Sketching USER EXPERIENCES

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Sketching What You See 3.2

an exercise on drawing accurately

A large part of learning to draw involves learning to reproduce on paper what you are actually seeing. Yet this is difficult for many people. The main challenge is that what registers in our minds as what we are seeing often leaves out or distorts many details of what is actually in the scene. Our thinking mind has many ideas and understandings about what we commonly interact with in our everyday lives. In general these understandings are useful and make our daily activities smoother. However, sometimes these mental models are less than accurate in terms of exactly what is physically present.

For example, quickly look at a person and try to judge where his eyes are in his head. Most people will say they are located within the top third, but the reality is that eyes are almost always in the middle. A drawing based on the idea that the eyes are in the top third of the head would look disturbing.

A good sketcher will draw what she sees rather than what she thinks she sees. Sketching is one activity where strong mental models can be a problem.

AN EXCERCISE IN DRAWING WHAT YOU SEE

In this simple drawing exercise you will learn to draw what you *see* rather than what you *think you see*. Its purpose is to demonstrate the link between drawing what is actually in front of you and creating a good drawing. You will find that carefully drawing what you actually see will rapidly improve your drawings. Betty Edwards, who has taught drawing to non-artists for decades, uses this exercise to introduce drawing skills in her excellent book ***Drawing on the Right Side of the Brain***. She, in particular, suggests copying an upside-down image to help you observe more accurately. We encourage you to get this book, as it is a wonderful primer on drawing.

Materials

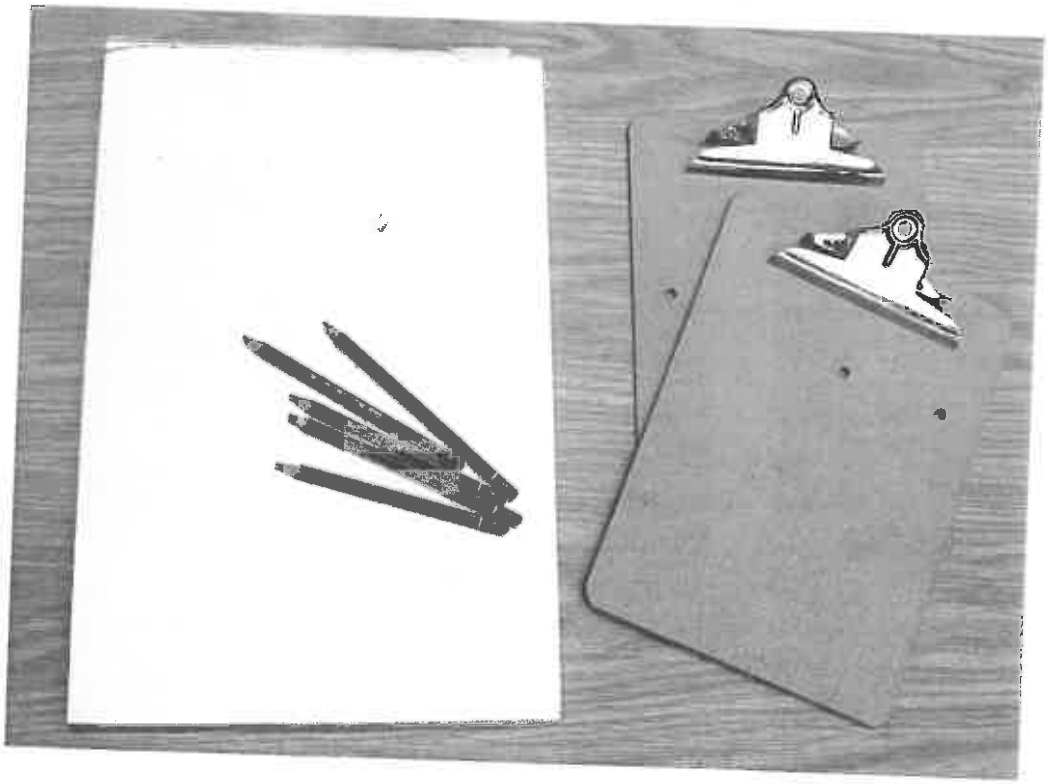
- Paper
- Pencil
- A drawing, such as the one included in this chapter.
- A good flat surface to draw upon (a table, a board, an easel)
- A comfortable place to sit (or stand if using an easel)

There are three parts to this exercise. In all of them, you will draw an object familiar to you. Similar to Betty Edwards, we suggest drawing a person, as we all have strong ideas about what a person looks like.

In the first part, you will draw the person from your imagination, i.e., from your 'mind's eye'. In the second part, you will copy a drawing of a person given to you. In the third part, you will flip this drawing upside down, which will force you to copy it as a set of lines. What you should find is a dramatic difference between drawing what is in your head (part 1) *vs.* drawing your mind's interpretation of a drawing (part 2), *vs.* drawing what you actually see (part 3).

PART 1: DRAWING FROM YOUR IMAGINATION

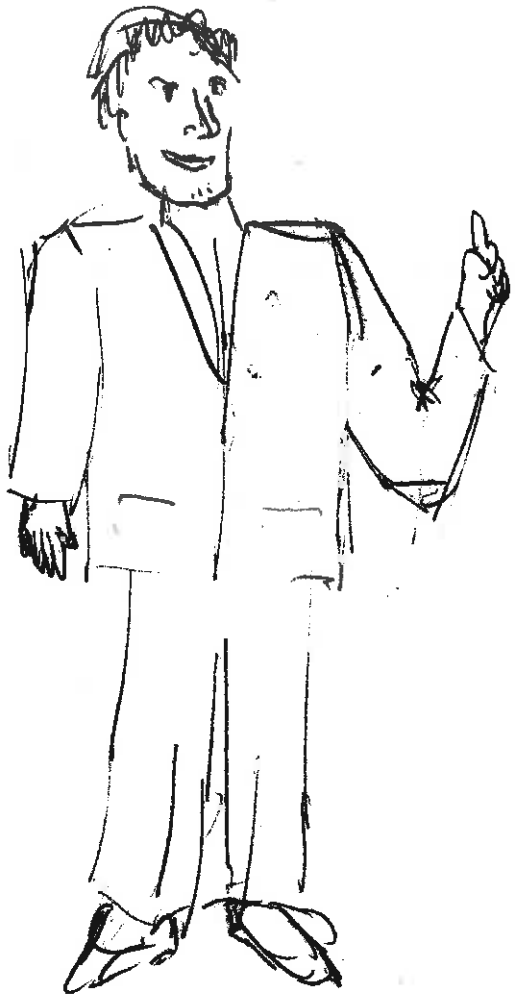
1 Gather your paper, pencil and drawing surface – a simple clip board is handy if you want to move around a bit. It is a good idea to use a relatively soft pencil (2B, 3B, 4B) but any pencil will do.

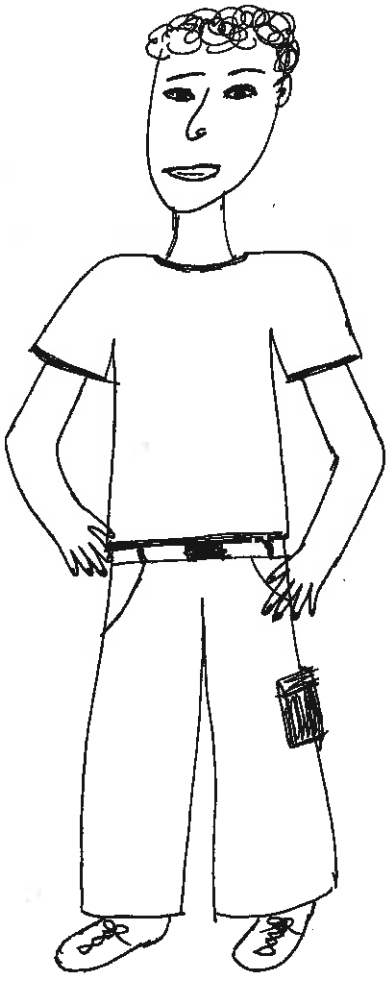


2 Establish yourself in a comfortable position for drawing with easy freedom of movement for your drawing hand.

3 Draw a person. You see people every day, and you have a well established idea in your mind of what a person looks like. Imaging that person, and simply draw him or her. This may be challenging, but give it a good try.

4 When done, be sure to keep the picture you created. You will need this image after Part II. Here are two drawings made by non-drawers who were given just these simple instructions.





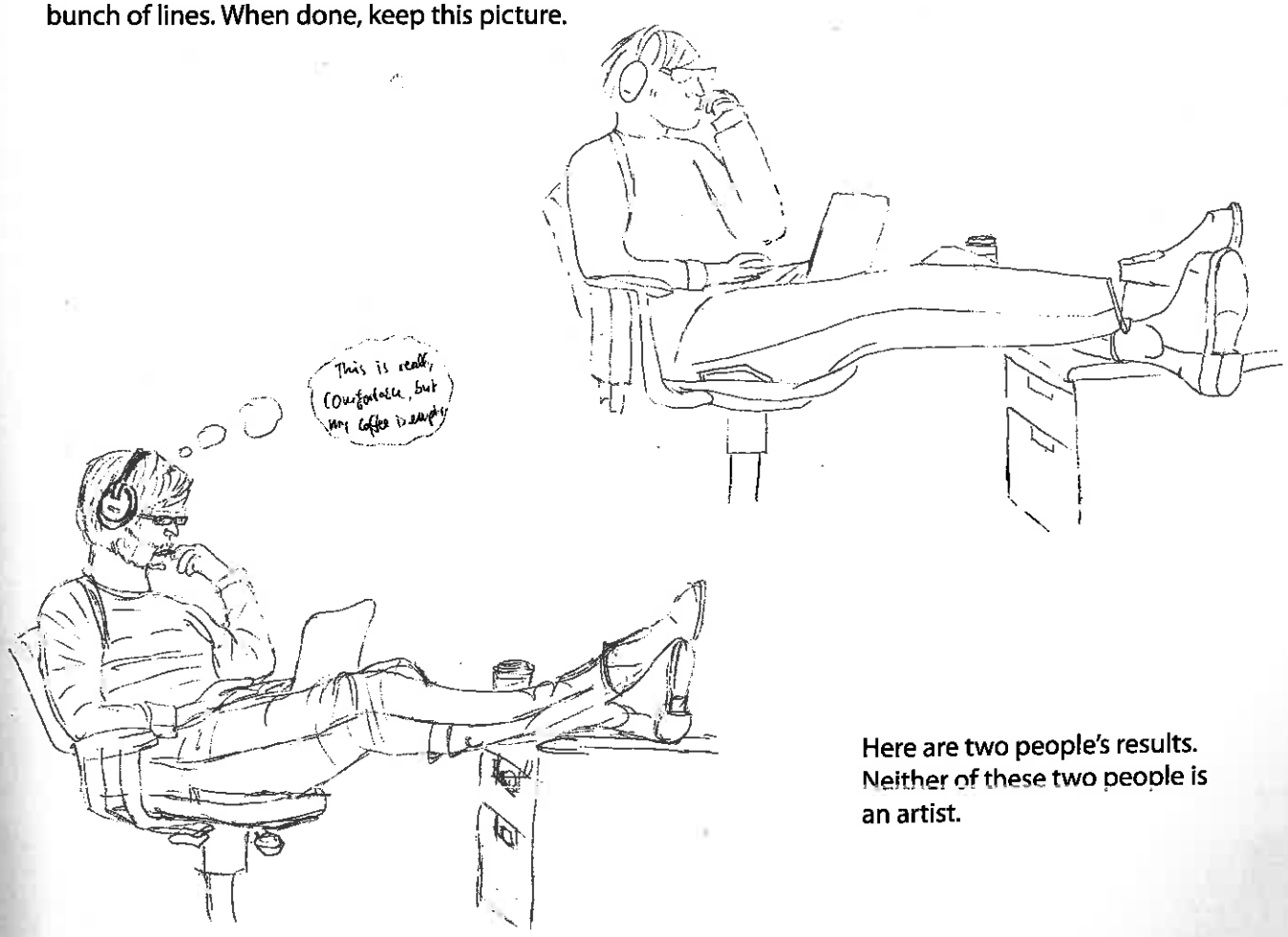
PART 2: COPY A DRAWING OF A PERSON

In this second and third part, you will copy a line drawing of a person. Here you will focus on the lines rather than thinking of this as a person. For starters, use the line drawing below, called ***Sean's Afternoon***, by Lindsay MacDonald.

1 As before, get your drawing supplies together and make yourself comfortable.

2 Place the picture of ***Sean's Afternoon*** in front of you. Look at the person in the drawing, then try drawing that person. Copy the drawing, but this time try to copy it as a collection of lines that you see rather than as an image of a person. This is harder than you think, for your mind will constantly see the person, not the lines, which in turn will distort how you draw.

It often helps to be systematic, as you may find it hard to keep track of what you have done vs. what is left to do. Start at one edge and proceed across. Follow the lines with your eyes. Draw each line thinking about its length, how it bends or how it goes straight. Look at how far apart that line is from its surrounding lines, and use that to position it on the page. Draw the lines you see, not legs, bodies, heads, or chairs. Don't label the body parts. Don't try to identify hands or feet. It is just a bunch of lines. When done, keep this picture.



Here are two people's results. Neither of these two people is an artist.

PART 3: DRAWING WHAT YOU ACTUALLY SEE

In this third part, you will copy the same drawing, but this time you will reorient the image you are copying to help you focus on the lines rather than thinking of it as a person. You will find that you can help yourself focus on the lines by orienting the image in a way that the lines do not particularly make much visual sense.

This trick of learning how to focus on the lines by orienting the image upside down, so that the lines do not particularly make much visual sense, has helped many people learn to pay more attention to their own observations while drawing. As Betty Edwards points out, orienting the image differently helps most people look more closely at what they are seeing.

Here is a person copying the image when placed upside down.

1 Place the picture of ***Sean's Afternoon*** in front of you. ***Rotate the image*** so it is upside down. This re-orients the image so it appears as merely a collection of lines rather than as a picture of a person. The important criteria is that it should change how you observe the image. Seeing the image as a collection of lines to be drawn one at a time is crucial.

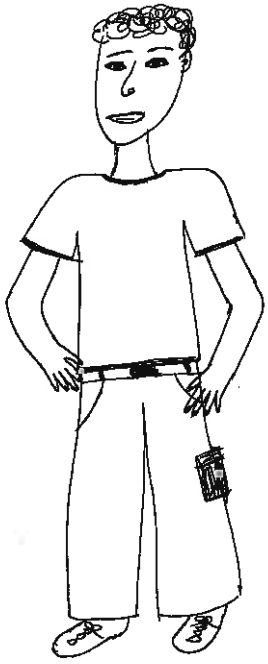
2 Copy the drawing, remembering to copy it as a collection of lines that you see rather than as an image of a person. This may be challenging but in a different way. You will have to ignore your mind's attempt to turn the lines into something recognizable. The best way to do this is to focus on the image details, such as drawing one line at a time. If you have trouble doing this, cover parts of the upside down drawing so you are only seeing the small portion you are currently copying. When you're done, keep this picture as well.

COMPARING THE RESULTS

Take your three pictures from parts I, 2 and 3, place them side-by-side, and examine them. The difference between your mind's eye drawing and the other two of ***Sean's Afternoon*** is often startling.

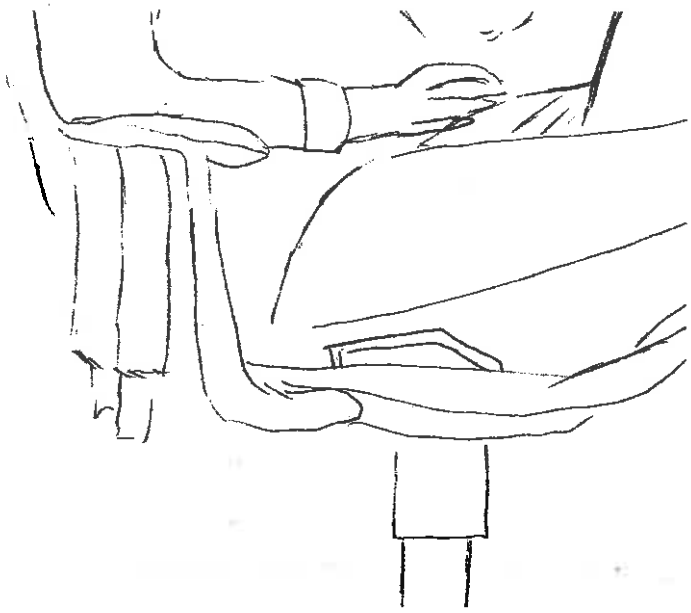
Then compare your two drawings of ***Sean's Afternoon***. While they will be superficially similar, you will probably find a large improvement in accuracy and detail in your upside-down copy.

Here is a sample of two images created by a non-artist, with part 1 on the left and drawings of ***Sean's Afternoon*** on the right.

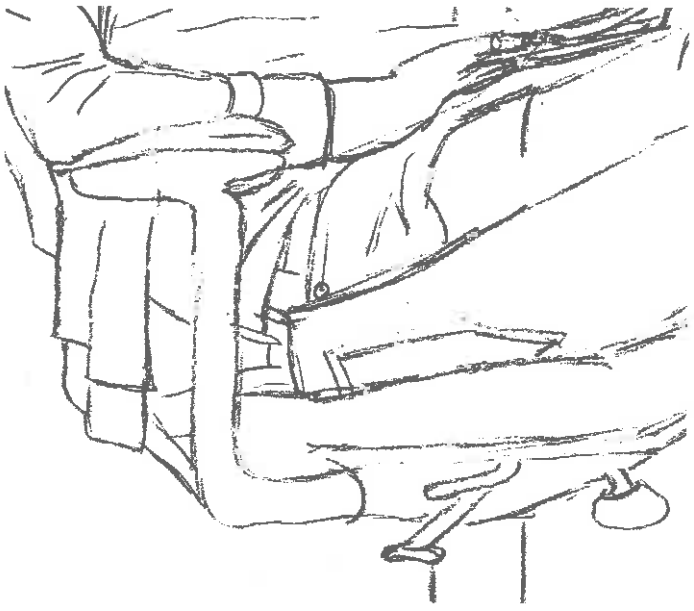


To make help make the differences between part 2 and part 3 clearer, the images on this page are cropped to show a portion of the chair. The improvement is clear, where the second drawing, which was copied from an upside down image, includes much more detail of the chair and has a more natural representation of the form of the elbow.

The point is that this improvement did not come from hours of practice, but from simply changing the way you observe the world.



This image was drawn with the source image facing right way up.



This image was drawn with the source image facing upside down.

The same student drew both of these, one immediately after the other. While the first image is recognizable as a person on a chair, the second image, drawn from upside down, is much improved. It still may not exactly match the original but it is much closer.

YOU TRY

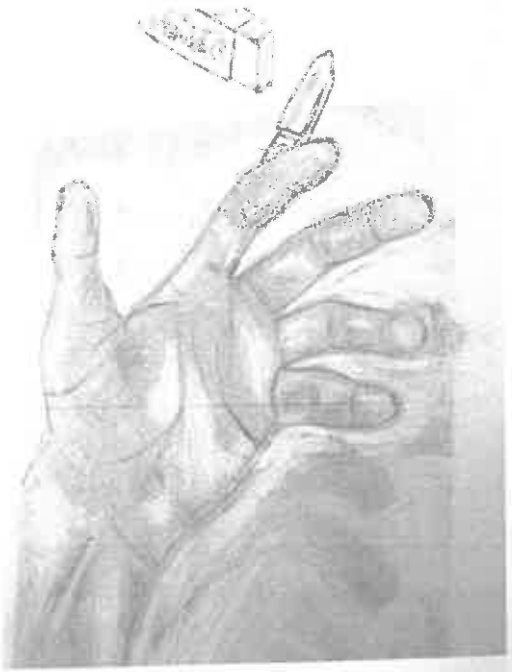
Repeat this exercise, not once, but many times. Betty Edwards recommends two excellent drawings that you can use for your next attempts, both readily available on-line by searching for the following terms.

- ***Portrait of Igor Stravinsky*** by Pablo Picasso
- ***A Court Dwarf (c. 1535)*** from the Fogg Art Museum

Make upside drawing a hobby to fill idle time. If you are stuck in a waiting room or on an airplane, look for images to copy in magazines (you will, of course, have your sketchbook and pencil with you: see Chapter 1.3).

Start with line drawing. Then move on to high-contrast photos, i.e., those with sharp edges, where you focus on drawing those edges. Then try to copy things in real life, beginning with simple hard objects (such as a chair), and progressing to softer objects (such as your hand). For hard objects, you will be looking for edges. For softer objects, you will be looking for both edges and for high-contrast features (such as wrinkles and folds in a hand). You can then start experimenting with shading by using the edge of your pencil to darken the blacker parts of what you see.

You will improve hugely with even a modest amount of practice. To illustrate, one of this book's authors (who had not drawn before) had taken a one-day course going through the above exercises. He was asked to draw his hand at the beginning and at the end of the day. His two sketches below show the difference, with the initial drawing on the left and the later drawing on the right. Unlike the first drawing, he concentrated in the second drawing on the lines that form the outline of the hand, the lines that form the wrinkles and tendons in his hand, and the light and dark areas that correspond to the shaded textures of the hand.



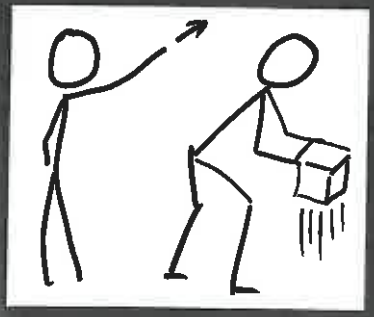
References

Edwards, Betty. *The New Drawing on The Right Side of the Brain*. Penguin Putnam.

YOU NOW KNOW

A large part of drawing is about observing accurately. Observing carefully is something we can all learn but it does take practice.

1. Assumptions about what things should look like can make drawing more difficult.
2. Drawing depends on observation.
3. You can draw better than you thought you could if you stick to direct observation only.
4. Observation and drawing is a skill that you can practice and learn.



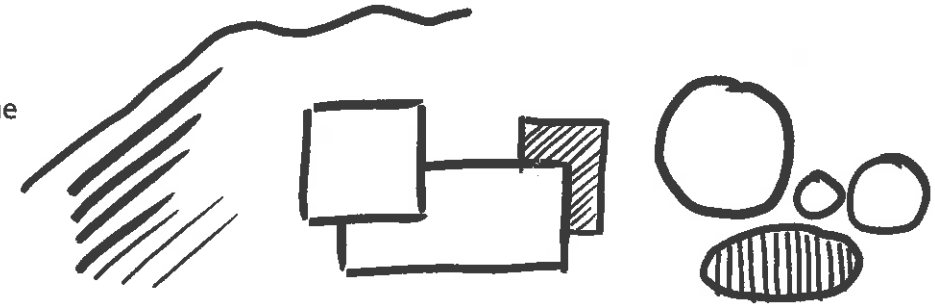
Sketching Vocabulary 3.3

drawing objects, people, and their activities

Many of your sketches will contain quite similar things – a **sketching vocabulary** of shapes. This sketching vocabulary serves as the basic elements of most sketches. If you practice creating this vocabulary, you will be able to rapidly compose your sketches. This chapter reviews several elements in the basic sketching vocabulary: objects, people, activities, emotions, and posture.

1 Basic Sketch Elements

Lines, rectangles, triangles, and circles will be essential visual elements of many of your sketches. Sketching and drawing tutorials often begin with 'warming up' exercises of filling a page with a random collection of these basic shapes. Become familiar with this variety of shapes. Play with line thickness and hatching styles.



Tip

People Who Sketch on Computers

Libraries of Sketch Elements

Designers sometimes use tablets instead of paper to compose sketches. If this is something you want to do, take advantage of software that lets you save and reuse your sketch elements as a library. For example, and similar to clipart, you can create a variety of elements and save them on a slide in PowerPoint. You can then copy, reuse and maybe even alter them later for use in particular sketches.

Objects

Most drawing software includes a range of drawing primitives: rectangles, circles, arrows, callouts, etc. When choosing software to support your sketching, consider if the range of drawing primitives available suffices to help you in your sketching process.

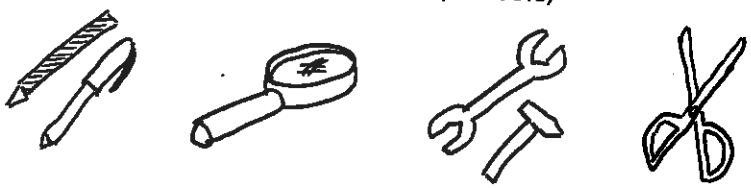
Clipart

If you use computers for your sketches, you can also take advantage of the many clipart or equivalent libraries of images out there. For example, if you search for 'stick men' on the web, you will likely find many images that fit your purposes.

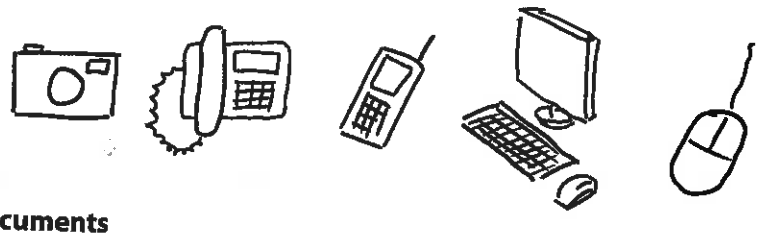
2 Composing Objects

By combining these basic sketch elements you can compose a variety of shapes and objects that will form part of your sketching vocabulary. Below is a collection of such composed objects – some drawn as simple two dimensional outlines, others in a perspective side view. Remember that simplicity is key: in many sketches it is better to draw objects as simple shapes rather than as detailed and fine grained objects. Note that many of the examples below are in fact very simple combinations of a few rectangles, circles, and lines, but that the level of detail is sufficient to clearly identify the object's function (e.g., the mobile phone, or the photo).

Tools
(pencil, pen, magnifying glass, wrench, scissors)

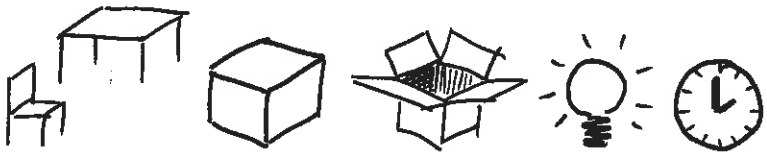


Digital Devices
(camera, phone, cell phone, computer, mouse)

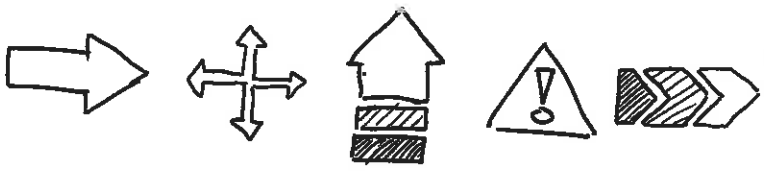


Documents
(paper, books, photos, piles)

Physical Objects
(tables, chair, boxes, light bulb, clock)

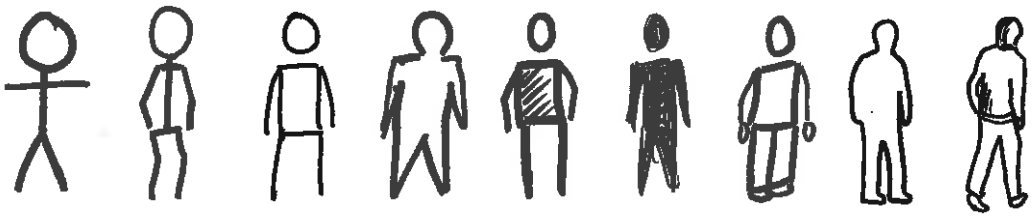


Abstract Shapes
(arrows, signs)

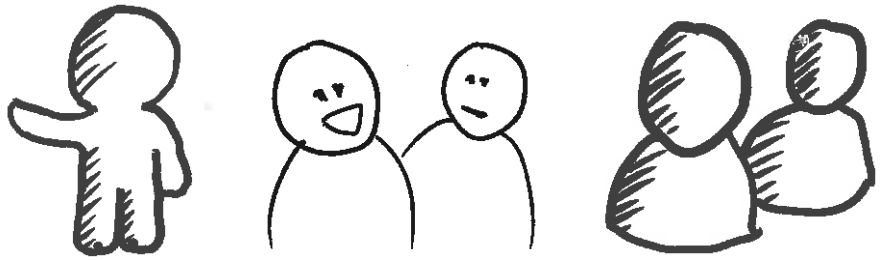


3 People

Many sketches in interaction design include people performing their actions, motions, and activities while interacting with information technology. There are many different techniques to draw people: from simple stick figures to detailed and realistic outlines of a person. Often, simple stick figures are preferable to detailed drawings of people: they are expressive enough to illustrate people and their actions in a variety of situations.

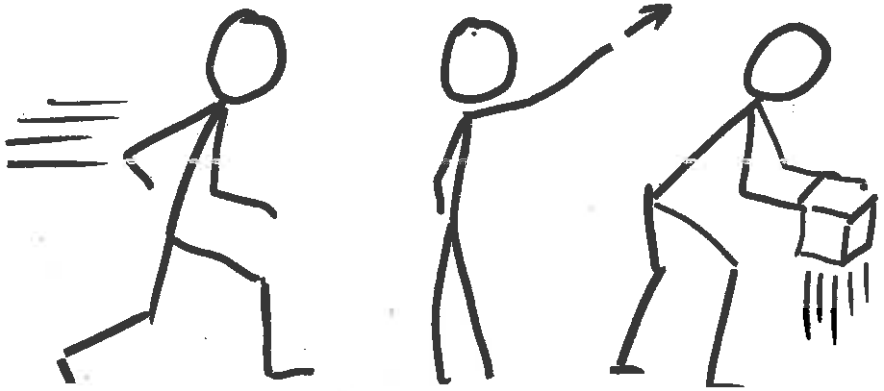


Alternatively, even comic-like sketches or abstract shapes can represent people in your sketches. The choice of drawing style depends on your preferences, but also on the type of sketch you create. For example, in a drawing that just suggests the presence of people, abstract shapes can be sufficient. But in a sketch of (say) a multi-user tabletop interaction, details about people's postures might be important to portray the interaction techniques.



4 Activities

By varying people's poses you can express a variety of different activities. For example, the sketches below show a person's activities, e.g., running, pointing, lifting a box. Notice how two of the sketches use action lines (also called motion lines) to illustrate the movements of the person's activity (also see Scott McCloud's ***Understanding Comics***).



Tips

Learning How to Sketch

This chapter introduces but does not teach you all the different techniques of how to draw. Many books and tutorials are available if you want to improve your drawing skills.

For example, Betty Edward's ***Drawing on the Right Side of the Brain*** or Kurt Hanks and Larry Belliston's ***Rapid Viz*** books are excellent primers of drawing and sketching techniques.

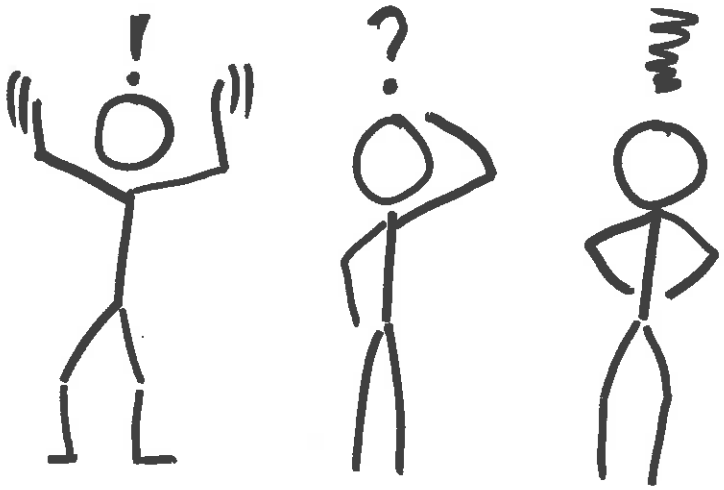
Tip

Comic Storytelling
Comic artists use these and many other techniques for their expressive sketches to tell stories. Scott McCloud's books ***Understanding Comics*** (1993) and ***Making Comics*** (2006) can give you more insight about story telling in comics.

As well, look for the many books – especially those oriented to kids – that teach specific methods on how to actually draw comics.

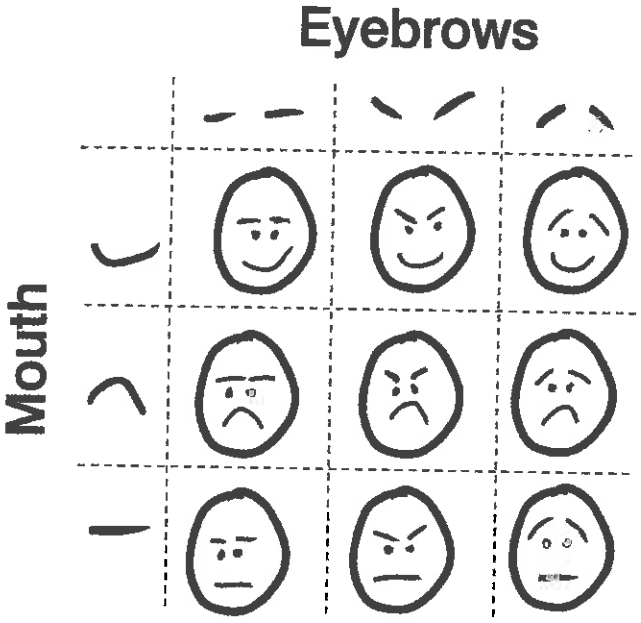
5 Bodies and Emotions

Different postures can also show the state of the person: surprised, puzzled, disgruntled. Here, we also used symbols above the head of the person (in addition to posture) as an additional indicator of a person's state.



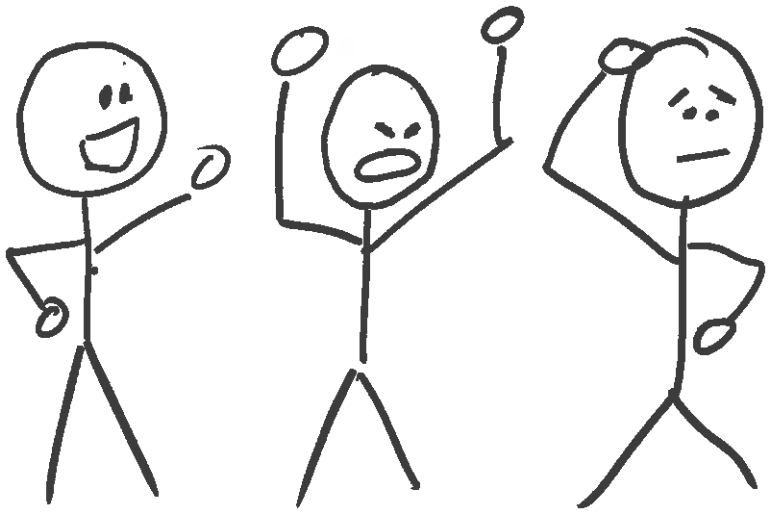
6 Faces and Emotions

Through simple variations of how you draw people's faces (in particular their mouth and eyebrows) you can let your sketched people express their emotions. The 3x3 grid illustrates 9 different combinations of how to draw people's faces, simpy by the way you remix 6 eyebrow and mouth shapes. The result is expressions such as: happy, relieved, sad, angry, confused, or surprised.



7 **Combining Postures and Faces**

Adding a body posture matching the person's facial expression can amplify how you communicate the person's current emotional state. For example, this sketch shows a person in three different moods: happy and waving the hand, angry and raising the arms, and scratching the head while being confused.



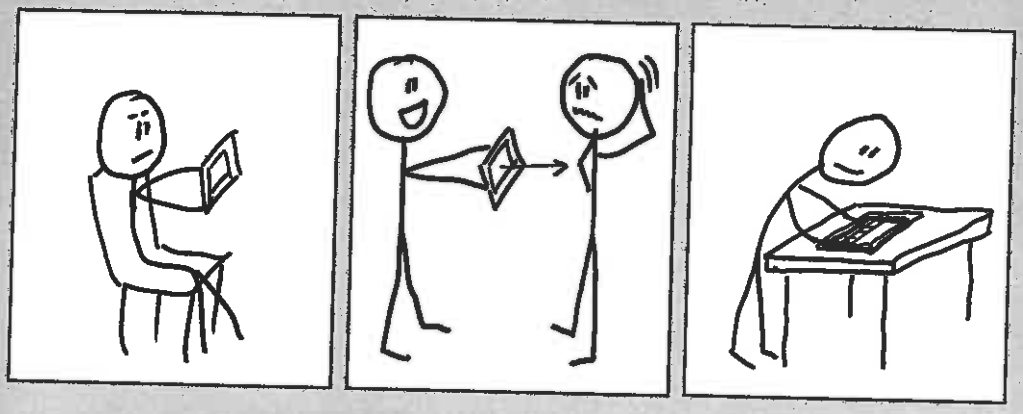
8 **Combining Different Sketch Elements to Illustrate Situations**

You can combine these postures of people and the simple objects to compose simple sketches that illustrate specific situations and actions. For example, the sketches below illustrate a person in different moods and situations: happy while being on the phone, confused while deciphering a map, and sad while searching the floor for a lost item.

Exercise

Draw a person interacting with a tablet computer in three different situations. For example, you can draw the person while sitting on a chair and reading a book, while showing a document on a tablet to a second person, and while placing the tablet on a table to write a text. Try to vary people's poses and facial expressions.

Our Solution:



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Hanks, K. and Belliston, L. (2006) *Rapid Viz: A New Method for the Rapid Visualization of Ideas*. 3rd Edition, Course Technology PTR.

McCloud, S. (1993) *Understanding Comics. The Invisible Art*. Harper.

McCloud, S. (2006) *Making Comics: Storytelling Secrets of Comics*. Manga and Graphic Novels. Harper.

YOU NOW KNOW

You learned how to build up a sketching vocabulary of simple shapes, objects, and people. By varying postures and facial expressions you can illustrate people in different situations. The sketching vocabulary functions as a starting point for many of your sketches about people's interaction with technology.

But don't stop here! Look for the many primers that teach people how to sketch, especially those oriented toward kids and comic books. As we keep on repeating, you don't have to be a superb artist to sketch. But you will find that knowing and practicing a few of the basics will help you immensely over time.

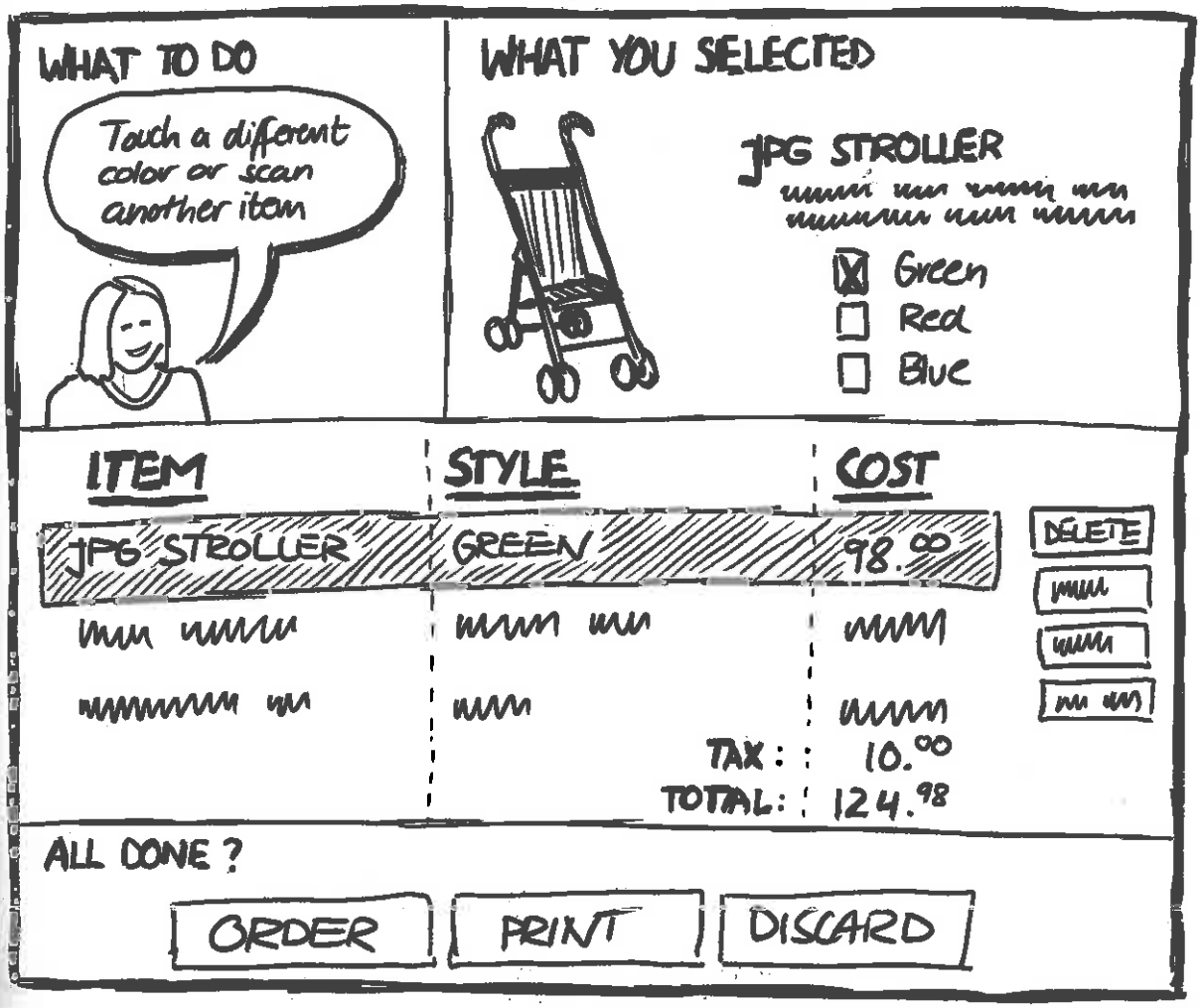
The Vanilla Sketch 3.4

basic elements of a sketch:
drawing, annotations, arrows and notes

There are an infinite number of ways you can create a single sketch. However, most simple sketches will comprise the drawing along with optional annotations and notes.

THE DRAWING

The drawing is what most people think of as the result of a sketching activity. For example, the figure below is a sketch of the main screen of an interactive shopping system, expressed solely as a drawing.



Tip

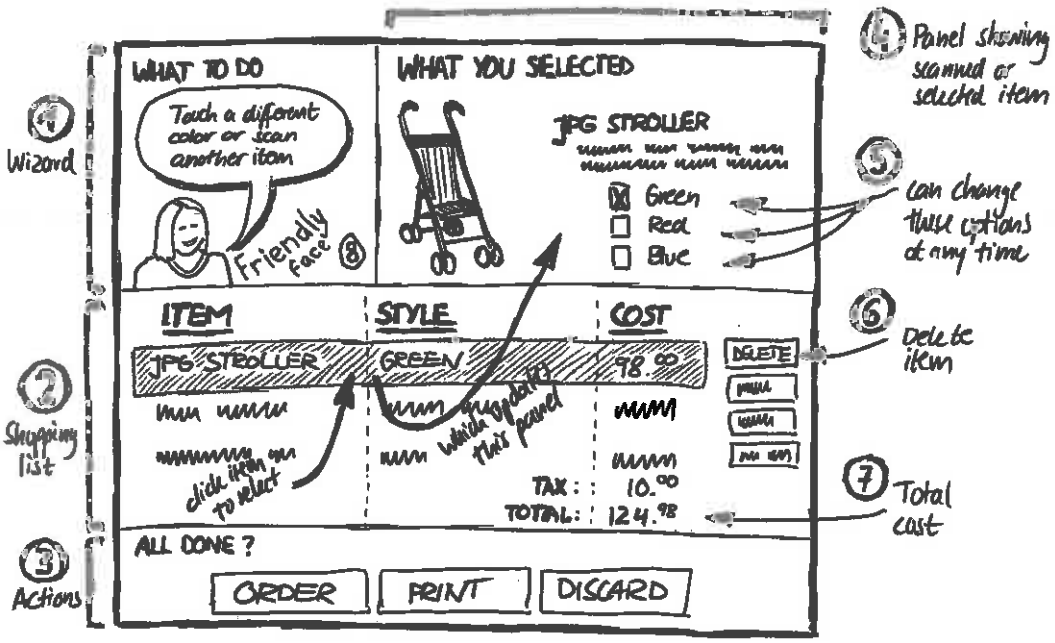
Some people are entirely visual, where their drawing will rarely use notes or annotations. Others (especially those brought up in non-design or non-arts disciplines) are entirely textual, where drawings are rare. If you are one of these extreme cases, make a point of producing sketches that balance drawing, annotations and notes.

ANNOTATIONS

Annotations are names, labels and explanatory notes whose spatial location identifies the part(s) of the sketch they refer to. That is, annotations are graphical marks that are incorporated into the drawing itself.

Sometimes, their location relative to a part of the drawing is enough to connect the annotation with a particular sketch element. Other times, arrows, lines or braces may clarify that spatial relation. For example, the sketch below now includes annotations. This particular sketch shows various labels and explanatory notes that:

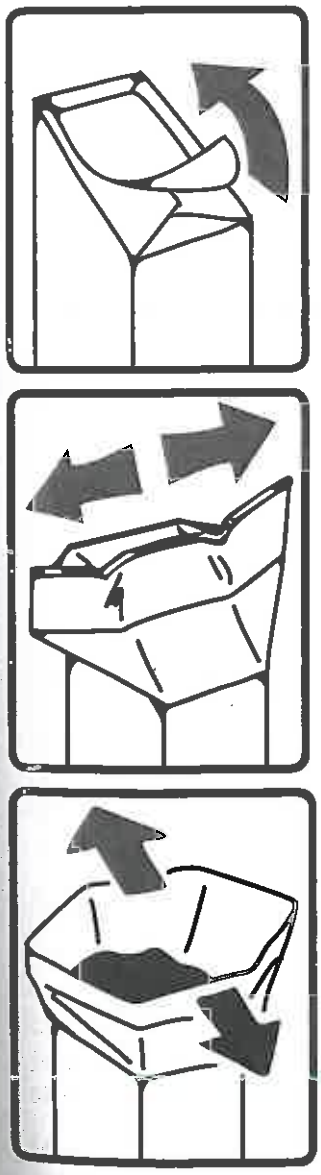
- indicate particular areas of the sketch via braces (e.g., those numbered 1–4 and 7),
- point to specific elements via one or more arrows (numbers 5 and 6),
- are associated by only their spatial placement, such as the label explaining the caricature (number 8),
- indicate dynamics of elements or interactions over time (labeled arrows in the middle of the figure).

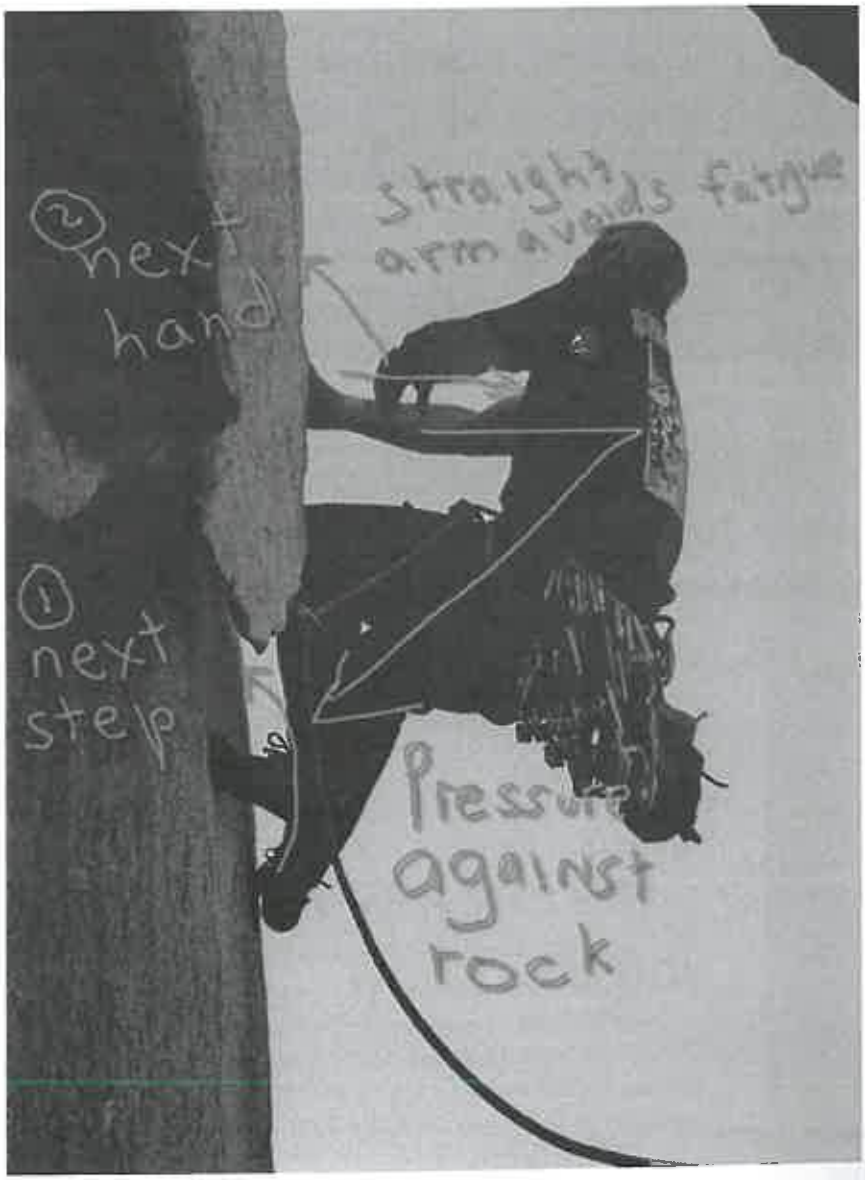


Arrows as Annotations

Arrows deserve special mention as part of an annotation. We already saw in the previous sketch how they can be used to point to one or more areas of the drawing. Arrows can also be used to relate different parts of a drawing, to indicate direction, to show movement, to indicate a sequence of events, to indicate interaction flow.

For example, the set of images on the left below are directions in opening a box, where arrows eloquently indicate the interaction flow and movement (taken from Mijksenaar and Westendorp, 1999). The image on the right is another example, where in this case the person has annotated a photograph of a rock climber to indicate numbered sequences of events, where arrows and labels indicate directions, force, and movement.





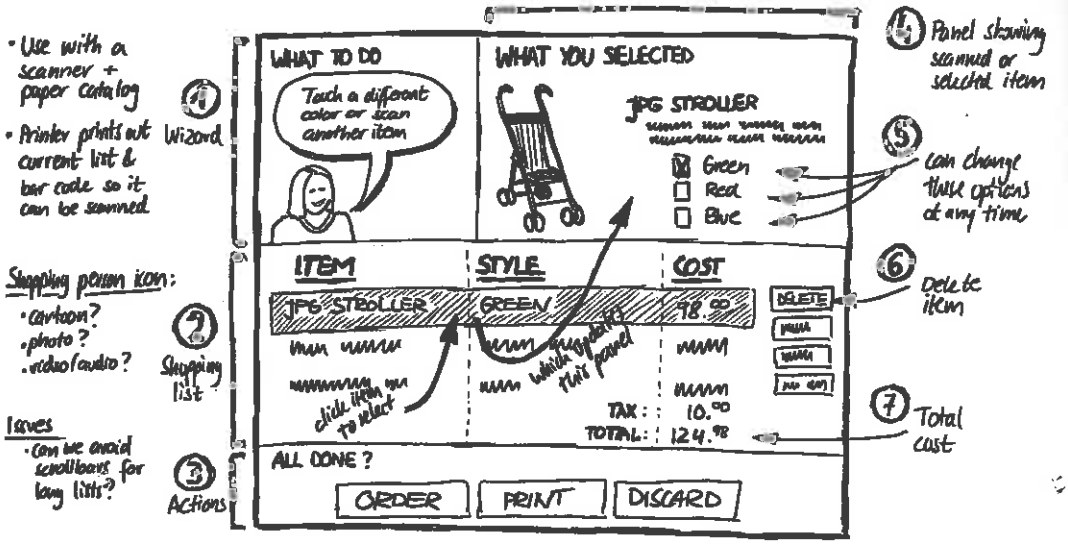
Note

Further inspiration can be found in Mijksenaar and Westendorp's book ***Open Here***. It collects myriad example images used to instruct people, including the opening of the box sequence reproduced here on the previous page. Arrows predominate in many of them. Also, many of its graphical designs incorporate annotations.

Start your own collection by gathering the ones that stand out for you, where you place them in your found objects collection (Chapter 2.3).

NOTES

Notes are any text incorporated in the sketch where its spatial location relative to parts of the drawing is not important. For example, this 3rd version of the sketch has several notes included on its left side. Notes can be anything: ideas about design elements not included in the drawing (top note), alternate design options of elements within the sketch (middle note), a set of issues (bottom note), explanations, alternate ideas not yet sketched out, outstanding questions, and so on. They can be paragraphs, words, sentence fragments and lists.



Both annotations and notes are there to help you elaborate your ideas about your drawing, especially so you can recall them later. Freely use annotations to elaborate your drawing, especially if a few words will help you explain various (possibly obscure) drawing elements, e.g., what they are, how they behave, the abstract concept it represents. Freely use notes to capture thoughts about the drawing as a whole. Don't worry if your sketch is text-heavy; if it helps you , then the sketch is serving its purpose.

References

Mijksenaar, P. and Westendorp, P. (1999) *Open Here. The Art of Instructional Design.* Joost Elffers Books, New York.

YOU NOW KNOW

Sketches are more than just drawings. They can incorporate spatially relevant textual annotations, or stand-alone textual notes. Arrows are a special kind of annotation that provide quite a bit of illustrative power.