

# Marie Neurath: designing information books for young people

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*The Gower Handbook of Information Design*, pages 117–126

This chapter describes the process of transformation undertaken by Marie Neurath and others in the 1940s and 1950s at the Isotype Institute in London while working on the design of information books for children. It provides examples of a working method that will be familiar to information designers today.

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Christopher Burke (2013) has commented that the Isotype idea of the ‘transformer’ can be regarded as ‘a prototype of the modern information designer’, echoing Robin Kinross’s view that transformation gives Isotype a place ‘in the large and fruitful field of design for meaning.’ Kinross continues: ‘In this way of working, one tries as a designer (in the widest sense of the word) to make sense of the material and let it find good order, both for the sake of the material itself and for the sake of the people reading and using it’ (see Neurath and Kinross 2009, 77–8). Marie Neurath’s retrospective explanation was based on a lifetime’s work:

It is the responsibility of the ‘transformer’ to understand the data, to get all necessary information from the expert, to decide what it is worth transmitting to the public, how to make it understandable, how to link it with general knowledge or with information already given in other charts. In this sense the transformer is the trustee of the public. He has to remember the rules and keep to them, adding new variations where advisable, at the same time avoiding unnecessary deviations which would only confuse. He has to produce a rough of the chart in which many details would have been decided: title, arrangement, type, number and colour of symbols, caption etc. It is a blueprint from which the artist works. (Neurath 1974, 136)

The children’s books produced by the Isotype Institute in London provide an excellent example of what transformation entailed, supported by notes and sketches in the Otto and Marie Neurath Isotype Collection at the University of Reading.<sup>1</sup>

- 1 The Otto and Marie Neurath Isotype Collection [IC] is the most comprehensive archive of Isotype materials. It documents methods of designing and disseminating data that have played a major role in twentieth-century graphic design thinking. Given to the University of Reading by Marie Neurath in 1971, the collection includes documents, correspondence, published works, and artefacts relating to the history, principles, working methods, and products of Isotype, from its beginnings in 1920s Vienna through to its later incarnations in The Hague, Oxford, and London. For further information about the acquisition of the collection see M. Twyman, ‘Isotype and the University of Reading’ at <<http://isotyperevisited.org>>.

This material demonstrates reliance on working in teams, following agreed principles and rules, and iteration, and feedback at all stages in the process. As a way of working it may not seem unusual in the twenty-first century, but in the 1940s the approach taken to the design of books for children was most unusual.

Between the end of the 1940s and the start of the 1970s Marie Neurath and her team produced over eighty books for young people, even when counting translations into other languages. They include the ‘Visual history of mankind’ published in 1948, ‘Visual science’ (1950–1952), and ‘Wonders of the modern world’ and ‘The wonder world of nature’ published in the 1950s and 1960s (see Walker 2013). Some of the charts in these books were transformations of statistical information, but most resulted from the distillation of all kinds of written and pictorial information retrieved from books, newspapers, consultation with experts, museums, and libraries. The books produced show a wide range of approaches to visual organisation underpinned by Isotype principles of comparison, consistency, and access to the information on a number of levels. In the books for children these approaches included:

- narrative explanations that tell a story, describe a sequence of events or a process, or show how something works
- comparisons between things, or over periods of time
- representations of distance, quantity, and time
- showing how internal and external spaces are used, including the proximity of land masses and relationships between them

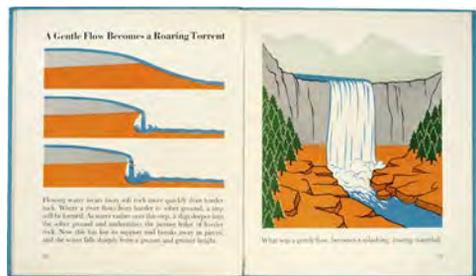
Marie Neurath and her team used a ‘toolkit’ of graphic techniques, such as the use of colour, breaking objects down into component parts, cross section, before-and-after representations, and the use of keys and graphic devices such as arrows (see Table 1 for some examples).

Notes and drawings in the archive suggest particular ‘stages’ of activity in the process of designing. Table 2 shows these stages and the key people who worked on the ‘Visual history of mankind’. Once the concept for this series had been agreed by the editorial team (see Walker 2012), the design of each chart involved research to ensure accuracy of content, followed by explanation of this content in a visual form that could be easily understood by young people. For the ‘Visual history of mankind’, unlike the other children’s book series, the text was drafted as a series of questions after the charts had been designed. Working from a final ‘rough’ or ‘blueprint’<sup>2</sup>

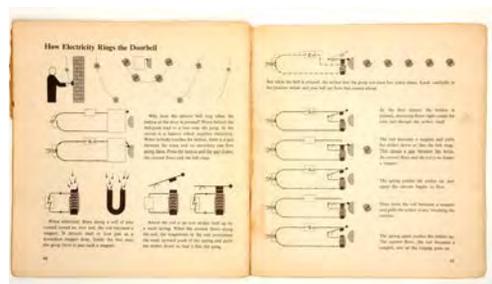
2 These words appear to have caused confusion. Maurice Chandler (from the production team at Adprint), for example, commenting on the preparatory work for the ‘Wonders of the modern world’ series in 1954 wrote: ‘Incidentally, we have come to the conclusion that the word “rough” as we have used it in the past is becoming a little confusing. We are, therefore, asking if you will please in future use the word roughs to apply only to the drawings that are in the same state of development as you have now reached in LONG AGO [*The wonder world of long ago*, London: Max Parrish, 1954]. Final drawings from which astrofoils are to be made should now be referred to as blue-prints.’

**Table 1** Some of the graphic techniques used by Marie Neurath and her team, with examples from children's books

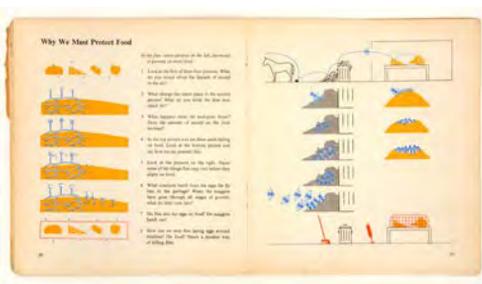
Juxtaposition of diagrammatic and real-world images



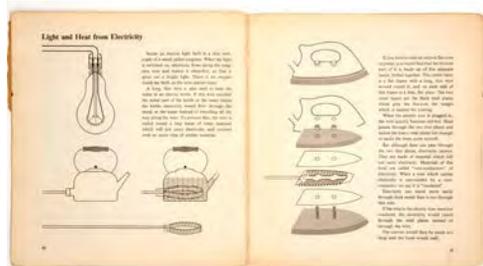
Repetition of the same base image to demonstrate an action



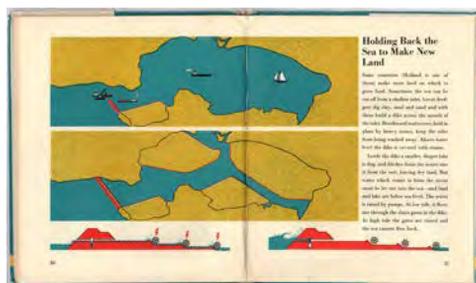
Or modification to show something is changing



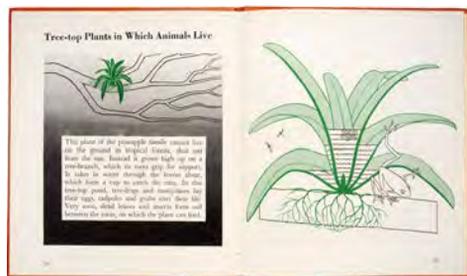
Breaking down into component parts



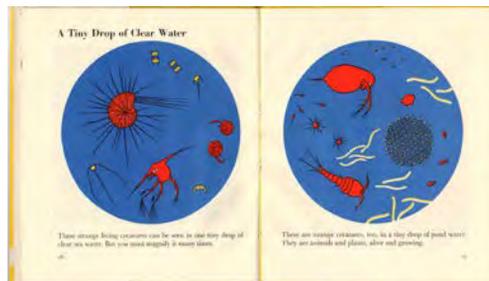
Before-and-after treatment



Scale



Magnification



Images from: *The wonder world of land and water*, 1957; 'Visual science', Book 3, 1951; *Building big things*, 1958; *Strange plants*, 1956; and *Too small to see*, 1956.

**Table 2** Designing and producing the ‘Visual History’: an overview

CONCEPT	RESEARCH	TRANSFORMATION		
<i>Ideas and planning</i>	<i>Content and data</i>	<i>Explaining the data</i>		
<i>Including</i> Overall scheme for series Content or each volume Educational approach Production needs Marketing	Libraries/museums Newspapers/journals Correspondence with experts	Distilling information	Thinking through drawing	Final sketch: the blueprint for each chart
.....				
<i>Iteration and feedback throughout this stage</i>				
<i>Personnel involved in each stage</i>				
<ul style="list-style-type: none"> <li>• Otto Neurath</li> <li>• Marie Neurath</li> <li>• Wolfgang Foges</li> <li>• Walter Neurath</li> <li>• Max Parrish</li> <li>• Joseph Lauwerys</li> <li>• Lancelot Hogben</li> </ul> <i>and others, as part of an ‘editorial team’</i>	<ul style="list-style-type: none"> <li>• Ilse Reisenbach</li> </ul>	<ul style="list-style-type: none"> <li>• Otto Neurath (<i>Books I and II</i>)</li> <li>• Marie Neurath (<i>transformer</i>)</li> <li>• Clive Weatherhead (<i>transformer</i>)</li> <li>• Professor Gordon Childe (<i>expert opinion</i>)</li> </ul>		

the designers produced a finished drawing and specified type, which was supplied as galley proofs, for making the artwork for printing. In the case of the ‘Visual history of mankind’ a pre-publication review copy was made and circulated for comment.

Perhaps indicative of the collaborative ethos that both Otto and Marie Neurath considered important, there was much overlapping and sharing of roles: the designated ‘designers’, for example, undertook research, and commented on the wording of the text. Marie Neurath was actively involved in the supervision of various stages of the work from writing briefs for those involved in the research, to annotating final drawings with comments about accuracy and detail. Additionally there was close and rigorous scrutiny by Adprint, usually by Max Parrish and Maurice Chandler, and frequent advice from Joseph Lauwerys.

### Transformation in practice

Much of the process of transformation involved thinking and planning through sketching and drawing. Sketches, of varying levels of finish and detail and using different tools, demonstrate how ideas were developed and refined.

The use of the double-page spread to contain text and pictures related to a particular topic was unusual in information books for children published in the 1940s and 1950s. Marie Neurath and her team worked out the disposition of text and pictures from the first, very rough stages of

WRITING THE TEXT	PRODUCTION FOR PRINT			PRE-PUBLICATION REVIEW
Drafting and redrafting the questions to accompany charts	Final drawings for elements of charts	Typesetting	Artwork for printing	Proof copy sent for comment
<i>Iteration and feedback throughout this stage</i>				
<ul style="list-style-type: none"> <li>• Joseph Lauwerys</li> <li>• Otto Neurath</li> <li>• Marie Neurath (<i>Book III</i>)</li> </ul>	<p><i>Designers, including</i></p> <ul style="list-style-type: none"> <li>• P. G. Findlay</li> <li>• Dennis Young</li> <li>• Barbara Young</li> <li>• Olga Bursill</li>   <li>• Maurice Chandler</li> <li>• Max Parrish</li> <li>• Marie Neurath</li> </ul>	<p><i>Including</i></p> <ul style="list-style-type: none"> <li>• Kenneth James</li> <li>• Arthur French</li> </ul>		

planning. One of the key challenges of transformation was the distillation of large amounts of information into spreads that contributed to the topic being covered in the book.

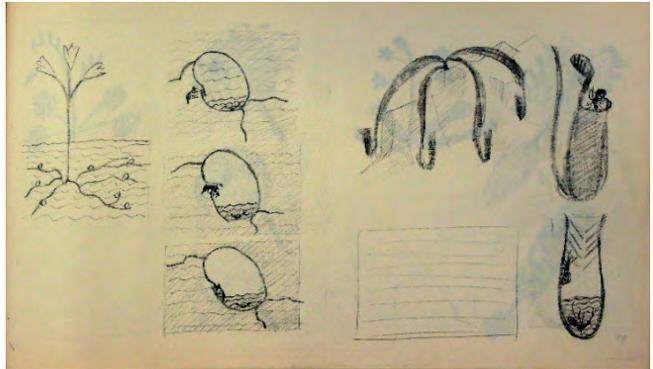
The planning of each of the books took different forms including making small dummies to work out the sequence of spreads, sketches of varying levels of finish for each spread, and numerous drafts of texts written to fit their allocated space adjacent to illustrations. Unusually at the time, and indicative of current information design good practice, the text and the illustrations were worked on concurrently and close attention was paid to ensuring that both verbal and visual explanations were appropriate for the relevant age of children that the book was being designed for.

For most of the children's books, the first stage in the design process was the gathering of accurate information as a basis for the charts and the accompanying text. This involved identifying relevant source material in the form of books, illustrations, newspaper articles and museum catalogues, engineering drawings and plans, maps and diagrams (Figure 1, overleaf).

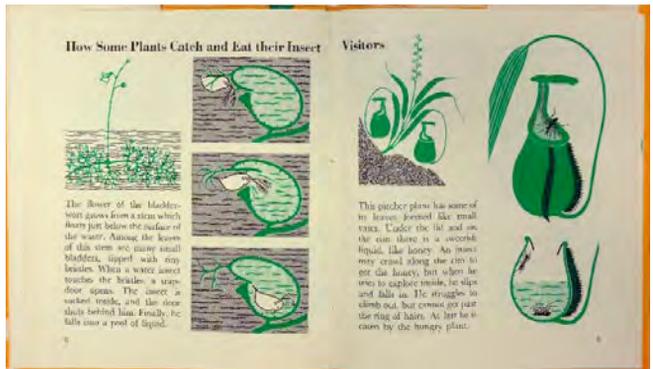
Marie Neurath and her team used a variety of different approaches to designing the spreads including the use of carbon-copy books that were the same size as the spreads in the book. The transformers drew on the top sheet adding colour as appropriate, and these top sheets were then given to the designers and artists who produced the final artwork for printing. The bottom copy of the sketches was retained as a record (Neurath and Kinross 2009, 21; Figure 2, overleaf).



**Figure 1**  
Source material for *The wonder world of birds*, 1953.



**Figure 2**  
Bottom copy sketch from one of Marie Neurath's carbon-copy notebooks and resulting spread from *The wonder world of strange plants*, 1956, pp. 8–9.

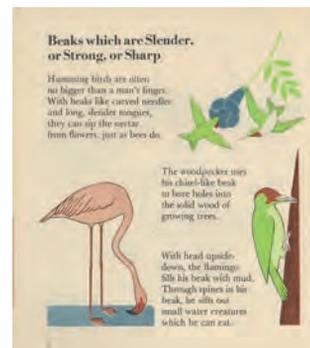
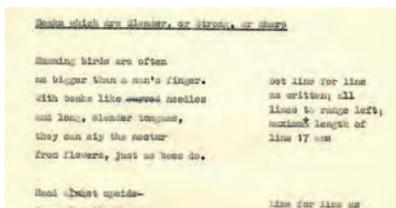


Sometimes the designers made ‘mini books’ to work out how the spreads were positioned throughout the book. The integration of text and pictures during the sketching process ensured close alignment of verbal and visual content (Figure 3). Further evidence of the care taken with the text indicates careful drafting of the text and sometimes a line-for-line specification for typesetting (Figure 4).

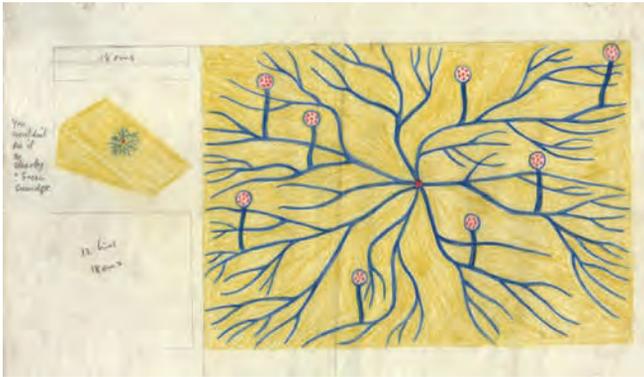
### Iteration and feedback

In all her work, Marie Neurath recognised the value of feedback, including the views of teachers and children (Neurath and Kinross 2009, 450).

**Figure 3**  
 Sketches and  
 resulting spread  
 from *The wonder  
 world of animals*,  
 1952, pp. 8–9.

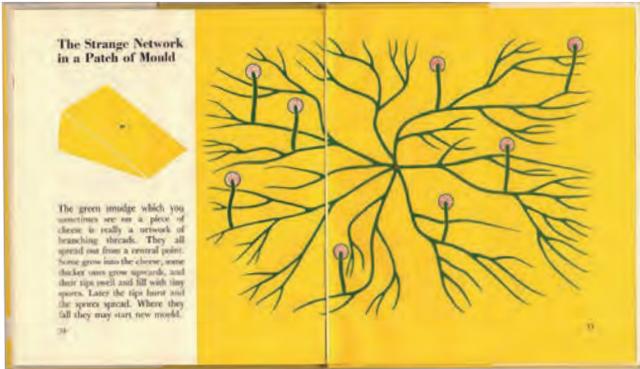


**Figure 4**  
 Line for line specification  
 and resulting spread  
 from *The wonder  
 world of birds*, 1953, pp. 6–7



**Figure 5**

Sketch showing Marie Neurath's comment 'You wouldn't see it so clearly? green smudge', and resulting spread from *Too small to see*, 1950.



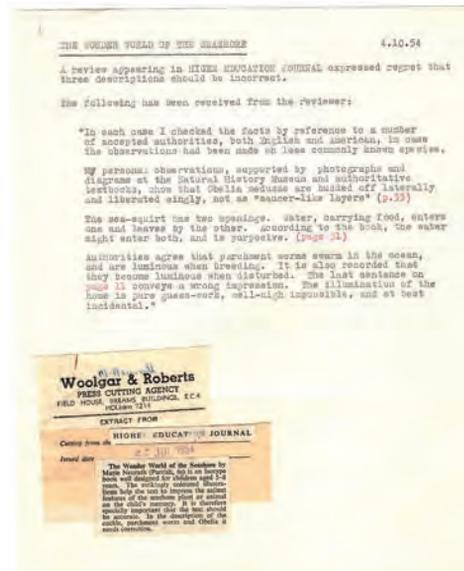
**WONDER WORLD OF THE SEASHORE** J11 26.5.53  
Comments on Astrafoils

Page	Subject	Comment
6/7	Fiddler Crabs	Astrafoils marked BLUE should presumably be marked GREEN.
8/8	Laguna	The worm appears to be travelling away from the cockle. Why is the tunnel he is making already complete, including an exit?
9	Fram	His tunnel seems to have disappeared. Our story is that 'he is sitting by the entrance of his tunnel waiting for food'.
9/9 (as above)		Please mark separations BLACK and GREEN.
10	Tan worms	---
11	Tube Worm	Is this supposed to be just below the sand on the seashore? Mr. Chandler has called it an Atlantic worm and I've rather got the feeling that it's a deep sea creature. ** Rough shows weeds. Finished astrafoils no weeds.
12	Anemones	Please draw in rock. Anemones are not clinging to anything at present.
16	Mussel shells	These seem to be rounder in shape than one normally sees. Are there varieties of this shape? Is the unlinked bit of the middle shell in top row intentional?
17	Port-man-of-war	Rough shows big fish intelligently swerving to avoid man-of-war. Astrafoils show big fish making straight for the tentacles. Man-of-war drawing on astrafoils does not appear to be as complete as that shown on rough.

(\*\* By this, I mean that I am given that impression. I don't actually know anything about it otherwise.)

**Figure 6**

Feedback after close reading of the proofs of *The wonder world of the seashore*, 1954.



**Figure 7**

Examples of reviews of *The wonder world of the seashore*, 1954.

Experts in particular fields as well as teachers, children, and others involved in education were presented with sketches and draft text for checking to confirm the accuracy of information and its visual presentation. Many of the sketches produced in the making of the books contain Marie Neurath's comments and notes, and these, in particular show her attention to detail (Figure 5).

The publishers also played a significant role in checking the accuracy of the information by asking searching questions and giving detailed feedback (Figure 6). Reviews of the books after they had been published were kept by the Isotype team, and these too provide evidence of the kind of feedback which could be taken into account when designing subsequent books (Figure 7).

### Legacy

Recognition of Marie Neurath's contribution to what we understand today as information design is probably not as widespread as it deserves to be, though several other commentators have drawn attention to it (eg Kinross 2002; Kindel 2013). The Natural History Museum and the Open University were inspired by her work to undertake innovative projects (Macdonald-Ross and Waller, 2000), and Twyman (1982) has acknowledged her contribution to design education. Marie Neurath's work is salutary because it provides an historical perspective on the way that designing was done, rather than focusing on the artefacts and their material and visual characteristics.

In discussion about one of the first children's books, 'The visual history of mankind' Marie Neurath used the term 'designing' to refer to her work as transformer. She has explained her role in the collaborative partnership between the publishers, Adprint, and the Isotype Institute as:

the designing of every chart and the supervision of the research and drawing work connected with it, within our institute.<sup>3</sup>

The examples of transformation that occur in the books for children are precursors to the way that many information designers work today: a team of people dedicated to producing materials designed to be useful and attractive to a particular audience, according to principles and rules that ensure that verbal and visual language are considered together, and that review and feedback are integral to the design process. The children's books, with many smart and innovative examples of information design in their own right, also show careful consideration of the needs of different stakeholders – publisher, printer, and not least, the children themselves.

3 Letter Marie Neurath to Patrick Meredith, 20 May 1944 (IC/1/35).

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