Still Life Shadow Swap

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1   Introduction

The idea seemed simple enough. Create a small tableau in which the projected shadow is not that of the subject. Such effects can be mocked up in Photoshop – apparently, I've never tried it – but the challenge here was to achieve the same effect in camera with a single exposure. The typical set up involves a chess piece – such as a knight – in which its shadow is transformed into that of a rearing horse. But what if you don't have suitably matched subject-shadow pairs?

The alternative, which I describe here, is to go for completely different pairings in which subject and shadow are still linked in some way; for example by creating a virtual third object by word association. Thus, a SHEEP with the shadow of a DOG would give SHEEPDOG. In this scheme, silhouette shapes are used to create the shadows for the still life projection.

2   Subjects

The first task is to assemble a collection of objects that will form the centre-piece of the still life, either as subject, shadow or both. A rummage around yielded the following potential candidates:

- A miniature house
- A "steampunk" model clock, and
- A cartoon cow ornament

A further search uncovered a cartoon sheep ornament, a toy dog and a beanie elephant. For good measure I added an egg to the assembled menagerie (see Figure 1).

3   Silhouettes

Apart from the dog, the sheep and the house – giving SHEEPDOG and DOGHOUSE – there were no other obvious word pairings. On the other hand, given that one of the pair is to be a shadow, there's no reason why it can't be generated by a simple silhouette. Allowing the use of silhouettes gives us much greater scope in choosing word association pairs for the assembled objects. The silhouettes I chose for this exercise were (see Figure 2):

- A fire
- A tower
- A head

- A house

- A castle

- A boat

- A dollar sign, and

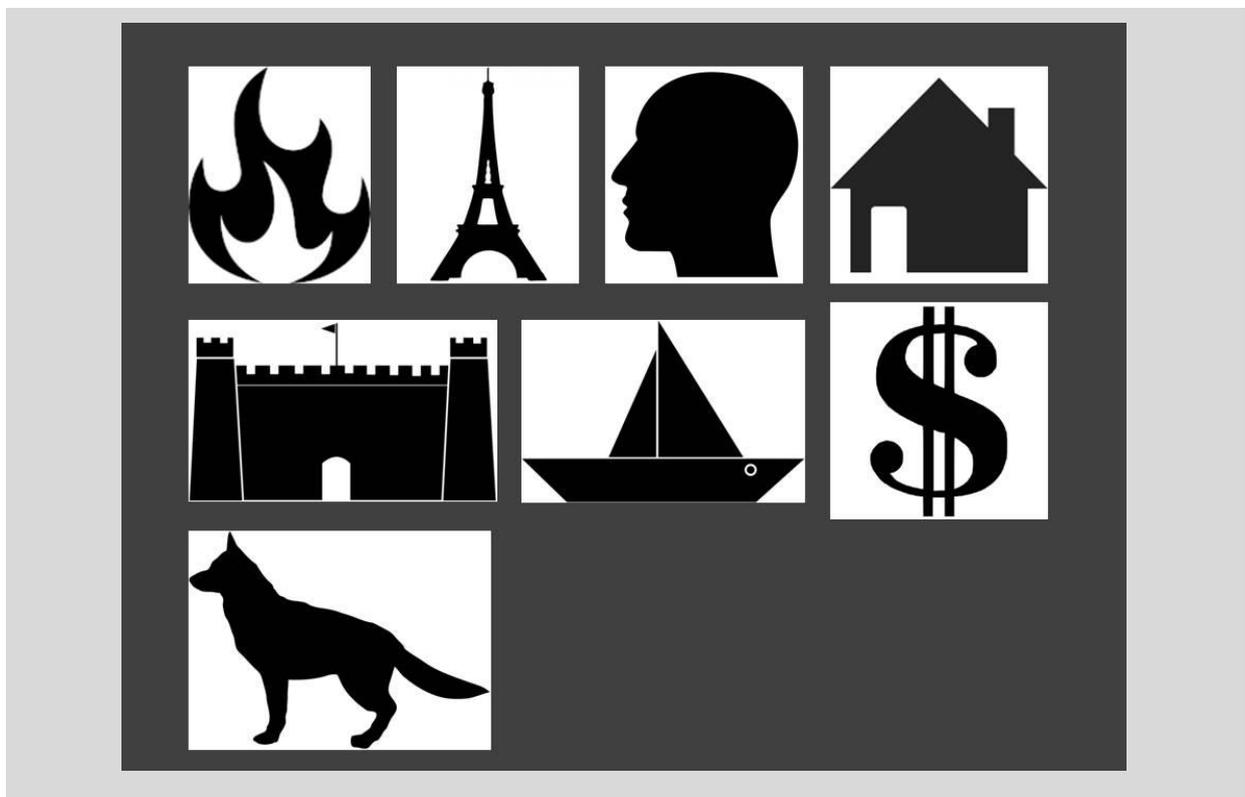- A dog

Figure 1: The Assembled Menagerie

Figure 2: Silhouettes

from which the following well-known words or phrases could be created:

Subject	Silhouette	Phrase
EGG	HEAD	Egghead
COW	DOLLAR	Cash Cow
CLOCK	TOWER	Clock Tower
HOUSE	BOAT	House Boat
DOG	FIRE	Fire Dog or Hotdog
SHEEP	DOG	Sheep Dog
ELEPHANT	CASTLE	Elephant & Castle
DOG	HOUSE	Dog House

In each case, the silhouettes were downloaded from the internet. To be on the right side of copyright, the downloaded images were "labelled for re-use" (in Google Images, for example, select "Tools" – "Usage Rights" – "Labelled for Reuse"). Alternatively, you can create your own. Whichever way you do it, the main criterion is to ensure the shape is not too complex since the next stage will be to print them onto thin card and cut them out.

Thin card should be readily available from art shops. It should be thin enough to pass through a standard inkjet printer – most printers should have a rear feed tray that will allow print media to pass through with minimal bending – while still being sufficiently stiff for the silhouette to stand up unsupported without flopping over. The silhouettes should also be printed at a large enough scale to produce a practicably large shadow. For this exercise, I printed two silhouettes per A4 sheet. Taking time to cut out the silhouettes carefully using a sharp bladed modelling knife will pay dividends later on when we get to make the still life scene.

Before cutting out the silhouettes, it is necessary to think how you are going to support them when in situ. One idea is to use table-top "menu stands", which can be purchased relatively inexpensively from your favourite supplier. Alternatively, you can create a "plinth" when cutting out each silhouette, which is the way I did it. Cutting a plinth involves leaving enough margin at the base of the silhouette, and extending far enough on either side for the outermost 3cm or so to be folded back to form a built-in stand for the shape. While this arrangement proved to be perfectly adequate, it has to be said that a mere 3cm was insufficient counterweight to prevent the silhouette from toppling over too easily. However, the use of small pegs to provide additional counterweight solved the problem (Blutack or paper clips could also suffice if necessary).

4 Lighting

The next stage is to think how we are going to light the scene. Two light sources will be required: one to light the subject and the other to create the projected shadow. One idea is to use a torch coupled with a long enough exposure to be able to switch the beam from subject to silhouette quickly while the shutter is still open. The disadvantage of this approach is that the shoot will have to take place in near full-darkness in order for the scene to be captured adequately without burning out. Arranging for a sufficiently dark space can also be inconvenient.

Another problem is finding a suitable torch. Ideally, the torch should be a point source such as a filament bulb or an LED, which ruled out my old bicycle lights with their triple-LED arrays: having a multiple light source will simply blur out the projected shadow. Neither was my mother's ancient industrial-sized torch with its gigantic PJ996 battery the solution: it too produced a blurred shadow despite having a single filament bulb.

It seemed I was going to have to resort to candle-powered illumination when my eye lighted (excuse the pun) upon the trio of IKEA LED spot lamps I had mounted on my bookcases. These spot lamps proved to be absolutely ideal, particularly in casting a sharp shadow while being bright enough to allow ambient light shooting. The combination of the clamp base and the flexible swan neck cable guide allowed the single LED to be positioned in more-or-less any orientation for lighting the subject and silhouette. As I had at least two LED spots I could light the main elements in the scene simultaneously. If you want to invest in a pair yourself, the product name is NÄVLINGE and they cost around £12 each in either black or white finish (see Figure 3).


Figure 3: IKEA NÄVLINGE Spot Lamp

5 Shooting the Scene

The final stage is to set the scene and capture the image. In setting up the subject and silhouette, it is necessary to ensure that neither the silhouette itself nor the shadow cast by the subject appear on the final image. Also, the projected silhouette shadow should appear to start from the subject. Juggling the positions of the lights, the subject and the silhouette can take some time, but just takes patience.

One unexpected problem was that the projected shadow included the outline of the built-in plinth for the silhouette. Again, a little ingenuity, and the problem was solved. It turned out that the cow ornament – let's call her Ermintrude – needed to be propped up on a small box to achieve the most photogenic pose. The box, or podium as it became known, cast a similar-shaped shadow to the silhouette plinths. Henceforth, all the subjects were mounted on the podium, which was covered for the final shoot with a decorative cloth. All was set for a dry run. All the scenes were shot in ambient light with an exposure of around 1/15s at f4.5 and ISO100 (see Figure 4).

6 The Night's the Night

Thus it came to Isobel's camera night when the entire set up had to be transferred to the main hall in Great King Street, so that CD group members could capture their own swap-shadow images. After some more juggling with the LED spots, silhouettes, subject and the table position, a satisfactory set up was eventually obtained. So what was the most popular combination? The "steampunk" clock in "clock tower" seemed to be the most popular followed closely by Ermintrude in "cash-cow".
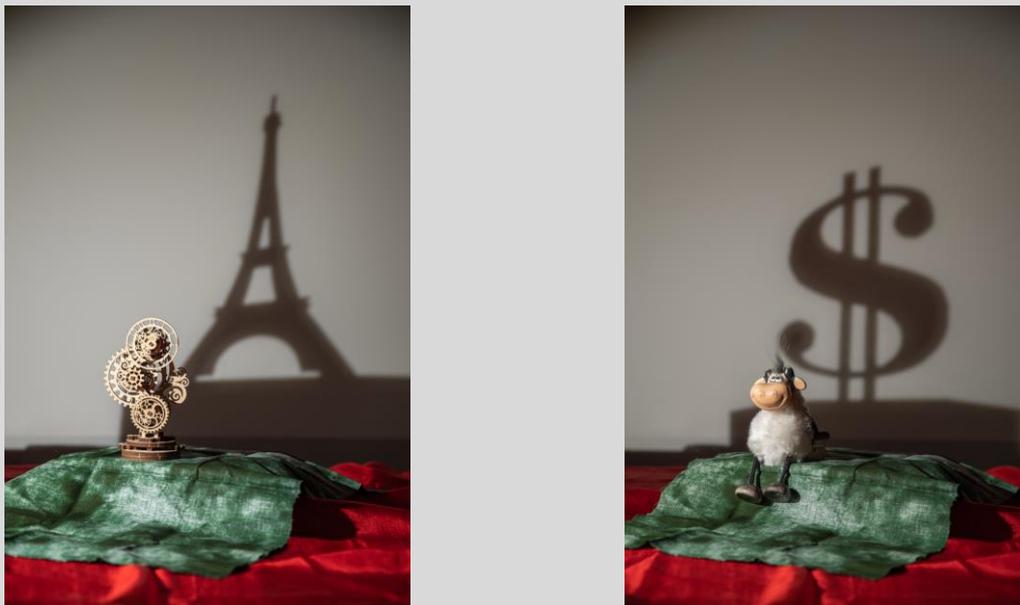
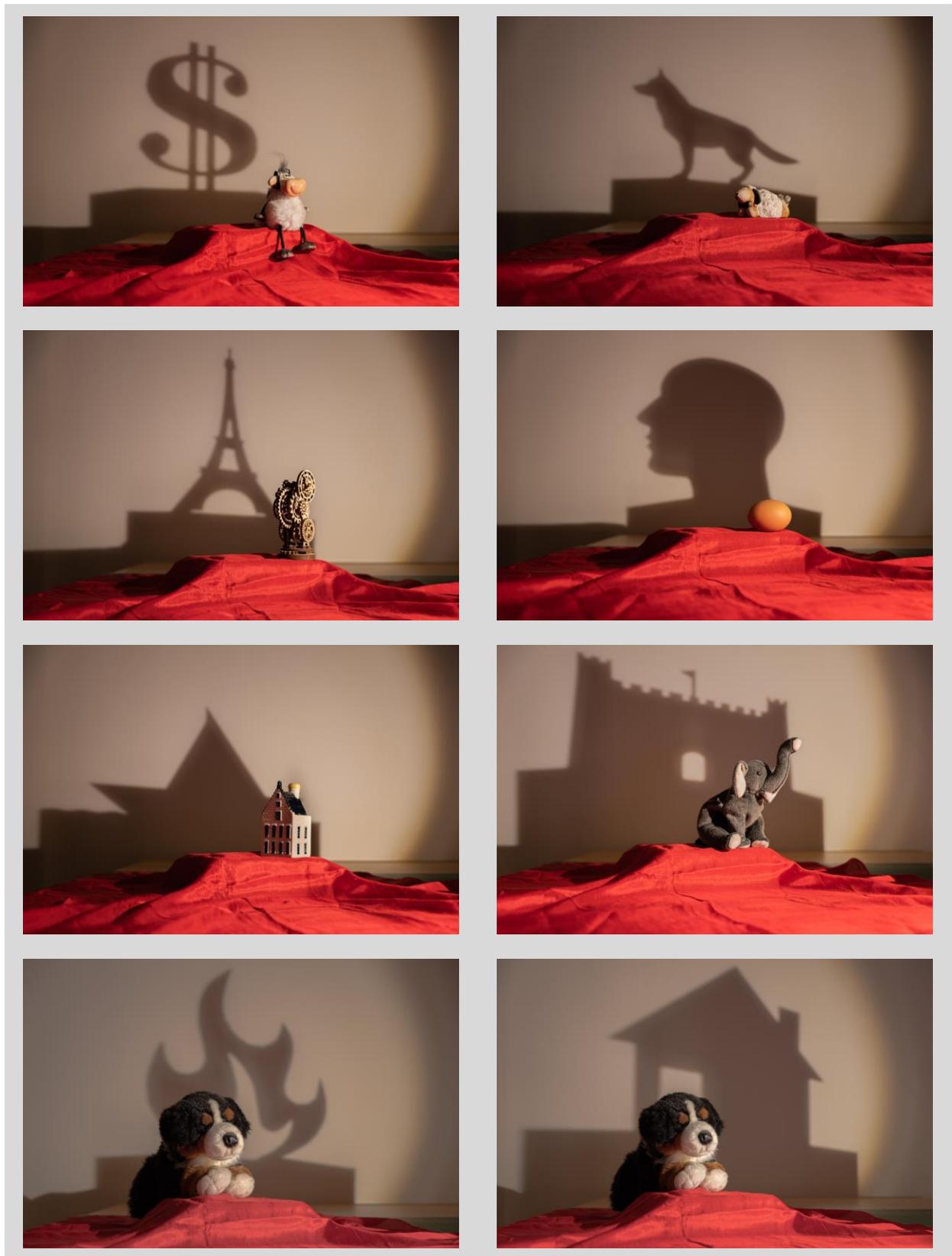Most Popular Shadow Swaps on the CD Group Camera Night

Figure 4: Shadow-Swap Dry Run
Cash-Cow, Sheepdog, Clock Tower, Egghead, Houseboat, Elephant and Castle, Hotdog, Doghouse
The lighting positions and the subject orientations are not quite right in these test images; but it was
a useful exercise nevertheless in proving the concept