are too busy implementing new gadgets to sort out longstanding problems with the core of the program.

I feel better now.

Struan

Subject: Re: grayscale vs. color
Posted by [Liam E. Gumley](#) on Tue, 23 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

David Fanning wrote:

- > After giving this some more thought, I going to back
- > off a notch and agree with Struan, sort of. :-)
- >
- > Perhaps CYMK support is not strictly needed. Certainly
- > most of us have Photoshop. (Although, God knows that is
- > another long-learning-curve piece of software!) We can
- > probably get by with it or our friend, the Graphic Designer,
- > who we religiously take out to lunch at least once a month.
- >
- > But what I would like, very much, is for the PostScript
- > device to be a true 24-bit device so that 24-bit images
- > could be reproduced in good CYMK colors. Now, of course,
- > you have to Color_Quan 24-bit images to get PostScript
- > color.

The PostScript device **does** support 24-bit images displayed with TV or TVRD (don't forget to load the grayscale color table though). What it can't do is draw decomposed colors, as in the following example:

plot, indgen(10), color='FF0000'XL

A workaround is to use the Printer device (which supports both 24-bit images and decomposed colors), and select an output printer which supports color PostScript (e.g. HP Color Laserjet PS).

Cheers,

Liam.

<http://cimss.ssec.wisc.edu/~gumley>

Subject: Re: grayscale vs. color

Posted by [noymer](#) on Tue, 23 May 2000 07:00:00 GMT

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

In article <8gdv0a\$bop\$1@news.lth.se>,
Struan Gray <struan.gray@sljus.lu.se> wrote:

>
> As I pointed out, IDL already generates perfectly
> good-looking CYMK every time it uses a colour printer driver. If
> I need more control than the printer driver allows me, any modern
> graphics or page layout program can turn out professional-quality
> separations. If I'm publishing a book or a thesis with colour
> plates the separations are done by the printer and I just have to
> supply my monitor profile and check a proof or two.
>

So every time I make a change I have to go into IDL _and_ into
the GIMP? I beleive in one-stop shopping.

- Andrew

noymer@my-deja.com

Sent via Deja.com <http://www.deja.com/>
Before you buy.

Subject: Re: grayscale vs. color

Posted by [davidf](#) on Tue, 23 May 2000 07:00:00 GMT

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

Struan Gray (struan.gray@sljus.lu.se) writes:

> I'm not trying to be argumentative. I'm genuinely baffled as
> to why you and David feel IDL has no CYMK abilities at all, and

- > what exactly you feel should be added. I'm interested to hear
- > about specific problems you have had.

After giving this some more thought, I going to back off a notch and agree with Struan, sort of. :-)

Perhaps CYMK support is not strictly needed. Certainly most of us have Photoshop. (Although, God knows that is another long-learning-curve piece of software!) We can probably get by with it or our friend, the Graphic Designer, who we religiously take out to lunch at least once a month.

But what I would like, very much, is for the PostScript device to be a true 24-bit device so that 24-bit images could be reproduced in good CYMK colors. Now, of course, you have to Color_Quan 24-bit images to get PostScript color.

And the other thing I could *really* use is some kind of decent preview image in PostScript files. This certainly can't be beyond the talent at RSI and is something that would make IDL much more acceptable to the the general user community, who just want to get a decent plot into their report for the boss. Yes, we can produce PostScript, use Distiller to make a PDF file, convert that to... But, honestly. :-(

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

Subject: Re: grayscale vs. color
Posted by [Struan Gray](#) on Tue, 23 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Martin Schultz, martin.schultz@dkrz.de writes:

- > who says they must compete? If they can license
- > a bad editor, they should be able to license some
- > software to generate CMYK.

They are competing in the sense that you're trying to make IDL do something that Adobe applications (among others) already do very well and at a cheaper price. It is only worthwhile if you absolutely insist that your computer only ever runs one single program.

As I pointed out, IDL already generates perfectly good-looking CYMK every time it uses a colour printer driver. If I need more control than the printer driver allows me, any modern graphics or page layout program can turn out professional-quality separations. If I'm publishing a book or a thesis with colour plates the separations are done by the printer and I just have to supply my monitor profile and check a proof or two.

It would be helpful to make IDL able to use colour profiles and to warn about out-of-gamut colours, particularly when sharing visualisations with other users, but I don't want a half-assed implementation that I then have to second guess the whole time and I vastly prefer that IDL stick to its knitting and fix more serious problems.

I'm not trying to be argumentative. I'm genuinely baffled as to why you and David feel IDL has no CYMK abilities at all, and what exactly you feel should be added. I'm interested to hear about specific problems you have had.

Struan

Subject: Re: grayscale vs. color
Posted by [Martin Schultz](#) on Tue, 23 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Struan Gray wrote:

>
> Martin Schultz, martin.schultz@dkrz.de writes:
>
>> it is sure frustrating if, after months of
>> reiteration, your oh-so-beautiful plot can't
>> be used for publication because of -- err,
>> yes, color handling ;=)
>
> What sort of problems are you running into? Out of Gamut colours?
>
> I print IDL-generated graphics on CYMK printers all the time,
> usually by including TIFFs in a layout or drawing program, or by
> making EPS files and sticking them in work-processing files. Usually

> the printer driver does a fine job of converting the colour space, but
> if I want to do it manually I just fire up Photoshop or Illustrator.
> The last thing I want is RSI wasting their programmers' time trying to
> compete with Adobe.
>
> Or am I missing something?
>
> Struan

who says they must compete? If they can license a bad editor, they
should be able
to license some software to generate CMYK. Perhaps they could save the
money for
the editor and officially use (X)Emacs instead - I still haven't
discovered 1/10th of the idlwave mode, I believe, but what I have
already seen is just great!

Martin

--

```

[[ Dr. Martin Schultz  Max-Planck-Institut fuer Meteorologie  [[
[[      Bundesstr. 55, 20146 Hamburg      [[
[[      phone: +49 40 41173-308      [[
[[      fax:  +49 40 41173-298      [[
[[ martin.schultz@dkrz.de      [[
[[
[[

```

Subject: Re: grayscale vs. color
Posted by [noymer](#) on Tue, 23 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

In article <MPG.1392fe41faec9681989b30@news.frii.com>,
davidf@dfanning.com (David Fanning) wrote:
> CMYK (and I
> mean *real* CMYK, not something half-baked) would
> be a welcome addition to the program library.

I'll second that!

- Andrew
noymer@my-deja.com

Sent via Deja.com <http://www.deja.com/>
Before you buy.

Hi Struan,

yep! I guess that was shooting a little too fast, but the ensuing discussion (i.e. mostly your series of comments) put it onto the right track. Although there may be workarounds (Liam), it still would be much preferable to see 24bit postscript colors produced by the postscript driver. And I can't see a major difficulty in providing a (linearly translated) CMYK output format in addition to RGB. True enough, RSI should not start dealing with all these nitty details of color adjustments etc., but I think one should be able to produce a postscript file that you can forward to your favorite professional print shop and they should be able to apply the necessary color corrections etc and get the right colors out. What appals me about Photoshop, Coreldraw etc. is that most of these are only available for Windows or Mac, so it is not just firing up another application if you sit on a unix system. And the learning curves are steep enough, although this is certainly also true for color handling in general (why would there be professional graphic studios otherwise?).

I definitively agree with you that IDL seems to lag behind its competitors in several fundamental ways, high ranking among these is more transparent color handling and the mapping inconsistencies. From what I have seen from the object graphics so far, this seems a much better implementation - so perhaps they can at some point replace all direct graphics stuff with procedure interfaces to the object graphics routines? I am waiting for the IDLgrMAP object ...

Yes: Let them do more important stuff!

Cheers,
Martin

Struan Gray wrote:

```
>
> Martin Schultz, martin.schultz@dkrz.de writes:
>
>> who says they must compete? If they can license
>> a bad editor, they should be able to license some
>> software to generate CMYK.
>
> They are competing in the sense that you're trying to make
> IDL do something that Adobe applications (among others) already
> do very well and at a cheaper price. It is only worthwhile if
> you absolutly insist that your computer only ever runs one single
```

> program.
>
> As I pointed out, IDL already generates perfectly
> good-looking CYMK every time it uses a colour printer driver. If
> I need more control than the printer driver allows me, any modern
> graphics or page layout program can turn out professional-quality
> separations. If I'm publishing a book or a thesis with colour
> plates the separations are done by the printer and I just have to
> supply my monitor profile and check a proof or two.
>
> It would be helpful to make IDL able to use colour profiles
> and to warn about out-of-gamut colours, particularly when sharing
> visualisations with other users, but I don't want a half-assed
> implementation that I then have to second guess the whole time
> and I vastly prefer that IDL stick to its knitting and fix more
> serious problems.
>
> I'm not trying to be argumentative. I'm genuinely baffled as
> to why you and David feel IDL has no CYMK abilities at all, and
> what exactly you feel should be added. I'm interested to hear
> about specific problems you have had.
>
> Struan

--

```

[[ Dr. Martin Schultz  Max-Planck-Institut fuer Meteorologie  [[
[[      Bundesstr. 55, 20146 Hamburg      [[
[[      phone: +49 40 41173-308      [[
[[      fax: +49 40 41173-298      [[
[[ martin.schultz@dkrz.de      [[
[[

```

Subject: Re: grayscale vs. color
Posted by [Struan Gray](#) on Wed, 24 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Andrew, noymer@my-deja.com writes:

> So every time I make a change I have to go into
> IDL _and_ into the GIMP?

Only if your monitor can't be colour calibrated in any sense at all, which since you say "GIMP" could well be true. But then you're going to have a very hard time generating reliable CYMK output in any case.

I do have two displays which always seem to throw images off-balance. They are both flat panels (a Powerbook and a SGI 1600), and I can't prep critical work on them with any program, even those with very sophisticated CYMK implementations.

With all our cathode-ray tube monitors I am able to set them up so that what IDL spits out of the printer is highly predictable. With the better monitors the match is very good. I only *need* to use Photoshop et al when dealing with off-site printers where I want to preview the look of particular pantone ink sets. I would be interested to know what sort of print jobs you are doing which are simple enough in terms of page layout to be done in IDL without driving you nuts, but sophisticated enough in their use of colour to require seamless CYMK integration.

Colour-seperations are not rocket science, and IDL could do them with one hand behind it's back while simultaneously playing the fiddle and dancing the Lambada. The hard part is defining the colour spaces you're translating to and from, and doing so accurately enough to make overriding the printer's default settings worth the trouble. Then making the whole thing cross-platform adds extra headaches and you end up with a lot of extra special-case programming which distracts from more important problems.

We're talking about a multi-thousand dollar data analysis program, extensively used by the world's premier remote sensing and geophysical labs, which still has problems plotting data at the North Pole and gets confused and upset when it tries to grasp the concept of the International Date Line. Blocking up on saturated greens pales into insignificance.

Struan

Subject: Re: grayscale vs. color
Posted by [promashkin](#) on Wed, 24 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Struan Gray wrote:

** snip **

> Blocking up on
> saturated greens pales into insignificance.

I am sure there are users out there who would say, heck with the pole gaps and dateline, I need my 1-variable plot to come out right. For many of us, a toothache draws more attention than a plain crash overseas.

Cheers,
Pavel

Subject: Re: grayscale vs. color
Posted by [noymer](#) on Wed, 24 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

In article <8gg2id\$r20\$1@news.lth.se>,
Struan Gray <struan.gray@sljus.lu.se> wrote:
> Andrew, noymer@my-deja.com writes:
>
>> So every time I make a change I have to go into
>> IDL _and_ into the GIMP?
>
> Only if your monitor can't be colour calibrated in any sense
> at all, which since you say "GIMP" could well be true. But then
> you're going to have a very hard time generating reliable CYMK
> output in any case.
>

Hi Struan,

We seem to be on different wavelengths. Or is that different
color schemes? Anyway, check out

<http://www.gimp.org/>

and get back to me on that one, eh?

- Andrew
noymer@my-deja.com

Sent via Deja.com <http://www.deja.com/>
Before you buy.

Subject: Re: grayscale vs. color
Posted by [davidf](#) on Thu, 25 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Andrew (noymer@my-deja.com) writes:

>> I can't decide if you're arguing with me or asking for
>> advice. If you used complete sentences it might aid
>> communication.

>
> you in suspense

It's a minimalist thing some of the younger folks are into. But it's a slippery path and soon leads to nose rings and tattoos in unmentionable places.

Cheers,

David

P.S. Let's just say I happen to have a teenager in the household. :-(

--

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

Subject: Re: grayscale vs. color
Posted by [Struan Gray](#) on Thu, 25 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Struan Gray, struan.gray@sljus.lu.se writes:

> Paint Shop Pro, Photoshop LE

Whoops. I forgot that Andrew is dealing with line art. Illustrator and Freehand are the expensive solutions. Corel Draw (ugh) sort of gets colour right, and Canvas (www.deneba.com) is a good competitor to all at a very resonable price.

Struan

Subject: Re: grayscale vs. color
Posted by [Struan Gray](#) on Thu, 25 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Andrew, noymer@my-deja.com writes:

> We seem to be on different wavelengths. Or is that different
> color schemes? Anyway, check out

>
> <http://www.gimp.org/>
>
> and get back to me on that one, eh?

I can't decide if you're arguing with me or asking for advice. If you used complete sentences it might aid communication.

GIMP's colour management and CYMK capabilities are almost as limited as IDL's. The manual is clear and helpful, but the the program itself can't actually do much. Read the prepress part of the manual, it explains very clearly why you're having problems and gives solutions of varying levels of complexity and expense.

If you don't have access to any other programs to prep your output you'll have to make a proof print locally, send it to the printers, and tell them to match the general look or to tweak the colour balance so that specific colours are neutral grey.

If you're working on a PC, Paint Shop Pro is highly recommended by photographers and commercial printers I know as a cheap solution that gets colour right. A final option would be to look around for a copy of Photoshop LE, which comes bundled with many scanners.

Struan

Subject: Re: grayscale vs. color
Posted by [noymer](#) on Fri, 26 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

In article <8glmsc\$rs0\$1@news.lth.se>,
Struan Gray <struan.gray@sljus.lu.se> wrote:
> Andrew, noymer@my-deja.com writes:
>
>> you in suspense
>
> I take it that's noymerbonics for "Thank you for all the helpful
> and illuminating advice, I have printed it out and will read it each
> night before I go to bed in order to remind myself how little I know
> and how grateful I am that people like Struan exist on this
earth."

Something like that.

- Andrew
noymer@my-deja.com

Sent via Deja.com <http://www.deja.com/>
Before you buy.

Subject: Re: grayscale vs. color
Posted by [Struan Gray](#) on Fri, 26 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

Andrew, noymer@my-deja.com writes:

> you in suspense

I take it that's noymerbonics for "Thank you for all the helpful and illuminating advice, I have printed it out and will read it each night before I go to bed in order to remind myself how little I know and how grateful I am that people like Struan exist on this earth."

Struan

Subject: Re: grayscale vs. color
Posted by [noymer](#) on Fri, 26 May 2000 07:00:00 GMT
[View Forum Message](#) <> [Reply to Message](#)

In article <8gipud\$6e0\$1@news.lth.se>,
Struan Gray <struan.gray@sljus.lu.se> wrote:

> I can't decide if you're arguing with me or asking for
> advice. If you used complete sentences it might aid
> communication.

you in suspense

- Andrew
noymer@my-deja.com

Sent via Deja.com <http://www.deja.com/>
Before you buy.
