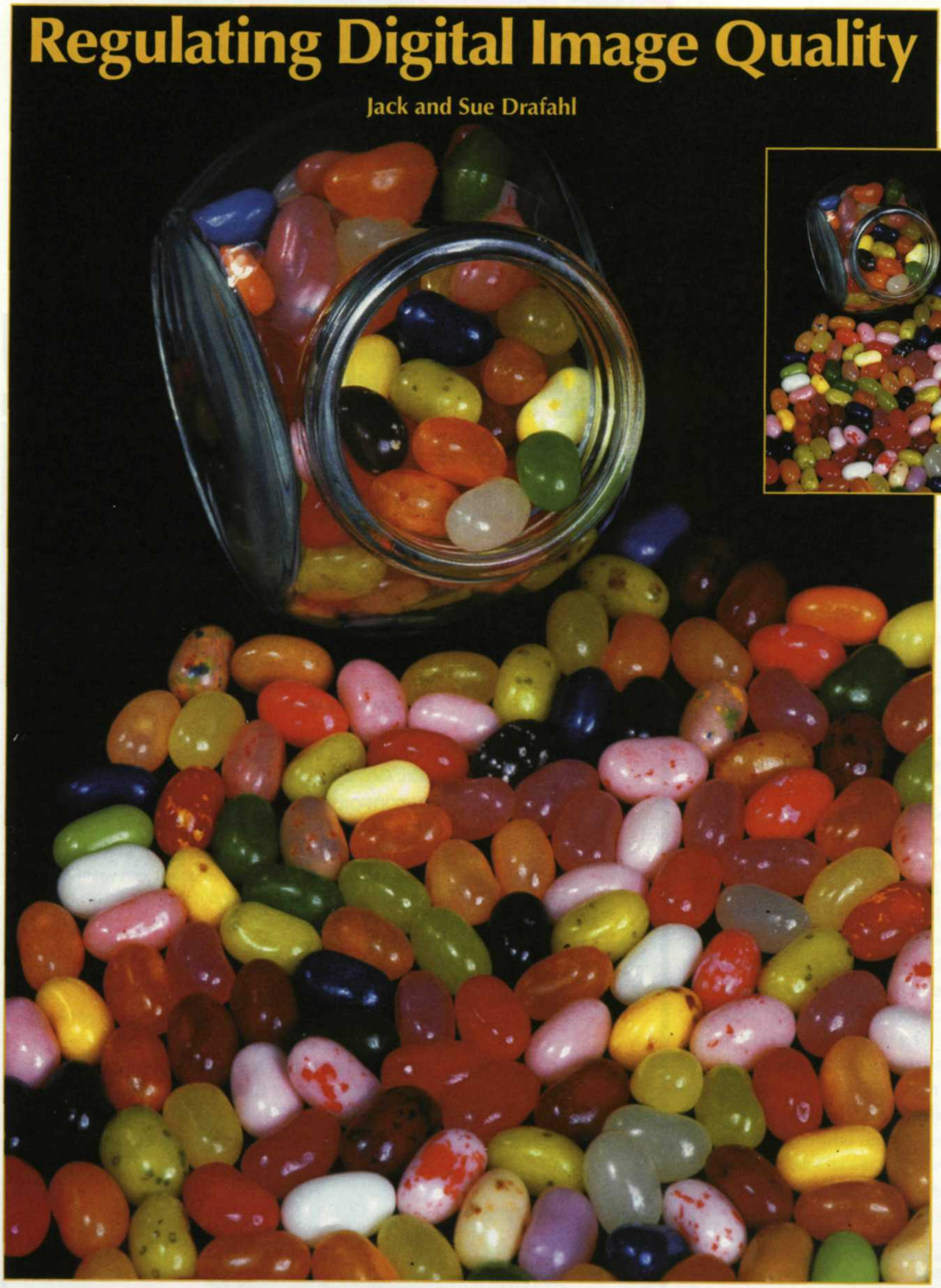
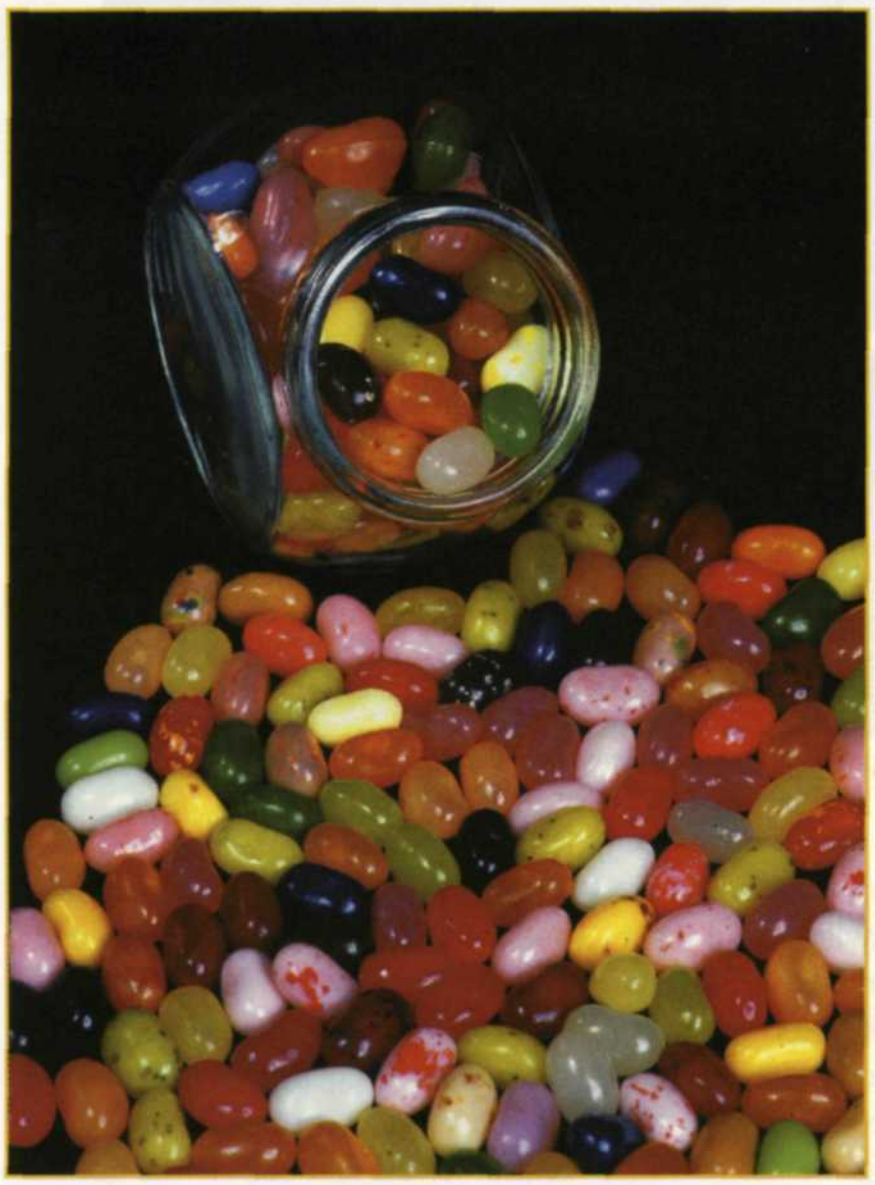
Regulating Digital Image Quality

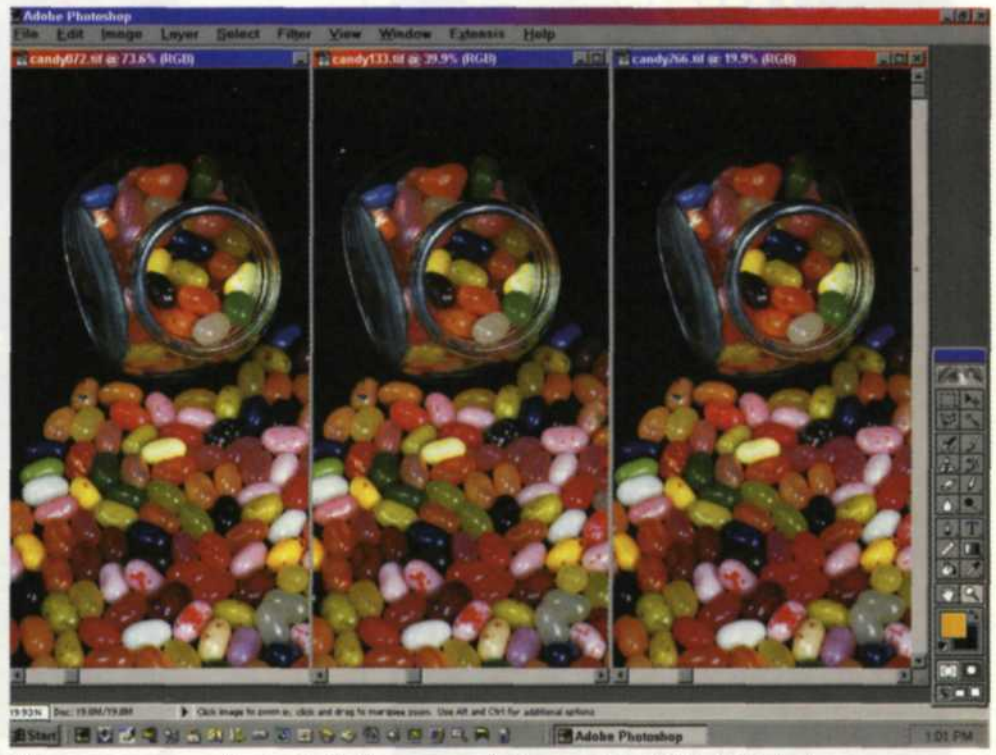
Jack and Sue Drafahl



Large image scanned at 266 dpi, inset images scanned at 72 dpi.



Above, image scanned at 133 dpi



Above, screen shot of all three resolutions, 72, 133, 266dpi
Below, zoomed in version

The best that you can offer may not always be the best option to choose. A lower resolution scan and print can save customers who are not looking for professional quality time and money. The key is determining which customer wants which quality.

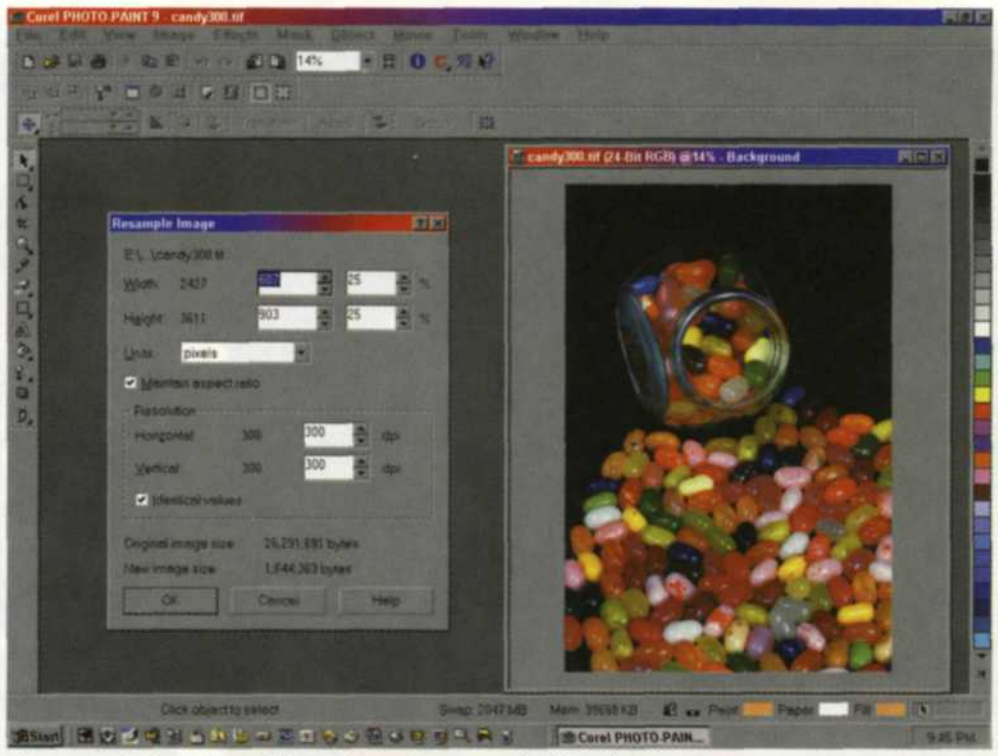
QUALITY IS IN the eye of the beholder. The perception of quality is totally subjective. What one thinks is acceptable may not even come close to another's expectation. It is true that advancements in technology have resulted in better hardware and software that raise digital image quality to the level of the traditional photo prints.

The problem is that you don't always need the highest quality possible. You need to match the quality level with your end product.

How do you regulate image quality in the digital lab? Realistically, the level of digital quality is a balancing act between time and money. The more time it takes to produce an image, the more money it costs to make. This in turn must be passed on to the customer. This means setting up lab standards for digital quality to match customers' needs.

Since each region of the United States has a different economy, we can't suggest a cure-all, but we will show you some guidelines.

The first step in setting up a quality standard, is to analyze your customer base. Look at the proportion of amateurs versus professionals and the percentage of work each group brings to the lab. Generally the amateur group will accept lower quality standards to get a good price, while many pros expect the



Screen shot of Corel Paint 9 and re-sample function
Corel Paint 9 can resample an image upon loading the file.

best your equipment can provide.

Evaluate the quality level your input equipment can import into the lab. Run samples of each quality level on the various output devices you use. Make samples for both your customers and lab personnel to use as a guideline.

It is vitally important that your lab personnel have a good working knowledge of the dpi and pixel resolution required for quality output. The manager or lab supervisor should evaluate the time and money it takes to produce each level of quality to competitively price the services.

In a traditional lab, the difference in time and costs do not vary much when changing quality levels. A piece of printing paper is a piece of printing paper. When you expose the paper, you don't have different levels of light quality hitting the paper. Longer printing times do not provide better results.

On the digital side, a large file and a high dpi inkjet paper can take considerably longer to print. Since time is money, these prints will be expensive. It is vital that you evaluate each level of quality and its price tag.

At first, we didn't like providing a lesser quality product to some customers and higher to others. What we quickly realized is that if we matched the quality of the product to the customers' needs, they were happy with both the product and the price. If they were happy and satisfied, then so were we.

The key to customer satisfaction is determining the quality input necessary to match the level of quality that they require for the end output. The quality of the image is directly proportional to the file size of the original scan. This file size is determined by the final page size at a specific dpi.

We devised a simple standard that seems to work, at least most of the time. These numbers represent the working numbers attached to the file itself at the time of the scan. Don't confuse these numbers with the dpi output of you inkjet. The inkjet will interpolate the data if a different page size is necessary.

Low quality scan—final page size at 72 dpi.

Medium quality scan—final page size at 133 dpi.

High quality scan—final page size at 266 dpi.

This may seem confusing because you will see slide film scanners advertising that they scan at 2700 dpi. You need to remember that this dpi is at 100% or 24x36mm. In order to scan for a final output to an 8x10 print, the dpi would proportionally decrease.

The original can be scanned at a dif-

ferent page size and dpi as long as the resulting file size matches the final requirement. Scanners list the dpi, page size and resulting file size, so you can mix and match. If you had a job that would print as an 8x10 at 133 dpi, the resulting scanned file size would be 4.05MB. If you wanted higher quality at 266 dpi for the 8x10, then the file size would increase to 16.2MB. Simply set the desired dpi and page size and you're in business.

The best scenario is to bring an image into to the system at the size needed for the job. If you can't do this, then you will need to re-sample the image to the correct size in your editing program. When you re-size any image, the program interpolates the image to the new size by creating new pixels for those it replaced. In most cases the image quality decreases considerably.

One way to bring back the quality is by using the sharpening tool. You can actually use either the standard sharpening tool or the un-sharp mask, whichever you feel most comfortable using. If you have to change the resolution a second time, it is best to go back to the original, rather than re-sampling and sharpening the image twice.

This brings us to the actual dpi output printer resolution. Most printers have two or three levels of output quality, and the one you select depends on the needs of your customer base. Remember that this dpi only relates to the printing pattern created by your printer, and does not relate to the dpi of the output image file.

The whole concept of mixing and matching digital image quality to the desired output quality level is confusing. It all boils down to matching the end product to the customers' perception of quality. If they are happy with the results, you will be pleased—because you will have a repeat customer.

Jack and Sue Drafahl are digital imaging experts and professional photographers based near Portland, Ore.