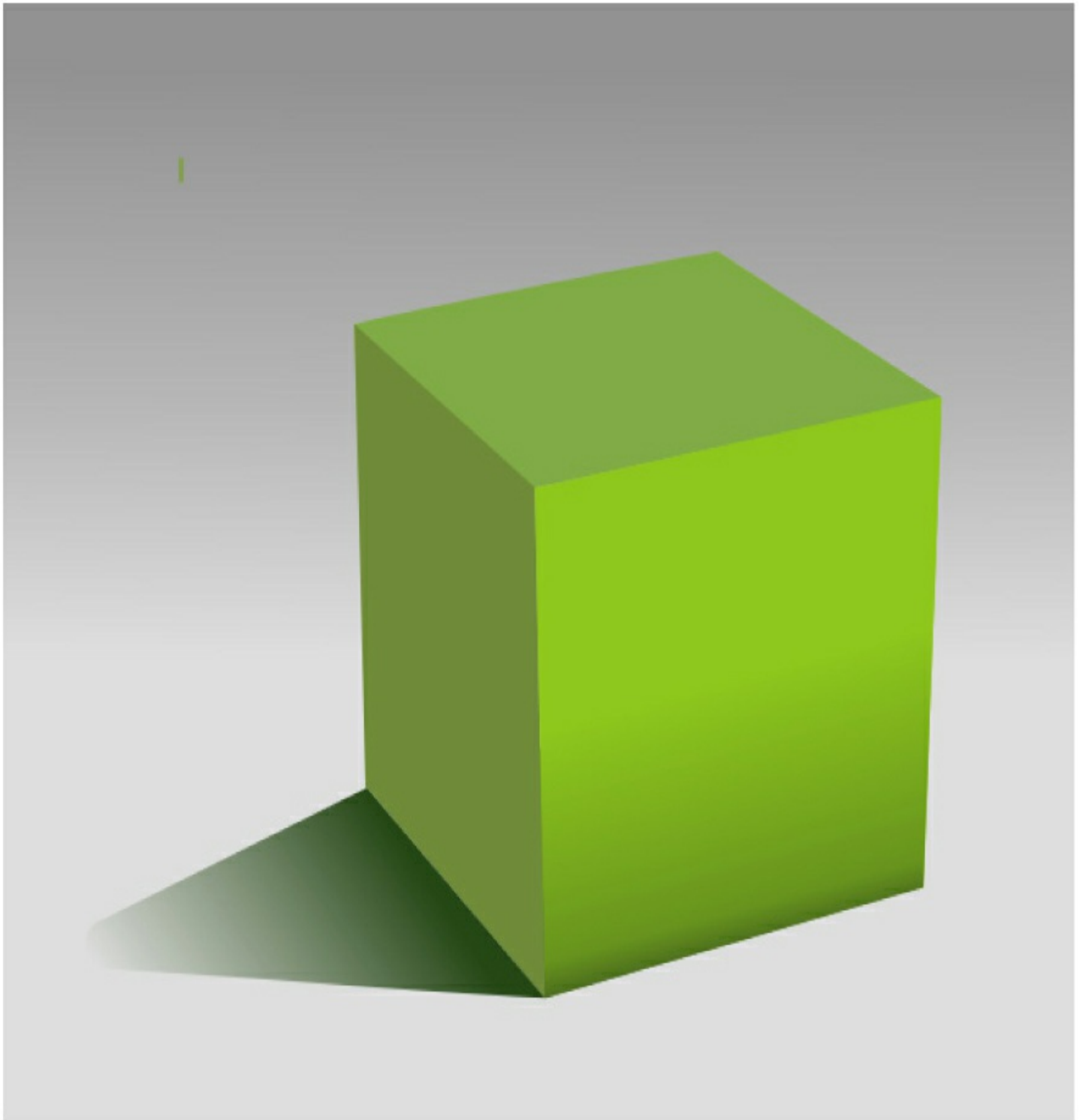


19 Transparencies and Shadows

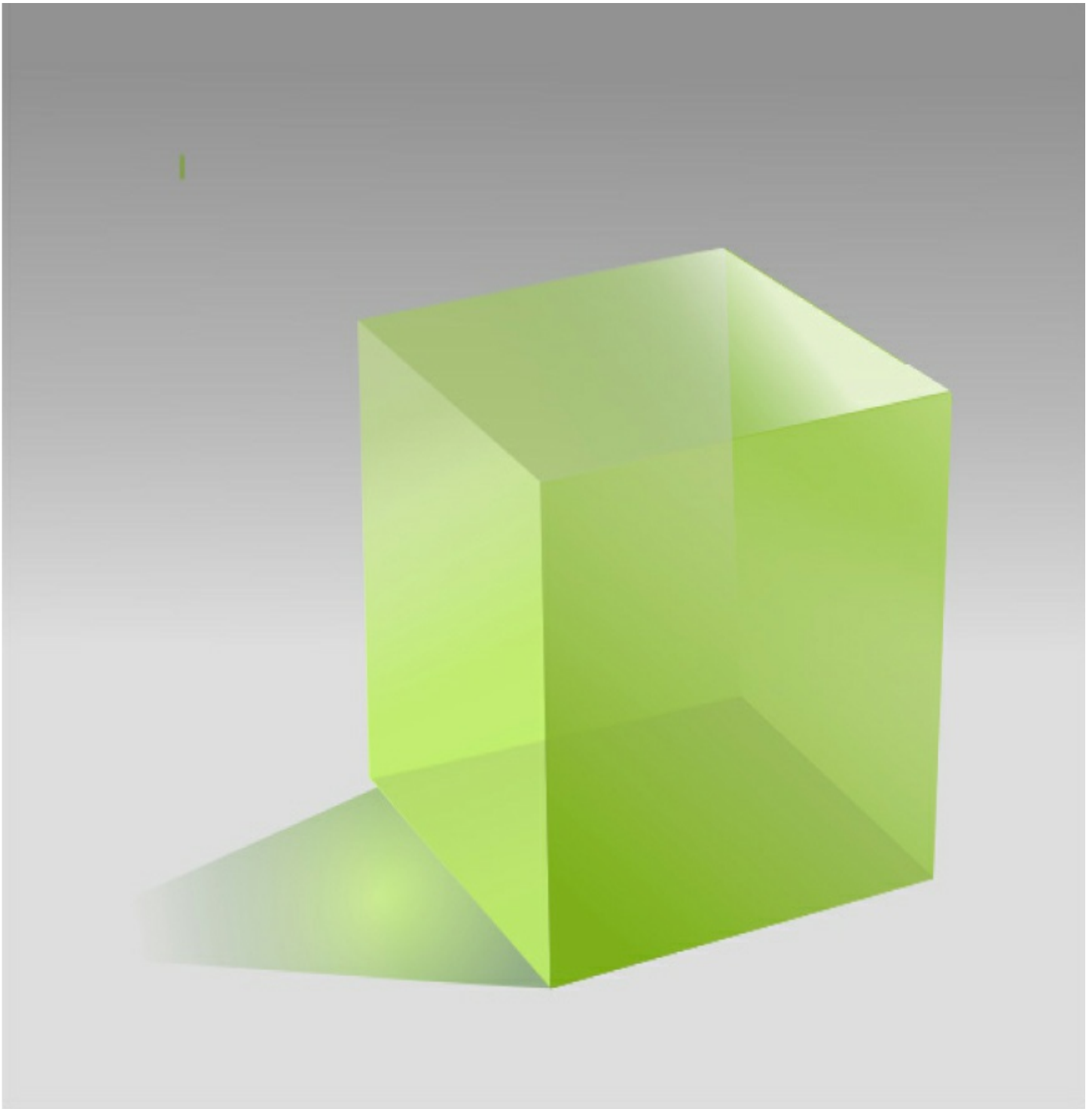
In our endeavors to make drawings more complete—to give the audience as detailed an illustration as possible—we rely on not just the silhouette of an object and its fill and texture, but also how an object *interacts* with its surroundings. There's more than meets the eye when it comes to replicating a scene or even a simple object. Wherever you have a light source, a solid object on a solid surface casts a shadow in the opposing direction. Even partially transparent objects leave their mark on a surface when illuminated from a direction. Similarly, what would our world be like if everything was 100 percent opaque? Sunglasses would be an impossibility, a room with a view would be false advertising, and even ice cubes would look suspicious! This chapter takes you through the CorelDRAW tools that assist you in creating transparent shapes and shadows cast by objects.

The Importance of Objects Interacting with the Scene

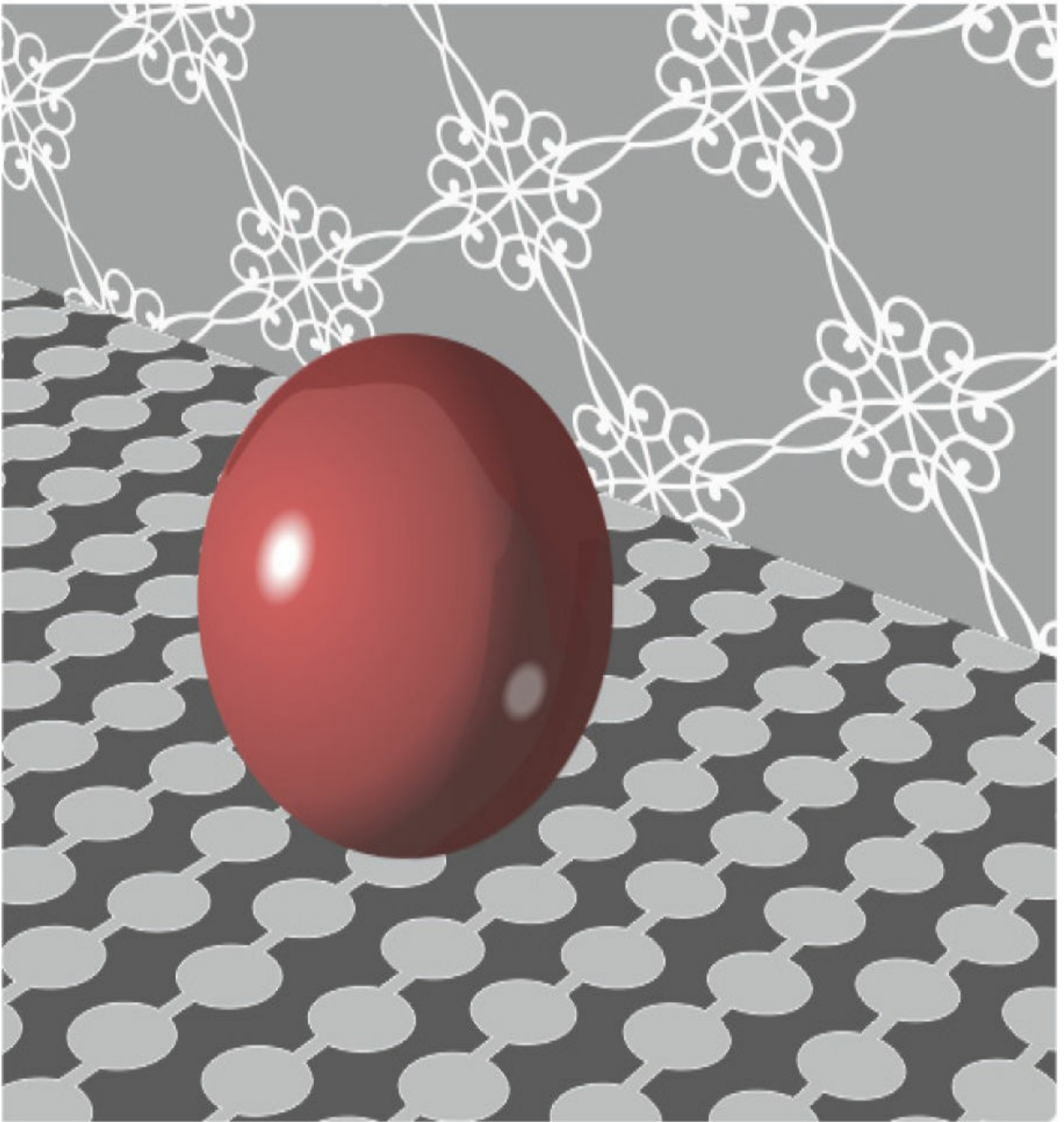
Here are a couple of illustrations to sell you on the importance of real-world phenomena. In the first illustration (open the file `glass cube.cdr` if you'd like to see how it was created), you can see a cube that's being illuminated from the right. There are no surprises, nothing of special interest, nothing being said artistically about a cube resting on a surface. In fact, the most interesting thing about this illustration is the cube's shadow—its softness contrasts with the hard lines of the cube, but you can do a *lot* better than this.



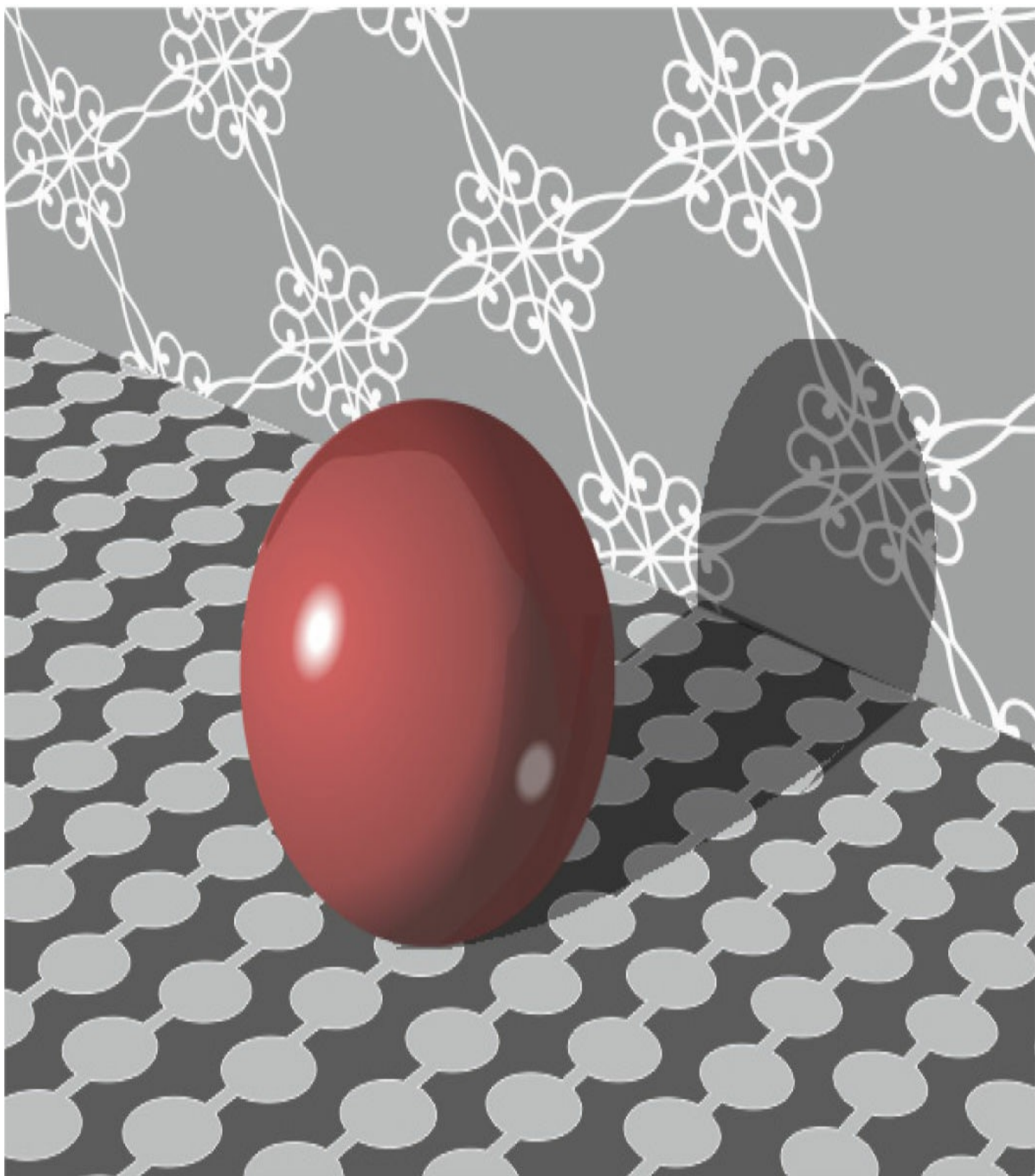
Here's the same cube, but it's made out of something; it's not simply covered with a texture (which is not necessarily a bad thing; see [Chapter 12](#)). As you can see, it's a material through and through. It might not be immediately obvious, but when you create a partially transparent object, you can see both its front and its back side, thus providing you with a more complete image of what you've drawn. If you create your drawing in a $\frac{3}{4}$ view, looking slightly downward, you can see all six faces of the cube. With solid cubes, the maximum number of sides viewable from a single angle is three.



Notice also that even a semitransparent object casts shadows. And shadows, in turn, aren't always 100 percent opaque; you can usually see details in the surface beneath the shadow. Shadows anchor a shape to the ground; they give you a visual clue as to where they are located relative to other objects in the scene. In the illustration here, the ball is not casting a shadow. No, it's not a vampire, but it's not a very complete illustration of a graphical idea, either. Is the ball floating? How close is it to the wall?



The answers to both these questions is immediately solved in this next illustration, where one of CorelDRAW's drop shadow effects was broken from the control object, converted to curves, and then split so the two pieces could give a reference point for the ball on both the floor and the wall. You can take a look at the pieces that make up the illustration by opening [Shadows.cdr](#).



If the author has done his job, you're now sold on exploring how to create transparent shapes and shadows using DRAW in this chapter.

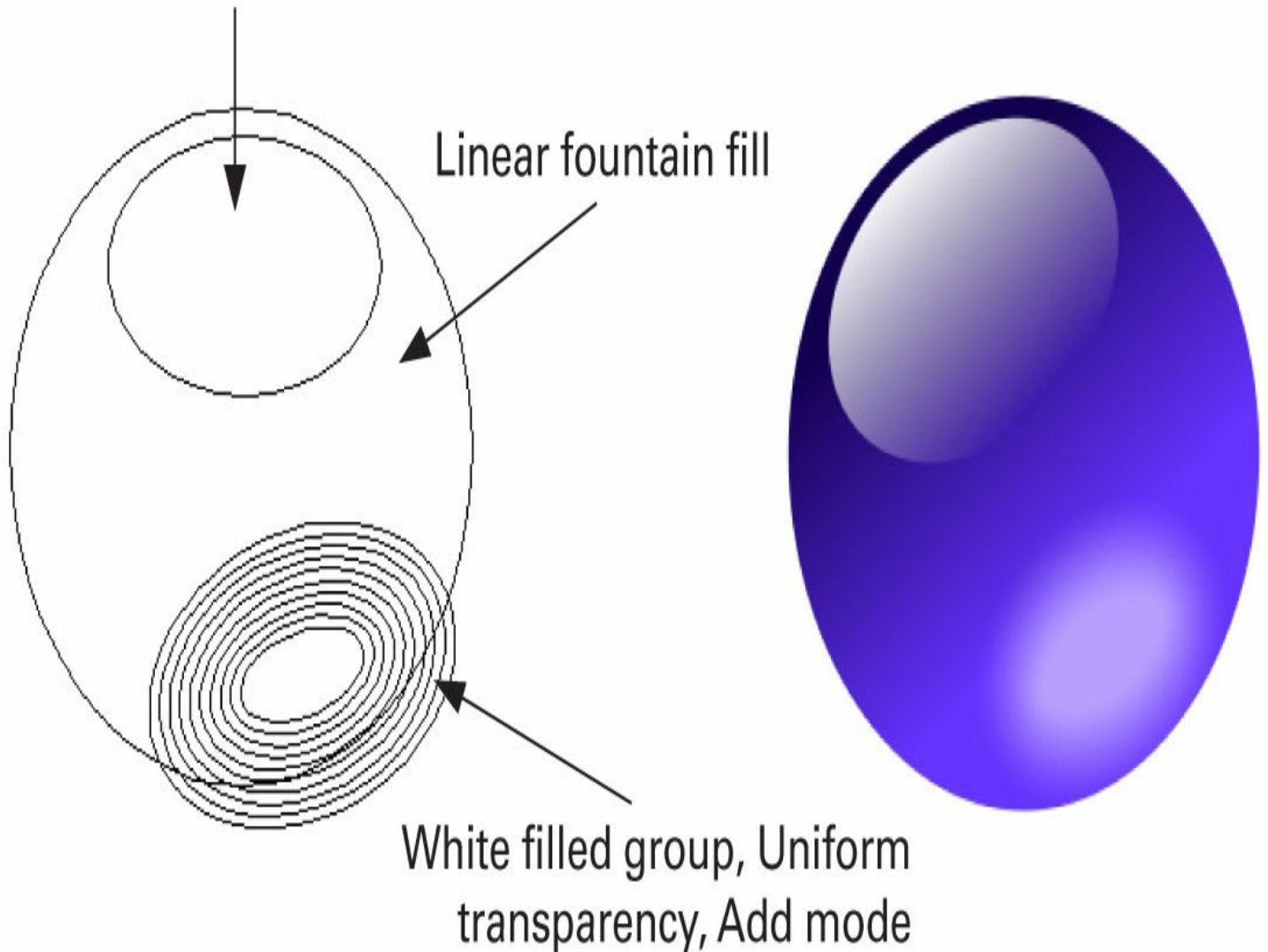
Clearing Things Up with the Transparency Tool

Transparency is an effect CorelDRAW users have leveraged for many years to illustrate scenes that have a very photorealistic look. The Transparency tool is quite different to use than the Transparency lens, as is the effect you achieve. You have *directions* for transparency such as Linear and Elliptical and also various operators (styles of transparency) available on the Property Bar to set how a partially transparent object interacts with the object below it.

One thing to keep in mind when working with transparency in a design is that this is the way you blend colors between objects. That's it; your work doesn't benefit from a totally transparent object—there has to be *some* influence from the object to which you apply transparency, and it's usually color. In a way, to think about transparency is to think about color blending.

One of the keys to creating amazing artwork using the Transparency tool is *the fill* that a semitransparent object has; in addition to uniform fills, fountain and pattern fills can also take on transparency. You put fills and transparency together, and you're talking seriously sophisticated compositions! Another key lies in how you approach a drawing in which you plan to feature partially transparent objects. To illustrate a real-world object, you need a few *nontransparent* objects in such a drawing, so don't overindulge in transparency when only certain parts of an illustration need the effect. In the illustration here, you can see what is today a fairly common button for a web page; it suggests glass. On the left, you can see a Wireframe view—not many objects went into this fairly convincing drawing of a glass button.

White fill, Linear transparency, Normal mode



Using the Transparency Tool and Property Bar

The transparency effects discussed next are applied using the Transparency tool located in the Toolbox; the icon looks like a checkerboard, and in this version of the CorelDRAW Graphics Suite (CGS), it's a lone button and is not grouped with other effects.

While the Transparency tool is selected, the Property Bar displays all options to control the transparency effect. These options, as shown in [Figure 19-1](#), can be used along with the object's interactive markers to produce phenomenally complex and fascinating compositions.

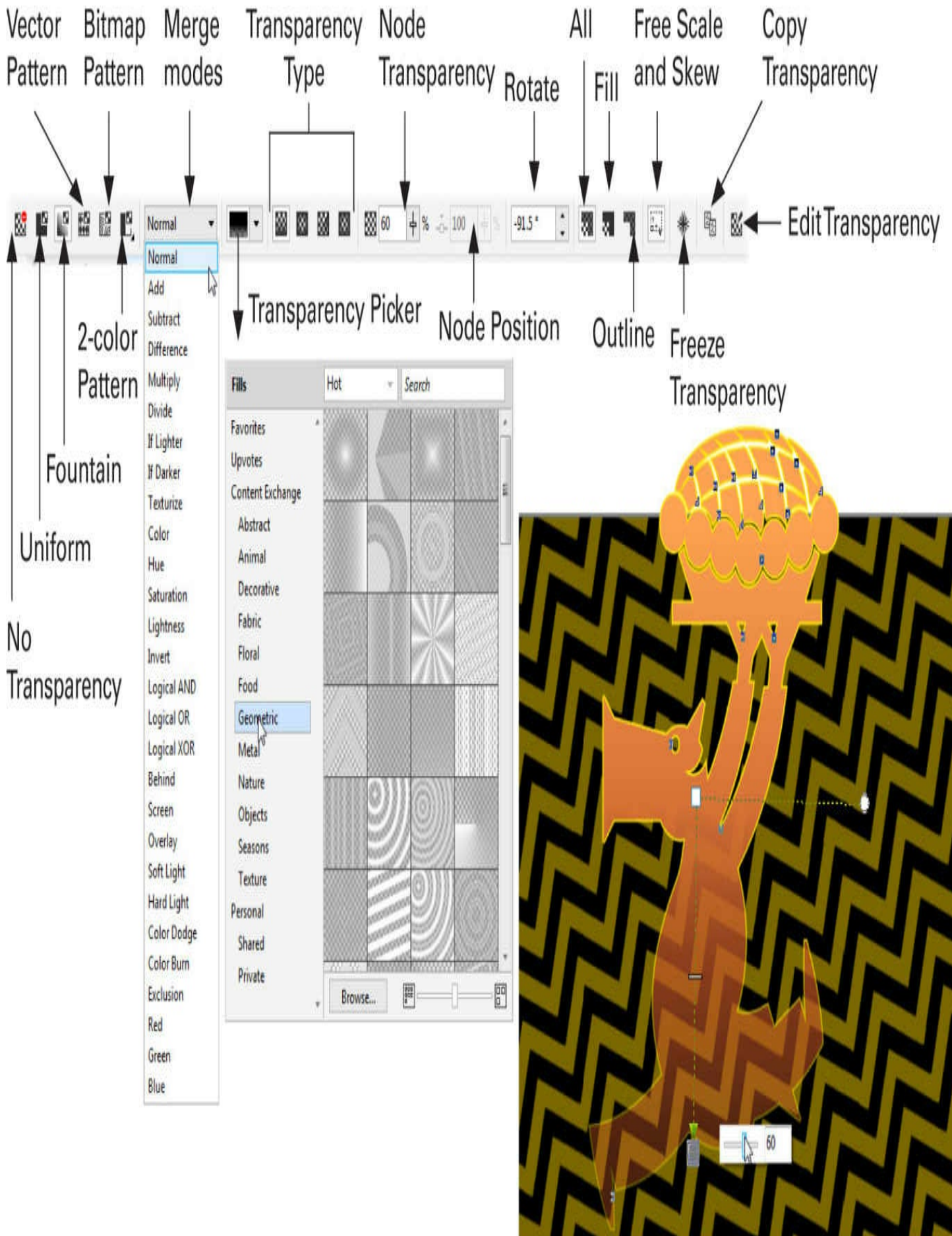


FIGURE 19-1 Use the Property Bar to customize a transparency object.

Often, the most rewarding way to discover and gain control over a feature in CorelDRAW or any program is to dive straight in. The following tutorial might seem a little challenging because an explanation of the transparency options is provided on the fly, sort of like getting directions *while* you're driving, but you might want the power of transparencies at hand *right now*, as we all do with valuable stuff. Follow along here to create a fairly realistic composition of a child's marble; transparency will take care of the shading and the highlights. This might remind you a little of [Chapter 3](#)'s example, but the following tutorial is more of a comprehensive study of *how* transparency works in CorelDRAW. You can check out the Marble.cdr document to see and take apart the components at any time.

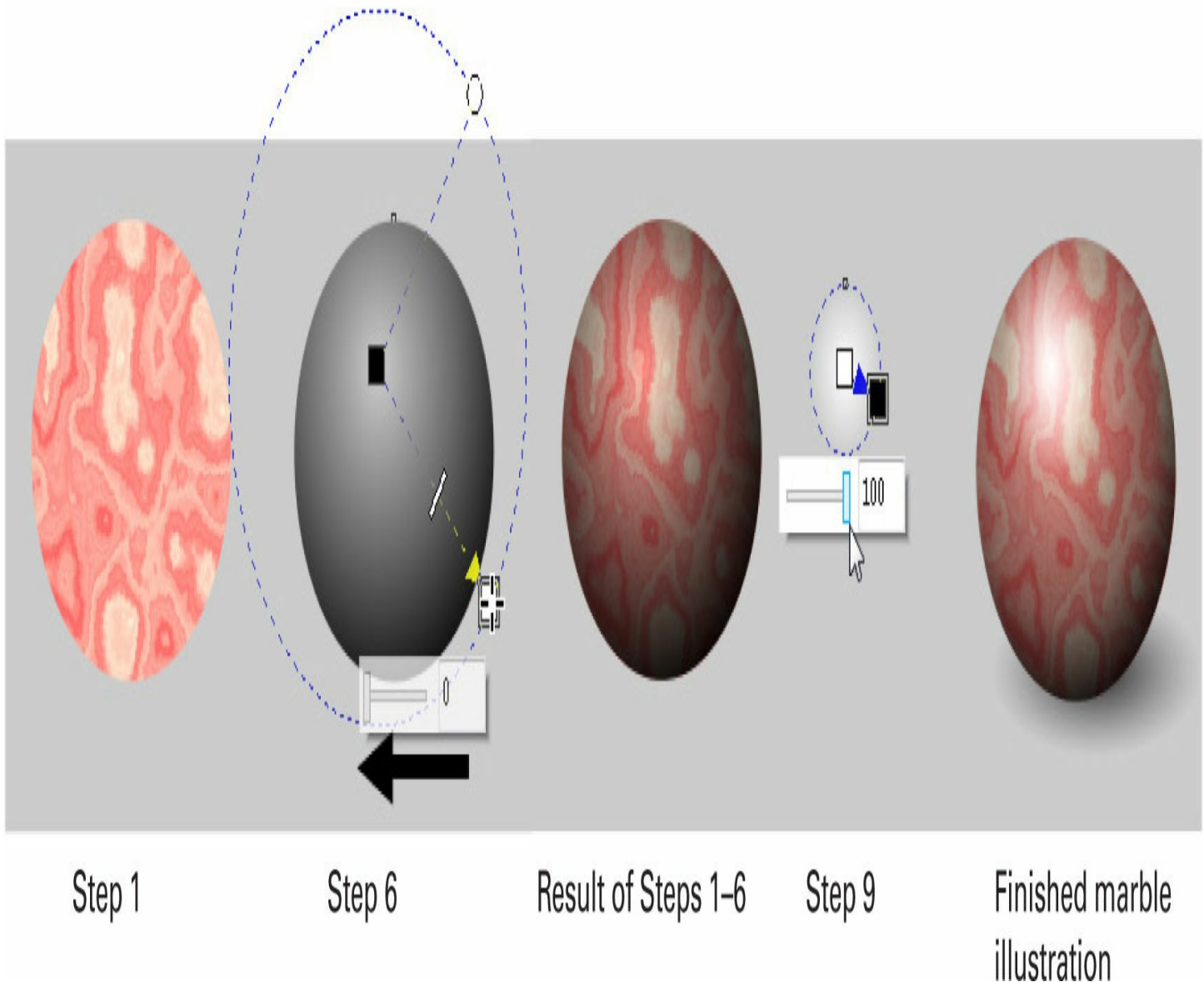
Creating a Dimensional Drawing Through Transparency

Tutorial

1. Create a circle (choose the Ellipse tool and then hold CTRL while you drag). Give it a Bitmap Pattern fill by first choosing the Fill tool. Click and hold on the Two-Color Pattern fill to display the Texture Fill icon on the Property Bar, click the Samples button (there is no need to click-hold to reveal the other categories of samples), and then choose the third pattern on the top row of the Fill picker. The texture is a pink agate-style fractal texture, perfect for making a kid's marble.
2. With the Pick tool, select the circle. Press CTRL-C and then CTRL-V to copy a duplicate of the circle directly above the original. Click the black color swatch on the color palette to give this duplicate a Uniform black fill.
3. Choose the Transparency tool. Click the Fountain Transparency button on the Property Bar.
4. Choose Elliptical Fountain transparency from the Property Bar and then choose If Darker from the Operator list on the Property Bar.
5. Click-drag the white transparency node (the Start node) a little toward 10 o'clock. Now, this transparency is going exactly the opposite as intended: a white node represents 100 percent transparency but you need 0 percent transparency (a black-colored node). Fortunately, if you click over the white transparency node, a mini pop-up with a Transparency slider saves you the trip to the Property Bar. Drag the slider

from its current position at the far left to the far right for 100 percent transparency.

6. Click-drag the other node (the End node) to a position at about 5 o'clock on the edge of the circle object. Hover the cursor for a moment, and when the pop-up appears, drag its slider to the left, arriving at zero (0) transparency. Check out the illustration following Step 10 to get a better idea of where you should be now. The illustration of this marble tutorial is broken into individual objects, so you can better see the required steps. You'll see that the marble drawing is taking on some dimension and depth with this fountain-transparent object over it.
7. Create a circle that's about a tenth of the size of the original circle. Give it a white fill and no outline.
8. Set the Transparency Type to Fountain and the style to elliptical for the circle. Leave the Merge mode at the default of Normal.
9. The Start node should be in the center of the circle (click-drag it there if it's not), and it should be totally opaque (0 percent transparent), as indicated by white. If needed, use the pop-up slider to set it to 100.
10. Drag the End node to just inside the circle object; doing this ensures the object is 100 percent transparent at its edges, creating a perfect highlight object. Put it at the upper left of the marble drawing, and consider this a frenetic tutorial well done! See the following illustration if you haven't peeked ahead yet.



Setting Transparency Properties

If you have experience with CorelDRAW's Fill tool, you're 99 percent of the way to mastering the transparency fill types with the Transparency tool. Because transparency isn't the same as an object's fill, the following sections take you through some unique properties. You can leverage wonderful design potential by choosing your transparency type according to what you need to design.

Uniform Transparency

Uniform transparency is the default for objects to which you assign this trait; the object will feature a flat and even transparency value. The way this semitransparent object blends with underlying objects is completely predictable. For example, if you assign a red rectangle and then a blue rectangle with 50 percent (the default) transparency and overlap them, yep, you'll see violet in the intersection.



Tip The Uniform transparency type has no Start and End nodes over the object as the other types do.

Fountain Fill Transparencies

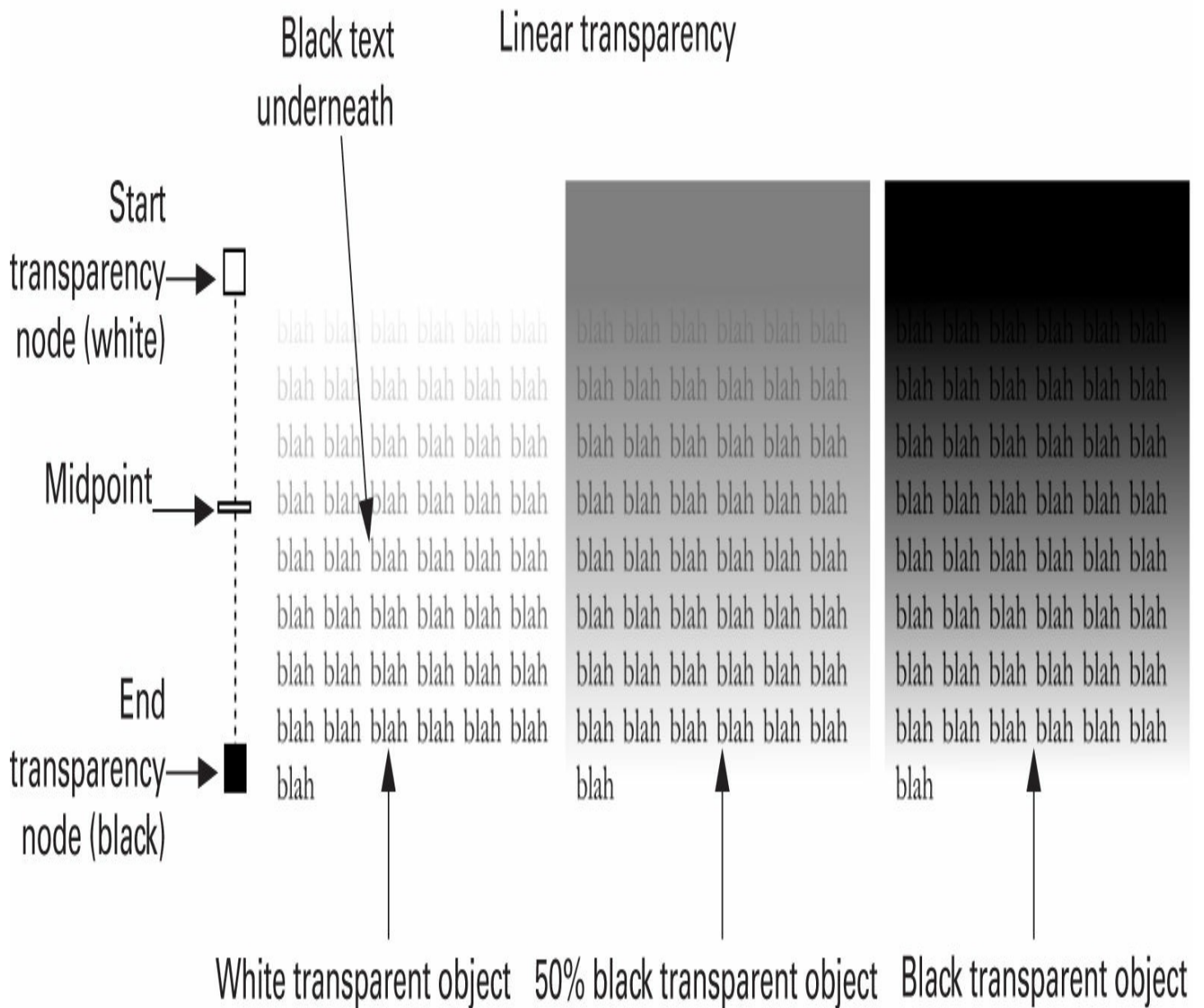
Transparent objects that use any of the fountain fill direction types are exceptionally powerful for illustration purposes, as you'll see in a moment. What governs the degree of transparency at the Start and End points is the control nodes—not only their position relative to the object underneath but also *the brightness value* of the markers. Fountain fill transparencies are driven by *any of 256 shades, from black to white*. Let's use the Linear transparency type; if you understand this type, all the others (Elliptical, Conical, and so on) will become obvious. When you click-drag using Linear transparency on an object, the Start node is white, indicating full opacity, and the End node is black, indicating no opacity at all.

Trick Number One in creating an elegant fountain fill transparency is to change the degree of opacity at the Start and End points, which you can do using three methods:

- Reposition the Start and End nodes using the Transparency tool. If you position the markers way outside of the object, the transition between full and no opacity will be gradual and the outermost parts of the transparent object will be neither completely opaque nor completely transparent if you do this.
- Change the brightness; the nodes can have any of 256 shades of black. Let's say you have the Start and End nodes exactly where you want them; you like the angle of the fountain fill transparency. But you don't want the End (the black node) to be 100 percent transparent. You click-drag a deep shade of black from the color palette and then drop it onto the black End node. The end of the transparency then becomes mostly transparent, but not 100 percent.
- Use the mini pop-up controls that appear next to a selected transparency node to change the transparency value, by dragging from 0 (opaque) to 100 (transparent).

Trick Number Two is to choose the transparency object's color—any color is acceptable, but because this physical CorelDRAW *Official Guide* is in black and white, only black, gray, and white are used here to influence the objects visually below the transparency object. Here's an illustration: some black Paragraph Text is on the bottom of the drawing page. On top of it is a rectangle. On the left, the rectangle is filled with white, and a Linear fountain fill transparency is click-dragged from top to bottom. The text appears to be coming out of a fog. In the center, a 50 percent black fill is then applied to the rectangle and a different visual effect is achieved—the Paragraph Text still looks like it's

in a haze, but more of it is legible toward the top. On the right, black is the fill for the rectangle, and now the top of the text is as illegible as the white rectangle example, but a different artistic sense of drama has been achieved. You now know two different methods for shading with fountain-type transparency fills: change the position of the transparency nodes, and change the color of the transparency object.

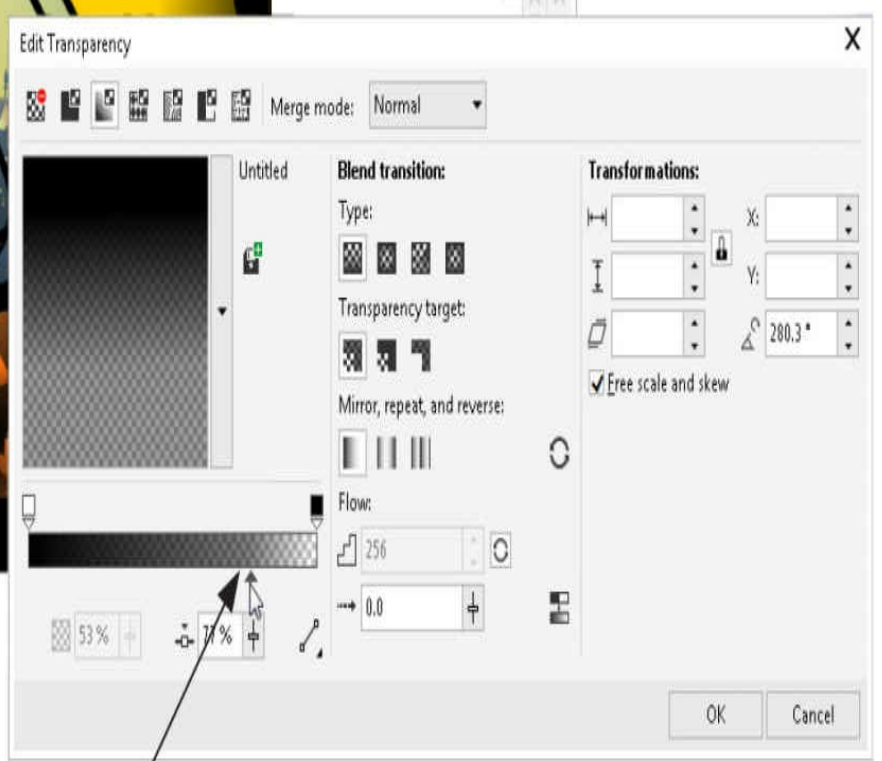
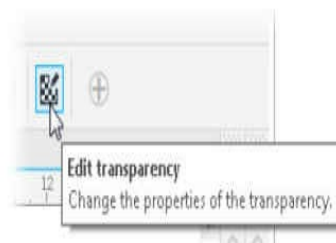


Tip Although the transparency nodes can only be shades of black and white, the object *taking* the transparency can certainly be in color, or have any of the available fills in CorelDRAW, including bitmap patterns and fountain fills.

New Controls and Locations for Transparency Options

You still have two approaches to modifying an object's transparency in DRAW—using the Property Bar controls and the interactive markers (or nodes) on an object—but users of previous versions might be a little disoriented when trying to go through the same old moves to accomplish something. And for new users, the additional transparency effects were designed to be intuitive and easier to use than in previous versions. Here are a few of the more frequently used modification features, what they do, and where they are located:

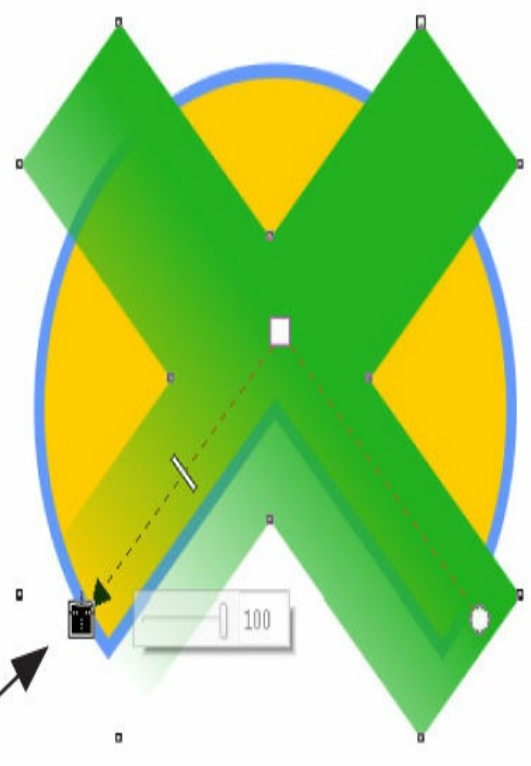
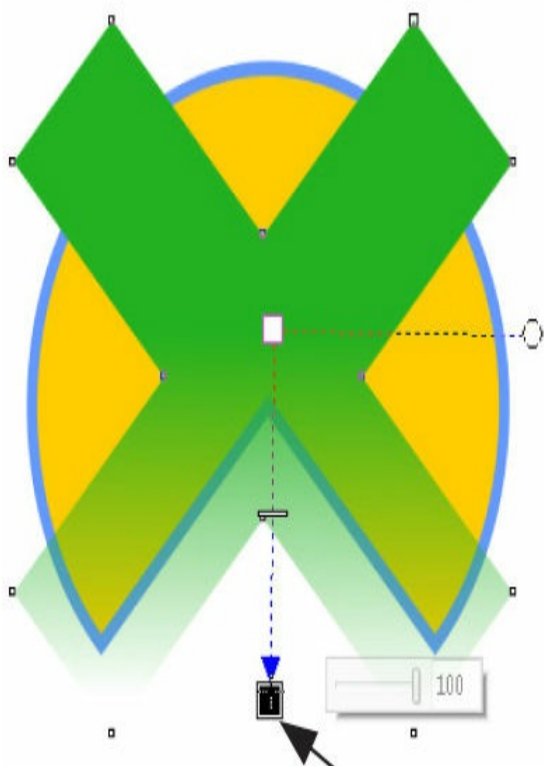
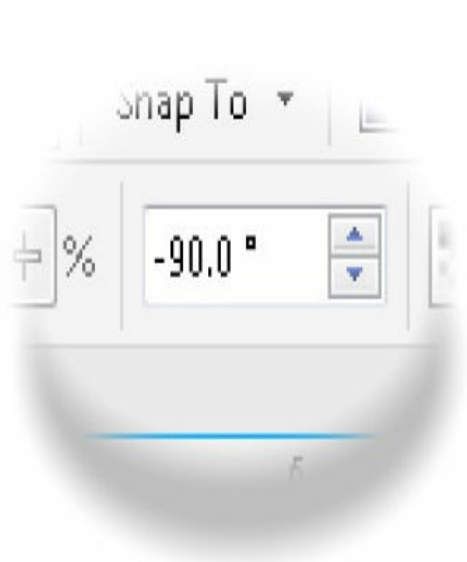
- **Midpoint slider** This slider controls where the 50 percent point in a transparency is located. It does *not* indicate where an object is 50 percent transparent, but it instead sets a relative 50 percent breakpoint because, as mentioned earlier, you can set the Start and End nodes to any brightness value you like. The midpoint slider is located on the Start-End line on the transparency object when selected. This feature is no longer on the Property Bar, but you can access by clicking the Edit Transparency button on the Property Bar, and then you can click-drag the midpoint, as shown in this illustration, to any point between the Start and End points.



Midpoint slider



- Tip** If no object is selected and you want to make any object partially transparent, the Transparency tool works as a selection tool in addition to controlling the transparency nodes. With the tool selected, click once to select the object to which you want to apply transparency, and then click-drag to create a Linear Fountain transparency that can then be modified using the Property Bar controls.
- **Rotate** Some but not all transparency types will show any difference when you rotate their orientation. For example, a Linear Fountain transparency creates a different look when you rotate its orientation, but a perfectly circular Elliptical transparency, or 2-color transparency fill in an object, will look the same when you rotate it. You can rotate a transparency in three ways: by directly dragging on the End node above the object in the workspace, by changing the value in the Rotate spin box on the Property Bar, and via the Transformations area of the Edit Transparency dialog. The following illustration shows an example of a Linear fountain fill with its transparency attribute changed.

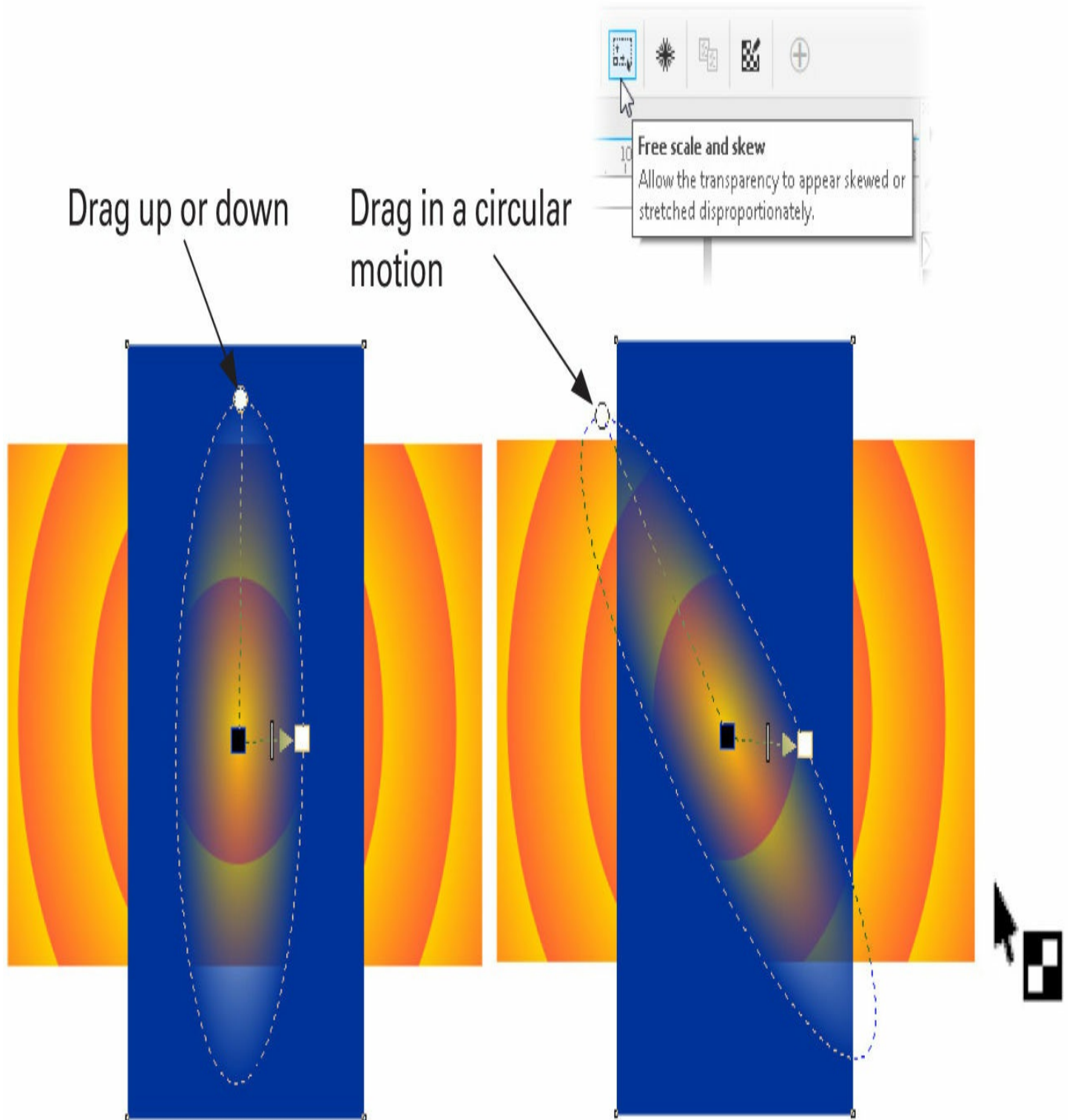


Click-drag
(CTRL-click-drag to constrain the rotation angle)



Tip By default, when you hold CTRL and drag a control marker for a fountain-type transparency, you constrain the angle you're setting in 15° increments. You can also straighten a crooked Fountain transparency you've manually defined by CTRL-click-dragging.

- **Free Scale and Skew** As with the fill controls on objects, the transparency control nodes operate in 90° opposition to one another... *except* when you decide to activate the Free Scale and Skew button on the Property Bar, which adds a third handle and a white control node that can govern one dimension of a transparency while the End node controls the other. Free Scale and Skew can set the angle of an Elliptical transparency to any value, not just to the default 90°. This next illustration shows the difference between a default applied transparency and the same type of transparency after messing with it using the Free Scale and Skew feature. Dragging the Free Scale and Skew node away from the Start transparency node converts an Elliptical transparency type in its default circular state to an oval, and dragging in a circular direction around the Start node rotates the elliptical transparency.

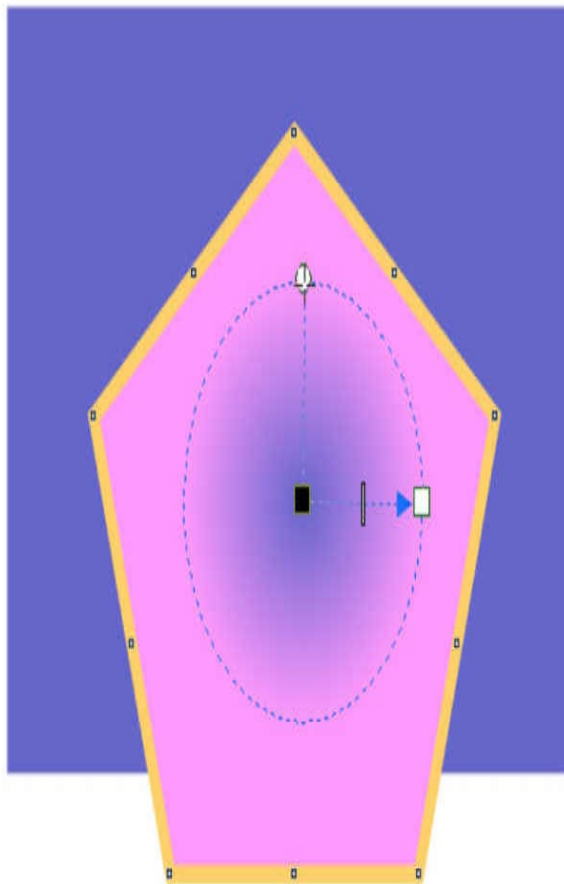


The Free Scale and Skew feature can also be applied using the Edit Transparency dialog, but it's not as much fun as dragging the interactive nodes around.

- **Mirror, Repeat and Mirror, Reverse** These options, which are exactly like the Fill options for fountain fills, are not located on the Property Bar like the Fill options are. You access them by selecting a transparent object and then clicking the Edit Transparency button on the Property Bar. You have a terrific visual of the proposed transformation in the Edit Transparency dialog, and the options are fairly self-

explanatory. The biggest difference between the Repeat option and the Repeat and Mirror option is that the Mirror function tends to create “tubes” of transparency, whereas the simple Repeat function makes objects look like anything from shingles on a roof to a splash screen to a cartoon.

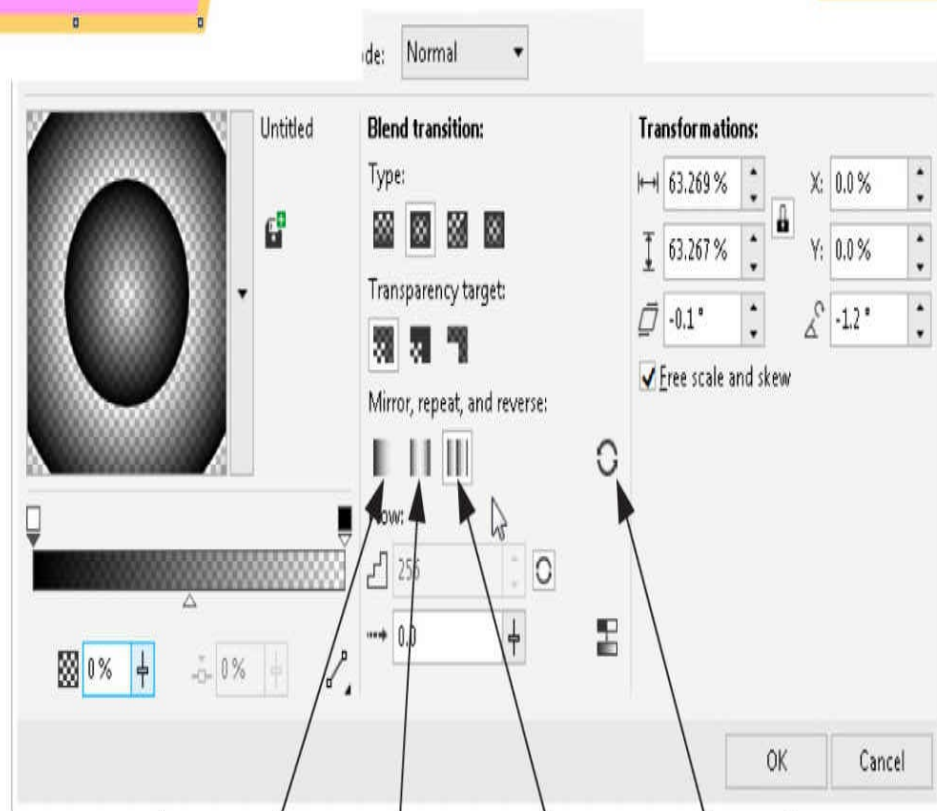
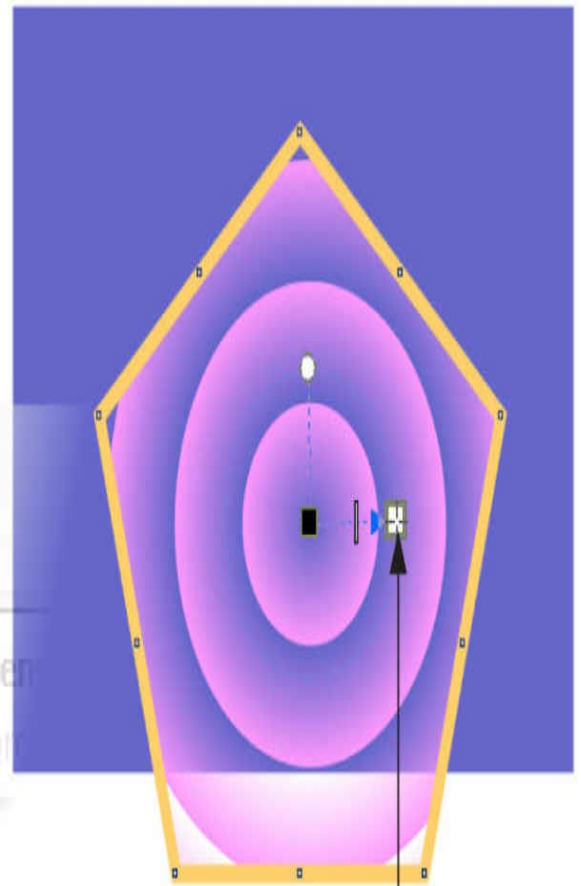
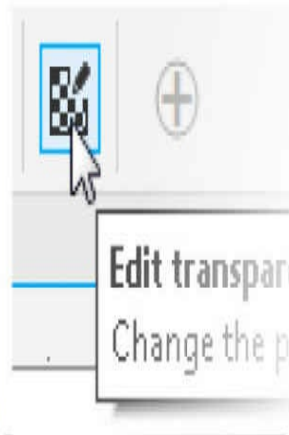
You can set the number of repeats within an object by dragging the End transparency node; when you click the Free Scale and Skew button on the Property Bar, you can also set the angle of distorted repeats in an object—and if you’re determined, and take it slowly, you can also change the number of slanted repeats using the Freeform node.



Elliptical
transparency



Edit Transparency



Drag End node to
change number
of repeats.

Default
state

Repeat
and Mirror

Repeat

Reverse

Let's kick back for a moment and run through some steps that demonstrate the practicality of a Linear transparency used in an illustration to imitate the “glass icon” reflective look.

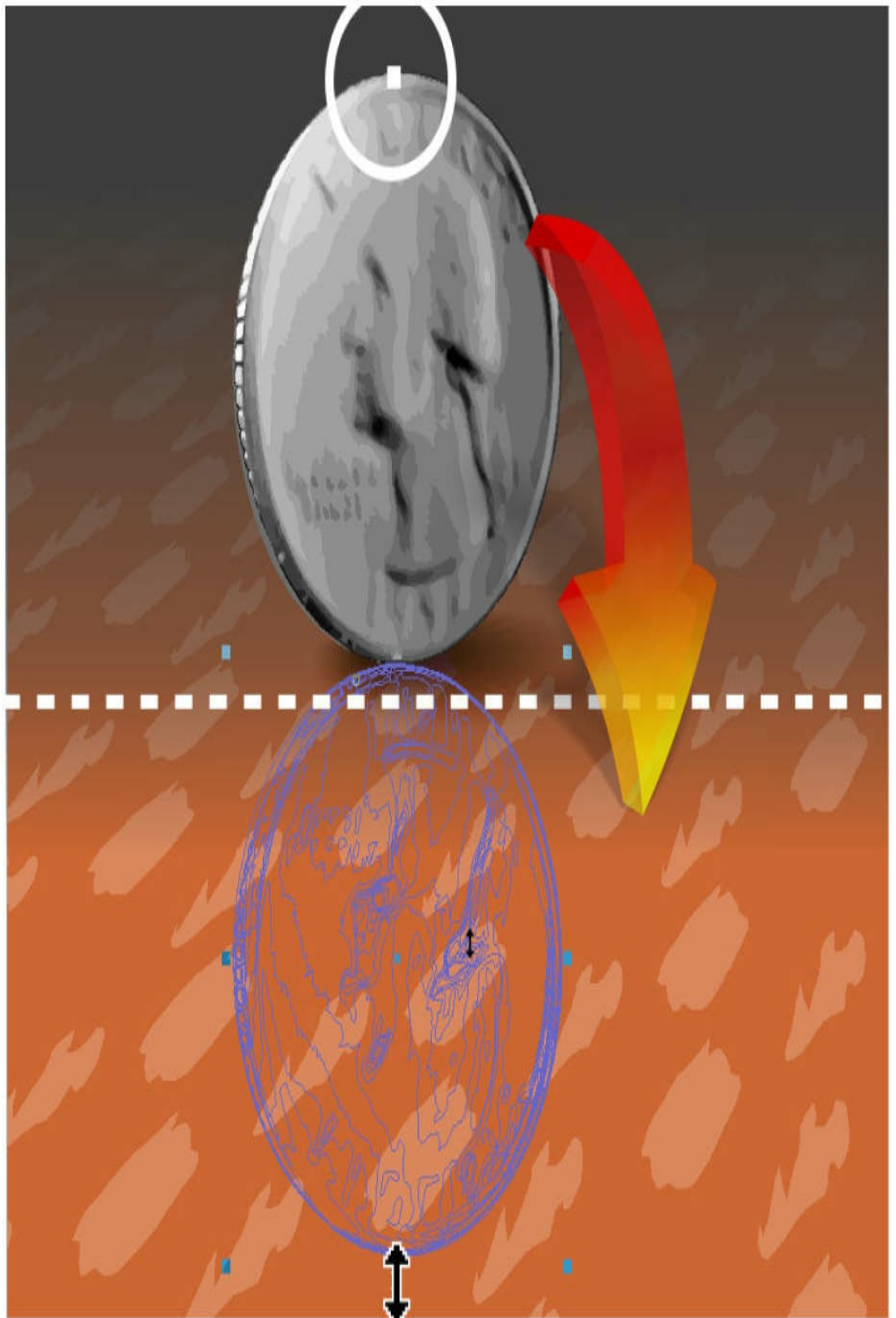
Creating a Reflection on a Shiny Surface

Tutorial

1. Get out US Quarter.cdr. The background patterned surface is locked, and all you need to do is play with the coin, which is a group of objects.
2. With the Pick tool, select the quarter and then hold CTRL while holding the top-center selection handle—you're going to drop a copy of this coin, but you're going to place the copy directly below the original, so both bottoms of the quarters line up perfectly.
3. Drag down on the selection handle. As soon as you can see the preview of where the duplicate is going to go, press the right mouse button and then release CTRL and the mouse buttons. The action is mapped out in the following illustration.

Hold CTRL and drag the top-center control node down.

The mirror plane needs to be perfectly horizontal.



Right-click, then release CTRL to drop a mirrored copy.

4. Choose the Transparency tool and select the bottom, mirrored file (you can do this with the Transparency tool). Then, beginning at the very top of the upside-down file, drag down so that the 0 percent transparent area of this Linear transparency is at the top and the bottom is 100 percent transparent. Neat effect, eh? You're not quite done yet.
5. You neither want the top to be totally opaque nor the bottom totally transparent. The default for the Transparency tool can and should be modified to convey a little more convincing scene than opaque to transparent—that's not how you see reflections. Click the top transparency node to reveal the pop-up slider and change the value to about **23**. Then click the bottom transparency node and make the value about **96**. See the following illustration.



6. Remember earlier when we talked about moving the control nodes to change the transparency effect? You might want to do this to make the effect seem more real to you (and your audience), but the alternative (moving the midpoint slider) is quicker and gets the task completed, as shown in this illustration. Just drag the slider up a little, and you've got yourself a U.S. quarter reflected in the floor. Incidentally, try the Lightness merge mode to heighten the reflection effect.



Tip For best results on your own with the preceding tutorial, create an object whose bottom side is a curve. Alternatively, with a drawing of a folder, make the bottom edge perfectly horizontal. Any object you draw or photograph resting on its corner with a convincing reflection is hard.

Creating a Better Reflection Using a Bitmap

Although the preceding reflection example produces a nice, clean reflection that diminishes in opacity as the top recedes from the scene, there's something missing from the drawing. Have you ever seen a perfect reflection? The answer is “no”—*no* surface is perfect in the world because nothing in the world is perfect, except for Krysten Ritter's hair.

Usually, there is a blur to a reflection, and by doing this on a composition, you'll see that the effect provides a lot more photorealism than without the blur. To do this blurring jazz, you can't perform it on vector shapes in CorelDRAW, but you can convert a copy of a group of objects into a bitmap and do all sorts of clever stuff with the bitmap. There's an additional perk to converting a copy of a drawing to a bitmap; there is a limit to the number of objects in a group that CorelDRAW can apply transparency to. The author learned this the hard way; DRAW popped me a “no can do” box when I tried to apply linear transparency to the two LED bulbs you'll be working with next. How *dare* DRAW refuse to apply this effects to more than 300 objects in a group?!

Okay, let's get real—and get to work.

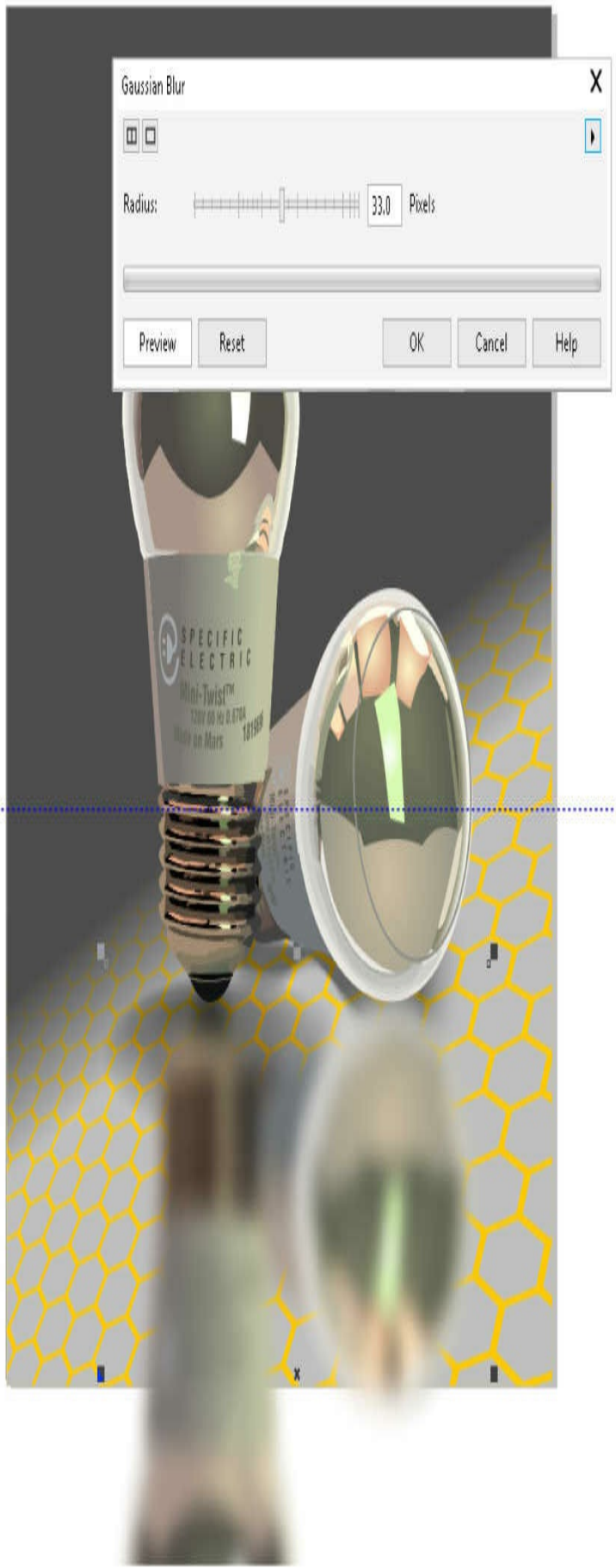
Filtering a Bitmap Copy

Tutorial

1. Open LED Bulbs.cdr. The polygon pattern is locked; all you need to do is work with the bulbs groups of objects.
2. Make a copy of the bulbs using the drag-and-drop technique. One of the sets of bulbs will be converted to bitmaps, destroying the original vector art in the process.
3. With the Pick tool, select one of the bulbs. Then, while holding SHIFT to additively select, click the other bulb. Make sure the bulbs do not overlap one another.
4. Choose Bitmaps | Convert to Bitmap. In the Convert To Bitmap dialog, you can accept the default of 300 pixels per inch resolution, a nice resolution for printing your work. Also, make sure the Transparent box is checked in the Options area. Finally, *make sure*

you have a copy of your vector work. “Convert to bitmap” *does not* mean “make a bitmap copy.” Your work is literally converted to pixels. Are you good with that? Good. Click OK.

5. With the bitmap copy selected, choose Bitmaps | Blur | Gaussian Blur.
6. Drag the Radius slider in the dialog to about 33 pixels, and then click Preview to see what the effect might look like directly on the objects on the page. If you feel that’s too high an amount, drag the slider to the left and then click Preview. See the following illustration for a visual example of Steps 4–6.



7. Choose the Transparency tool. Then, exactly like the previous tutorial, drag from the

top to the bottom of the selected bitmap, and make adjustments to the midpoint and the Merge mode (Lightness works great in this example). In [Figure 19-2](#), you can see the result of your hard work!

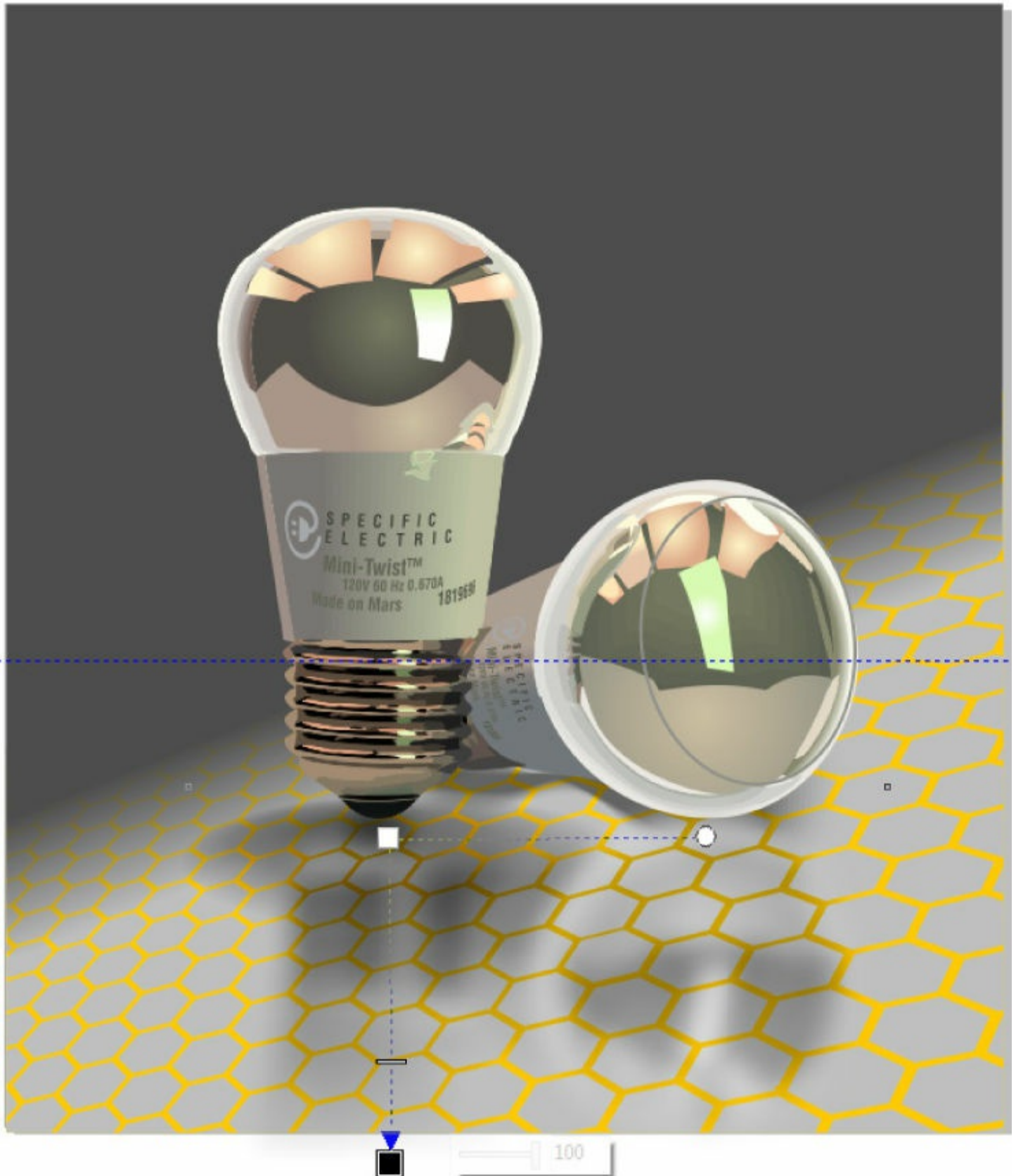


FIGURE 19-2 Use Transparency in combination with a filtered bitmap to create amazing reflections in your work.

Additional Fountain Transparency Types

You also have Elliptical, Conical, and Rectangular Fountain transparency types at hand when you design something you need to look more dimensional. The Elliptical transparency effect is fantastic for making spectacular highlights—brilliant but soft-edged highlights you commonly see when sunlight hits a highly polished metal or smooth plastic object. A Conical transparency is good to use when you need a pie-wedge-shaped area—and this, too, is good for simulating highlights and reflections. The Rectangular transparency type might not prove to be useful on a day-to-day basis, but it's great for creating soft-edged highlights to use as window panes and other right-angle geometric areas you want to emphasize visually.

Let's take a detour in this documentation to discuss *transparency operations*. Also called Merge modes and Blend modes, these operations have an additional effect on all objects with a transparency effect.

Using Transparency Operations (Merge Modes)

The Property Bar offers a list of *modes* so that you can set how your transparency colors interact with the colors of underlying objects. These options further the visual complexity of semitransparent objects. For example, a red plastic drinking glass on a yellow tablecloth will show some orange through it due to the nature of colors that mix as light passes through the glass. But the shadow cast by the nontransparent areas of the glass will not be the same shade of orange as the light we see through the glass—light in the real world is subtractive, and the shadow in such a scene would be almost brown. However, you don't have to calculate light properties or material properties when you choose the best Merge mode for your illustration.

The following definitions of Merge modes describe the effect you can expect with each mode; let's use "source" to refer to the top object that takes the transparency effect and "target" to refer to one or more objects below the transparency object that are overlapped by it. The "result" is the color you see in your drawing in the overlapping areas.

- **Normal** Normal Merge mode is the default whenever a new transparency effect is applied to an object. Choosing Normal at 50 percent opacity usually produces predictable color blends between the source and target objects; for example, a pure yellow object at 50 percent Normal opacity over a pure red object yields orange as a result in overlapping areas. Similarly, and in traditional physical painting, a white source object produces a *tint* result over a pure color object (a pastel color), whereas a black source object produces a *shade* of the target object's color (if you're shopping for house paints, the salesperson will love this jargon).

- **Add** The Add(itive) mode applies transparency in a similar fashion to Normal mode, except it whitens and brightens the result—seriously! In English, there’s a subtle but distinct difference between “plus” and “added to”; similarly, Additive Merge mode moves the combined result of the target and source object colors in a positive direction in brightness value. The artistic result is good for adding subtle shading to composition areas; this is something painters through the centuries could not do without the added step of applying pure white because inks and pigments use the real-world subtractive color model.
- **Subtract** This mode ignores the brightness value in the source object and is similar to mixing physical pigments. If you use Subtractive transparency mode on green and red objects and overlap them with a target blue object, the result color will be black.
- **Difference** Remember color opposites on the color wheel? This is what Difference Merge mode does: it moves the result color to the difference (on the color wheel) between the source and target colors. For example, a red Difference transparency object over a yellow target object produces green areas. You’ll see the Difference Merge effect most clearly if you put the object over an empty area of the drawing page. A red Difference object will cast cyan as the result on the page. This blending mode is for creating dramatic lighting effects—for example, you can shine a Difference Merge mode drawing of a shaft of theater spotlight on an object and get truly wonderful and bizarre lighting effects.
- **Multiply** Multiply always produces a darker result color from merging the source and target objects. Its effect is similar to wood stain or repeatedly stroking a felt marker on paper. Several objects in Multiply Merge mode, when overlapped, can produce black, and this is perhaps the best mode for artists to re-create real-world shadows cast on objects. If the source object’s color is lighter than the target object, the result is no change.
- **Divide** The Divide mode produces only a lighter result color if neither the target object nor source object is black or white. Use this Merge mode to bleach and produce highlights in a composition by using a light color for the transparency object, such as 10 percent black.
- **If Lighter** If the target color is lighter than the source transparency color, the area is replaced with the transparency object’s color (that is, the source color). If the target color is darker than the source transparency shape, the result is this region shows no change in color.
- **If Darker** The opposite effect of If Lighter. If the bottom (target) object’s color is darker than the source object, this area takes the color of the top (the source, the transparency) object. There is no visible change if the target object is lighter than the source object.
- **Texturize** This mode will not produce much of a change unless you fill the source object with a bitmap or pattern fill. However, if you fill the transparency object with a

bitmap fill, the result is a shaded and patterned area. This mode removes the hue and saturation from the bitmap fill, leaving only brightness values—in effect, making your target object a shaded version of the original, sort of like merging a grayscale photograph over an object. This is a useful Merge mode when you do not want the target object to influence the result colors with any distinct hues. You can also use this mode to build up texture quickly and simulate real-world complexity in your composition.

- **Color** This mode uses the hue and saturation values of the source color and the lightness value of the target color to create a result. This is the opposite of the Lightness Merge mode.
- **Hue** The Hue Merge mode changes the result color to the hue of the target color, without affecting saturation or brightness in the result. This mode is useful for tinting compositions, and the target object colors are ignored in the result.
- **Saturation** The Saturation Merge mode can be used to remove color from the result; it's quite nice at making black-and-white photographs from color images. This mode ignores hue and brightness components in the result. Try using shades of black as the transparency object's fill. Highlighting saturated target and source objects will produce no change in the result.
- **Lightness** The target object's lightness values are calculated, ignoring hue and saturation. This is a great mode for brightening the result colors because the target object's colors are never changed, just the *lightness* (also called *value* and *brightness*).
- **Invert** This Merge mode creates a result color that is the chromatic inverse of the target color. You can occasionally reproduce the look of a color negative using this mode—it moves the result color 180° on the color wheel. Using Invert Merge mode on the same colored target and source objects produces gray.
- **Logical AND, Logical OR, and Logical XOR** The AND function includes similarity between the source and target objects; for example, two red ellipses that overlap and both have the AND transparency Merge mode appear not to be transparent at all but instead display 100 percent red where they overlap. This is a useful mode when you want only a color result in overlapping areas because AND creates no change outside of the overlapping result area. The OR operator is an exclusive operator; in other words, it excludes stuff. This is a good mode for clipping a color change, thus limiting it to areas only where the target and source objects overlap. You'll see nothing outside the overlapping areas when the target object has the OR operator. XOR is a Boolean math statement, based on something called a Truth Table, where certain conditions must be met to produce a result. You might not find a use for this transparency mode unless you use more than two objects in a design area; if both objects are similar or if neither object is similar, you'll get no result color. This operation only works if there is one differently colored object in the color calculation operation.

- **Behind** You need two objects that have transparency for Behind Merge mode to work. Wherever the target object on bottom contains transparency, the source object with Behind mode fills the transparent bottom areas with its color(s). Therefore, the source object will appear invisible in areas where the target object has no transparency. Use this mode in your design work to fill in missing areas (transparent ones) in the target image without being apparent in areas that do not contain source object transparency.
- **Screen** This Merge mode always returns a lighter color, or the source object is invisible if it is darker than the base object or if it's black. Screen is similar to (but a less intense effect than) Add Merge mode; the effect looks like bleach applied to a colored garment.
- **Overlay** This mode examines the brightness value of the base color. If the result of combining the source with the base is greater than 128 on a brightness scale of 256, the result is a screened area. If the result is not as light as 128, the area is color multiplied. Highlights and shadow areas are preserved in the base image when you use this mode. You almost always achieve a result that has more visual contrast than the original when you use Overlay.
- **Soft Light** Akin to Overlay Merge mode, except instead of screening and multiplying areas, the result is lightening and darkening, a less intense effect.
- **Hard Light** Very similar to the screening and multiplying effect of the Overlay Merge mode, except highlight and shadow regions are *not* preserved. Use this mode if Overlay doesn't prove to be an intense enough effect for merging two color objects or images.
- **Color Dodge** The base colors are brightened based on the colors used in the source object. Black produces no effect when used as a source color, whereas white can produce a near-white. The effect could be compared to adjusting the exposure of the base image by brightening and tinting the base image simultaneously while reducing overall contrast.
- **Color Burn** The inverse effect of Color Dodge. White in the source object produces no effect above the base object; colors are reduced in exposure, increased in contrast, and black and darker shades of color in the source object appear to stain the base object.
- **Exclusion** Similar to the Difference Merge mode, but instead of subtracting either the source or the base color (whichever is brighter) to arrive at a darker color, Exclusion Merge mode removes the color of the transparent areas in the resulting blend. When white is used in the source object, it inverts the underlying colors in the base object. Using black produces no effect.
- **Red, Green, and Blue** Each of these Merge modes filters out a respective (RGB) channel, and the native color of the source object is ignored. This is a useful transparency mode for color correcting photographs you import to CorelDRAW; for example, if you put a Green transparency mode object over a portrait, and then play

with the amount of transparency on the Property Bar, you can sometimes correct for harsh indoor (particularly cheap fluorescent) lighting.

Creating Multistage Transparencies

You might find you need a transparency object that's more complex than the Fountain types offered on the Property Bar; for example, a lens flare can add photorealism to an illustration, and this option doesn't seem to be on the Property Bar. However, the first place you might want to look for an exotic, complex multistage transparency is on the Transparency Fills picker on the Property Bar. (You can see the Transparency Fills picker in [Figure 19-1](#).)

If you don't find what you envision, CorelDRAW's Transparency tool's power can be used to build a multistage fountain fill for an object, and then you can use the Transparency tool in a Merge mode operation that hides certain colors in the fountain fill. For example, if you want to create bands of transparency in an object, you drag shades of black from the color palette and drop them onto the marker connector, alternating with white markers. Remember, darker shades represent transparency, and lighter shades stand for opacity. You might want to reposition the new markers once you've added them; this is done by click-dragging with the Transparency tool. If your drop point for a new marker isn't exactly over the marker connector (the blue-dashed line), your cursor will turn into an international "no can do" symbol.

Pattern Transparencies

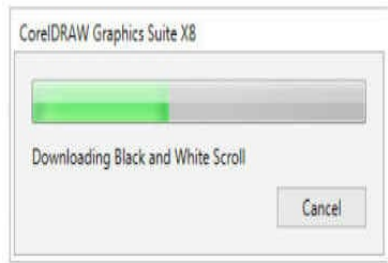
You can use pattern transparencies to create intricate detail by combining the transparency object and all the objects below it. The Transparency Type buttons on the Property Bar include Vector Pattern, Bitmap Pattern, and 2-Color Pattern transparency types. With any of these selected for the transparency type, the starting Transparency (the "Start") slider controls the percentage of transparency applied to brightness values in the chosen bitmap that are above 126 on a brightness scale of 0–255 (256 shades); the ending (the "End") Transparency slider controls the percentage of transparency applied to brightness values in the chosen bitmap that are below 128. When you double-click a custom transparency preset, it might take a moment to download the preset; you will *definitely* need an active Internet connection to work with the collection of transparency presets. If you click (don't double-click) on a thumbnail, a flyout appears where you can see the author of the preset, along with options for making this preset a Favorite and *liking* the preset, which is simply Corel's version of social networking.

[Figure 19-3](#) shows Hawaiian shirt.cdr, a file you should feel free to experiment with, along with the options on the Property Bar when the Transparency tool is selected and the control nodes above the target object. You work with Scale, Rotate, and Skew in addition to setting the center point for the transparency a little differently than you do with the Fill tools, but you'll pick up the Rotate and Scale node—which looks like the Free Scale and

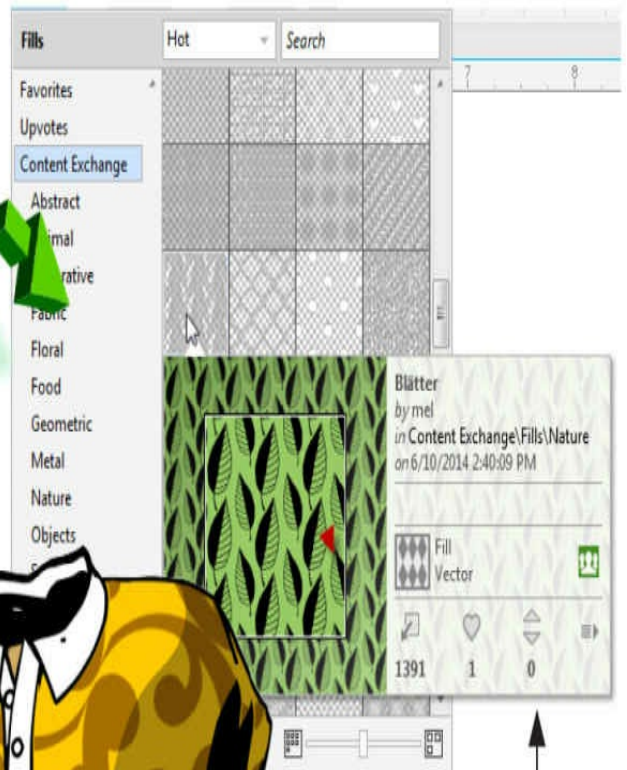
Skew node in Fills—quick enough. It's suggested you choose Multiply Merge mode for the top object when you apply the transparency pattern. Clearly, CorelDRAW provides you not only with a robust feature set, but also with enough Hawaiian shirt patterns to last you several months of vacationing.

Foreground
Transparency

Background
Transparency



Vector Pattern
Transparency



File info and
options

Center of
pattern

Rotate and Scale

Skew



FIGURE 19-3 Use patterns as the basis for transparency to add visual complexity, simulating a woven texture, a painted one, or other engraved and embossed effects.

You don't need a tutorial to make a shirt decorated with a custom transparency. You select the light solid part of the shirt, open the Transparency Fills picker, and then drag your choice of fills to the selected object.

Using Transparency Freeze

In addition to the options on the Property Bar that are almost identical to the Fill tool's options—Copy Transparency, Apply To Outline, Fill, or All, and Edit Transparency—we have the option Freeze Transparency, which is much like freezing a lens effect. When you freeze a transparency object, the transparency object captures a composite of the target object's properties, combined with whatever was beneath the target object before you clicked the Freeze Transparency button on the Property Bar.



Tip Deactivating the Freeze Transparency option (without ungrouping it) returns a transparent object to its current and active state. This means if you freeze the object, move it, and then unfreeze it, its interior will display whatever is *currently* under it.

Using the Drop Shadow Effect

With the Drop Shadow tool and the options available on the Property Bar when it is the active tool, you can create both shadows and glows, in drop shadow and cast shadow fashions (explained shortly). Although this section walks you through several variations, basically you have three different types of effects at hand when you use the Drop Shadow tool, as shown in [Figure 19-4](#).

Drop shadow

Perspective (cast) shadow

Glow

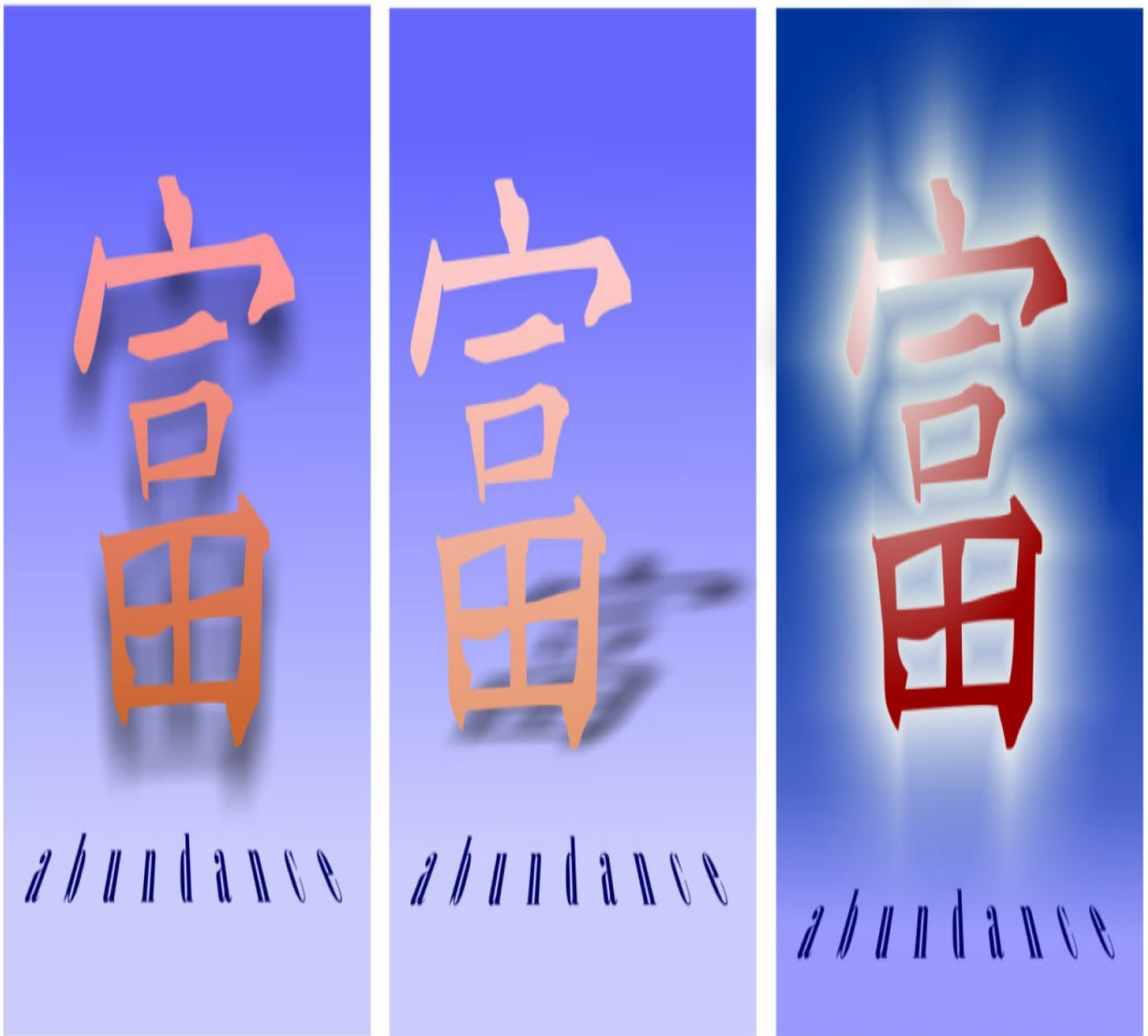


FIGURE 19-4 The drop shadow effect can add perspective and be used to light up a scene, not simply to make things cast shadows.

- **Drop shadows** This shadow type creates the impression that you're viewing an object from the front and that the object is basically lit from the front. Drop shadows are a popular effect; however, they don't always bring out depth in a composition because the drop shadow suggests a face-front orientation of a scene—a viewpoint usually reserved for driver's license photos and wanted posters in the post office. However,

drop shadows will indeed perk up a web page, because the audience expects a face-front orientation since we all tend to face the front of our monitors.

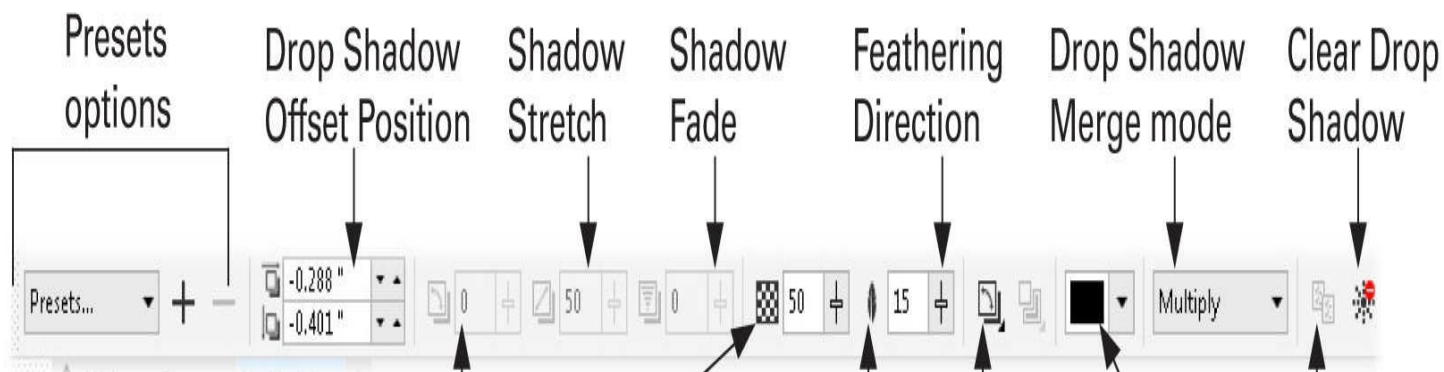
- **Cast shadows** This effect is sometimes called a *perspective shadow* in CorelDRAW. The effect suggests a shadow casting on the ground and travels to a scene's vanishing point. It visually suggests that the audience is looking *into* a scene from a perspective point and is not looking *at* an object placed *on* a scene, as drop shadows tend to do.
- **Glow** All effects created with the Drop Shadow tool are dynamically updated bitmaps, and, as such, they can look soft as shadows do on overcast days; they can also be put into Merge modes. Therefore, you take a blurry bitmap, put it in Multiply Merge mode, and you have a re-creation of a shadow. However, if you take that same blurry bitmap, give it a light color, and then put it in Normal or Add Merge mode, you have a glow effect. This is part of what CorelDRAW does when you use a Glow preset, and you have a lot of manual control over creating a shady or glowing look that perfectly suits a piece of work.

Like other effects in CorelDRAW, drop shadows maintain a dynamic link; any changes to the control object automatically update the shadow. A shadow's look—its position, color, opacity, and feathering—can be customized, plus you can manipulate the angle, stretch, and fade properties of shadows and glows.

Using the Drop Shadow Tool and Property Bar

The Drop Shadow tool—located and clearly marked in the Effects flyout on the Toolbox—is about as hard to use as click-dragging, and after you click-drag to create a custom shadow, you'll see a series of Property Bar options. The tool is found in the Toolbox with other interactive tools.

After an initial click-drag to add a drop shadow to an object, you'll notice the Property Bar lights up, and you now have a ton of options for refining what amounts to a sort of “default” drop shadow effect. Drop shadows can take one of two states: flat (drop) or perspective (cast). Depending on which state you use, the Property Bar options will change. [Figure 19-5](#) handsomely illustrates a look at the Property Bar when a flat shadow is being applied.



Shadow Angle

Transparency

Feathering

Feather Edge Type

Drop Shadow Color selector

Copy Drop Shadow Properties

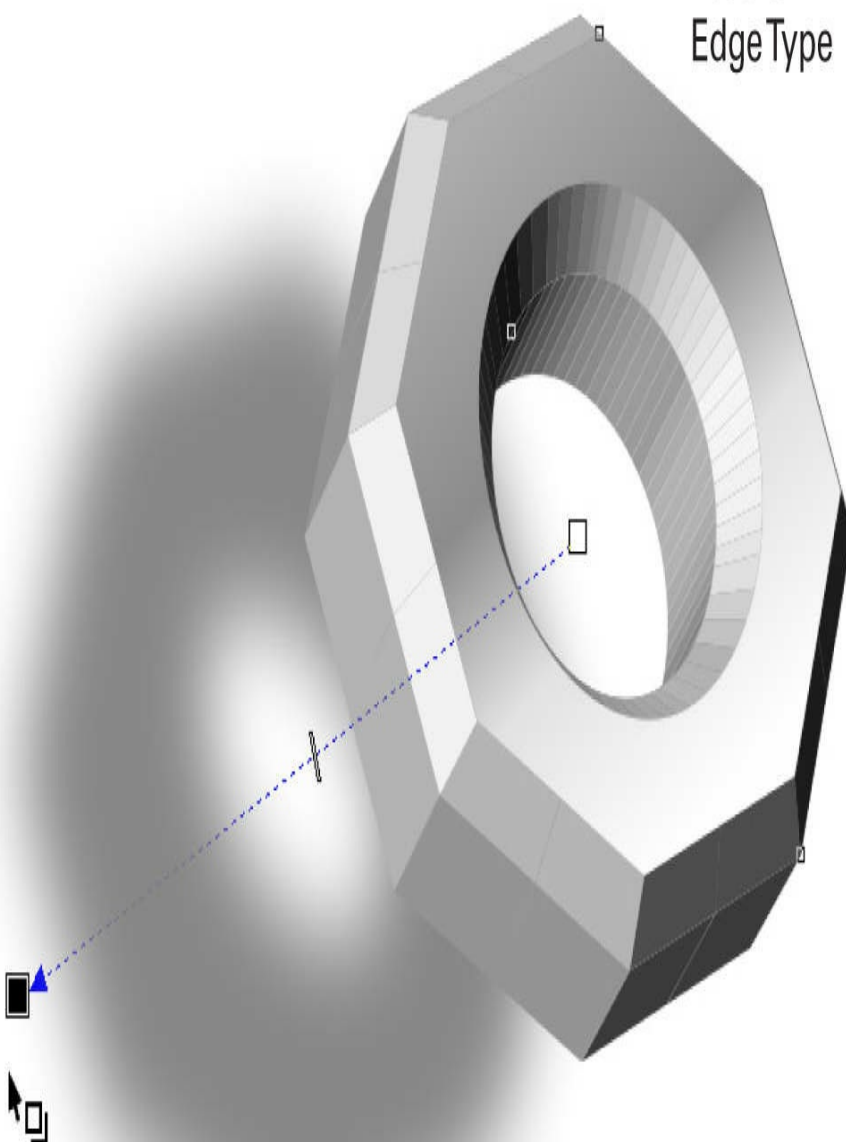


FIGURE 19-5 You might be a shadow of your former self after sifting through all the drop shadow options!

Here's an introduction to shadow-making through a tutorial intended to familiarize you with the Property Bar options as well as with a little interactive editing. As with most of the effects in CorelDRAW, the onscreen markers for click-dragging to customize a shadow are very much like the markers for the Extrude fountain fill and other tool control handles.

Working the Property Bar and Shadow-Making Markers

Tutorial

1. Create an interesting object to which you want to apply a shadow, and finish applying its fill and outline properties. If you deselect it, this is okay—a click on the object with the Drop Shadow tool selects it.
2. Choose the Drop Shadow tool, and notice that your cursor changes to resemble the Pick tool with a tiny Drop Shadow icon in its corner. If you don't do anything with the tool, the only option on the Property Bar is the Presets drop-down selector at the moment.
3. Click-drag from roughly the center of the selected object; continue holding down the mouse button so you can see some of the mechanics of this effect. Notice that a preview outline appears that matches your object. This indicates the position of the new shadow once you release the mouse button. Notice also that a white node has appeared in the center of the object, and that another node has appeared under the cursor as you drag it. A slider control has also appeared at the midpoint of a dotted guideline joining the two nodes.
4. Release the mouse button and *BAH-woing!* A drop shadow appears. This is a default shadow, colored black, and it has default properties.
5. Drag the slider control on the guideline between the two square-shaped nodes toward the center of your original object. This reduces the shadow's opacity, making it appear lighter and allowing the page background color—and any underlying objects—to become more visible.
6. To change the shadow color, click the Color selector on the Property Bar and then select a color. Notice that the color is applied; you can do some wild stage-lighting stuff by choosing a bright color for the shadow, but the opacity of the shadow remains the same.

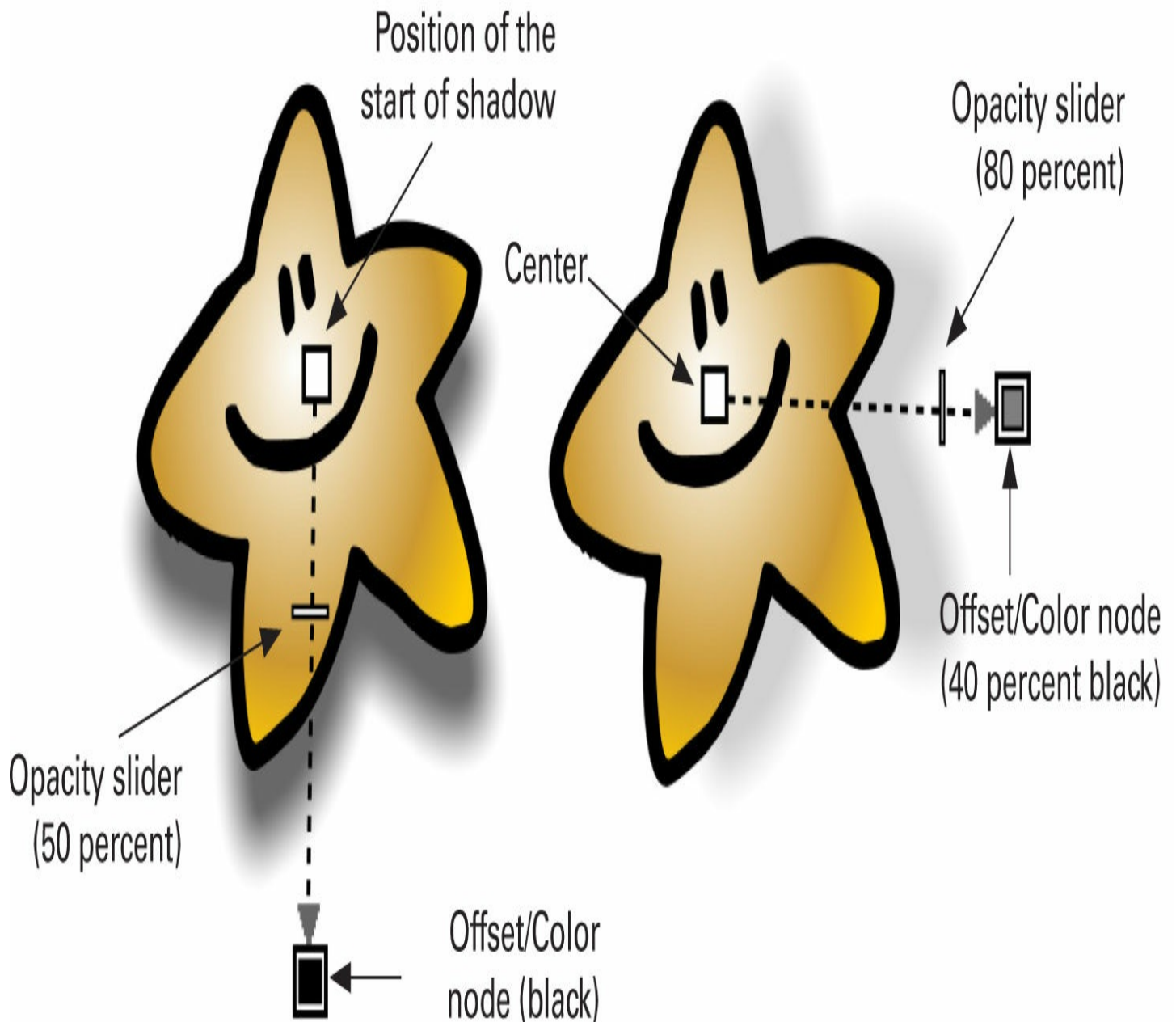
7. Drag the white node to the edge of one side of the original object. Notice the shadow changes shape, and the node snaps to the edge. This action changes a drop shadow to a perspective shadow.
8. Using Property Bar options, change the default Feathering value to **4** and then press ENTER. The shadow edges are now more defined. Increase this value to a setting of **35**, and notice that the shadow edges become blurry; you've gone from a sunny-day shadow to an overcast-day shadow.
9. Click the Fade slider control and increase it to 80. Notice that the shadow now features a graduated color effect, with the darkest point closest to the original object becoming a lighter color as the effect progresses farther away from your object. This is not only a photorealistic touch, but it also helps visually integrate a shadow into a scene containing several objects.
10. Click the Drop Shadow Stretch slider and increase it to 80. The shadow stretches further in the direction of the bottom node, and you've gone from high noon to almost dusk in only one step.
1. Click a blank space on the page to deselect the effect, or choose the Pick tool, and you're done. Take a break and hang out in the shade for a while.



Tip To launch quickly into the editing state of an existing drop shadow effect while using the Pick tool, click the shadow once to display Property Bar options or double-click the shadow to make the Drop Shadow tool the current tool.

Manually Adjusting a Drop Shadow Effect

After applying the drop shadow effect, you'll notice the interactive markers that appear around your shape. You'll see a combination Offset Position and Color node joined by a dotted line featuring an Opacity slider. If you're new to interactive controls, this illustration identifies these markers and indicates their functions.



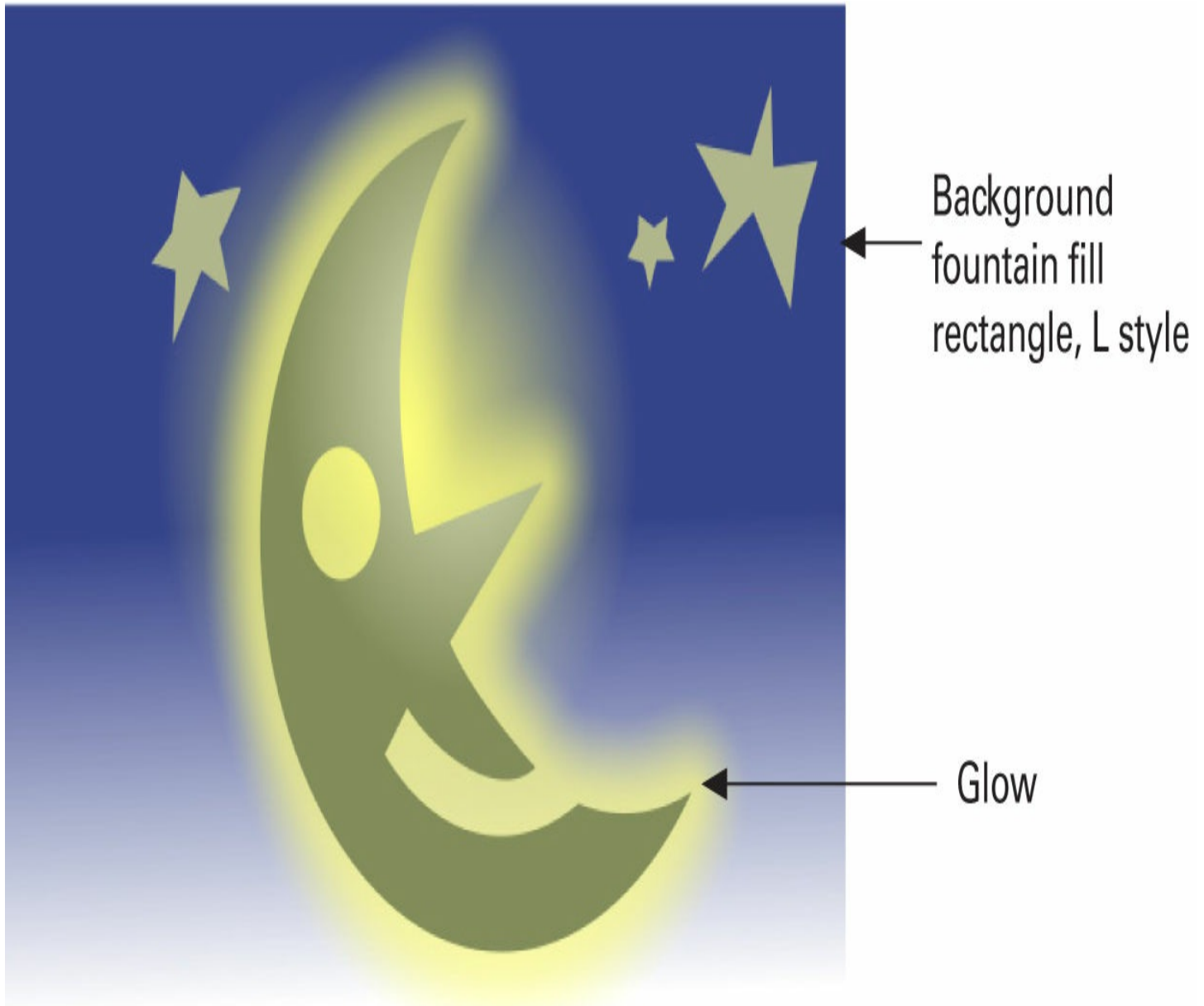
Tip To change a selected drop shadow's color, click-drag any color swatch from the onscreen color palette onto the shadow's Color node.

Shadows as Glow Effects

CorelDRAW's drop shadow effect is not limited to making shadows; if you think about it, a blurry bitmap can also represent a glow effect by using a different Merge mode and color.

By default, whenever a new shadow is created, black is automatically the applied color. You can reverse this effect by applying light-colored shadows to dark-colored objects

arranged on a dark page background or in front of a darker-colored object. Here, you can see a black compound path (the cartoon moon) on top of a Linear fountain-filled rectangle (black is the End color and 30 percent black is the Start color toward the moon) with a light-colored shadow effect applied. The result is a credible glow effect; there are also Glow Presets on the Property Bar when you use the Drop Shadow tool to give you a jump-start on creating glows.



This chapter has shown a lot of nonspecial effects. Keep in mind that transparencies and shadows aren't supposed to “wow” your audience, but rather speak of a quiet elegance that strikes the viewer on a subliminal level. It's well worth your time to become proficient with these effects for the future when you need a touch of photorealism in a drawing—something that strikes the audience without hitting them over the head.



PART VIII Bitmaps and Photos

20 Understanding and Working with Pixel-Based Images

Because people seldom photograph an object or a scene with exactly the elements they want in a composition, the field of retouching has thrived since the day a professional had something to sell using a photograph! This is why professionals trim photographs, and so can you, using the CorelDRAW features covered in this chapter. As objects, photographic areas that have been carefully cut out can be composited with other photos and vector shapes to add a whole new dimension to your posters, flyers, and fine art. Additionally in this chapter, Corel PowerTRACE, part of CorelDRAW, is demonstrated; you'll learn how to create a vector copy of a bitmap so you can scale and rotate it, edit it, and never lose details or resolution as bitmap images are prone to do.



Note Download and extract all the files from the Chapter20.zip archive to follow the tutorials in this chapter.

Cropping a Placed Photograph

You can perform two types of cropping on placed photos: destructive (permanent) and nondestructive (you can undo what you've done). The Crop tool on the Toolbox performs destructive cropping. Unless you press CTRL-Z to undo a crop you don't like, you're stuck with your crop, and no exterior areas beyond the cropped image remain that you can expose later. With bitmaps, you need to import them (CTRL-I); you cannot File | Open a bitmap image. Cropping a photo involves several steps:

1. You define the area you want to crop by click-diagonal-dragging the Crop tool from one corner to the opposite corner.
2. You can redefine the crop by click-dragging the resulting bounding-box markers. The corner markers scale the proposed crop area proportionately, whereas the center