

inspection processes needed to derive new descriptions. In the diagram in Figure 7.6, I have shown these contrasting translation processes occurring in parallel on the same sketch. It goes without saying that similar percept-memory hybrids can also facilitate descriptive-to-descriptive and image-to-image translation by accessing association memory. In her unique protocol studies of architects sketching, Gabriela Goldschmidt showed that, while sketching, architects' thought processes alternate between "seeing as" and "seeing that." Although the terminology is different, I interpret her findings as fully consistent with the cognitive descriptive to depictive translation "catalysis" metaphor described here. "The dialectics of sketching is the oscillation of arguments which brings about gradual transformation of images, ending when the designer judges that sufficient coherence has been achieved" (Goldschmidt 1991).

The Yamazaki Serving Collection: A Design Example

Robert Welch is a British silversmith and product designer who has worked a great deal in stainless steel. He tells me that he has always drawn, not only when designing, but also for its own sake. He is also a painter of quality.

Yamazaki is a Japanese company that has been involved in the production of stainless steel since 1918. In 1980 they decided to enter the American market with a range of stainless steel tableware. In 1981, after competing with four other designers, Robert Welch was selected to design a range of serving vessels – "the Yamazaki Serving Collection." The designs had to be distinguished in appearance to compete with silver and silverplate and yet be modern in feeling, for the market was believed to lie between the ages of 20 and 40. Yamazaki wanted the designer to give stainless steel a new look. The project well illustrates the use of sketches to translate descriptive constraints to depictive form. In Welch's own words, "What was needed was a brand new look for stainless steel which had nothing to do with severe forms and satin finishes" (Welch 1986). So an early generative idea was that the vessels needed a surface relief or fluting that would exploit the beautiful mirror-like reflectivity that Welch knew highly polished stainless steel could exhibit. Over 17 months of "design thought" Welch produced hundreds of drawings. Because it was not practical to make satisfactory models of most of the pieces, the drawings had not only to support Welch's own mental models of the designs but also to communicate his ideas to his client. Only two designs were ever fully modelled; the others were accepted as technical drawings only.

The design stages have been documented by Alan Crawford:

The designer and the manufacturer both had to make an act of faith in the drawings. Aware of this element of risk, Robert Welch found himself making many more drawings than he would normally have done, going over parts of the design again and again to convince himself that it would work . . . There was no question of trial runs; Robert Welch did not visit the factory. Once the technical drawings had left his studio in the idyllic little town of Chipping Campden in the Cotswolds, the design was out of his hands. During the second half of 1982, he could do nothing but wait. Then in February 1983, he drove to London to receive the first consignment of the Collection. One can imagine the nervous excitement with which he unpacked the parcels at the airport.

(Crawford 1983)

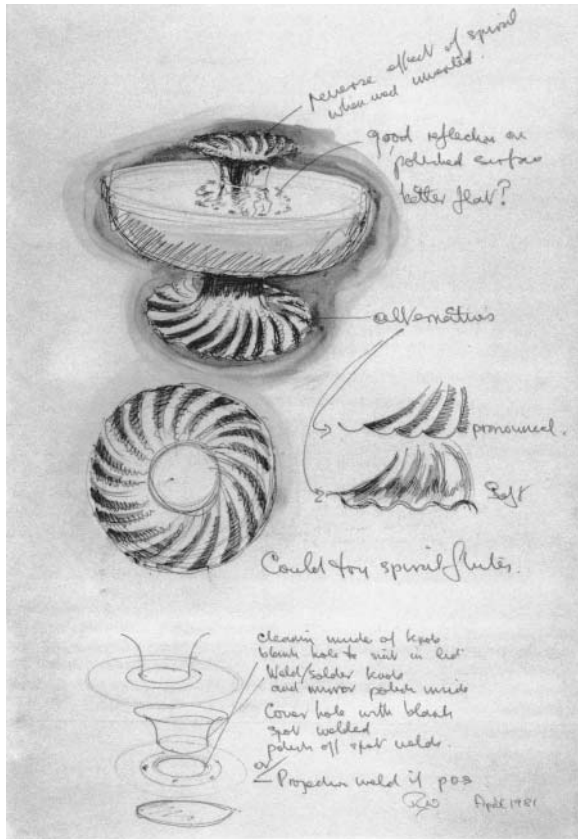


Figure 7.7 Sketch for a covered bowl (Robert Welch).

Figure 7.7 shows an early sketch for a covered bowl. It illustrates beautifully the use of a sketch to support the descriptive to depictive translation process. The spiral flutes that were finally to form such a feature of the Collection are already present, but their form is far from certain. Notice the deliberately fuzzy representation of the reflection catching the fluting and the attached written notes. One note that points to the handle of the lid reads “reverse effect of spiral when used inverted.” This would surely catalyze a mental image from Welch’s experience. Another reads “good reflection on polished surface . . . better flat?” Here the note preserves two possible alternatives as only an intermediate depictive–descriptive representation could. An even clearer branch point in the descriptive–depictive tree of design thought is shown by the label “alternatives” pointing to two detail sketches of fluting types “pronounced” or “soft.” The sketch at the bottom of the sheet explores ways of assembling the bowl that would make it straightforward in production and easy to clean. The covered bowl did not eventually form part of the Collection. It only ever existed in Welch’s mind.

Another design idea was later discarded – that of decorating the surfaces with a pattern of vertical lines (Figure 7.8). Several of Welch’s drawings at this