

Supplemental Material: Tactile Line Drawings for Improved Shape Understanding in Blind and Visually Impaired Users

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1 OVERVIEW

This document contains all materials for User Study 3: Evaluation. Materials include:

- Seven (7) 3D reference objects. Each object has three geometric variations for use in the study. Modified parts are highlighted in green. All three versions were physically fabricated with 3D printing.
- Tactile illustrations generated with our technique. Fabricated with microcapsule paper.
- Tactile illustrations designed following BANA guidelines [2010] as a baseline. Fabricated with microcapsule paper.
- An eighth example (jug) is provided which was used for training.

During the study the objects were presented in the following order:

- (1) Monitor 1
- (2) Table 1
- (3) Headphones
- (4) Chair
- (5) Monitor 2
- (6) Table 2
- (7) Faucet

REFERENCES

Braille Authority of North America. 2010. *Guidelines and Standards for Tactile Graphics*. Braille Authority of North America, Pittsburgh, PA, USA.

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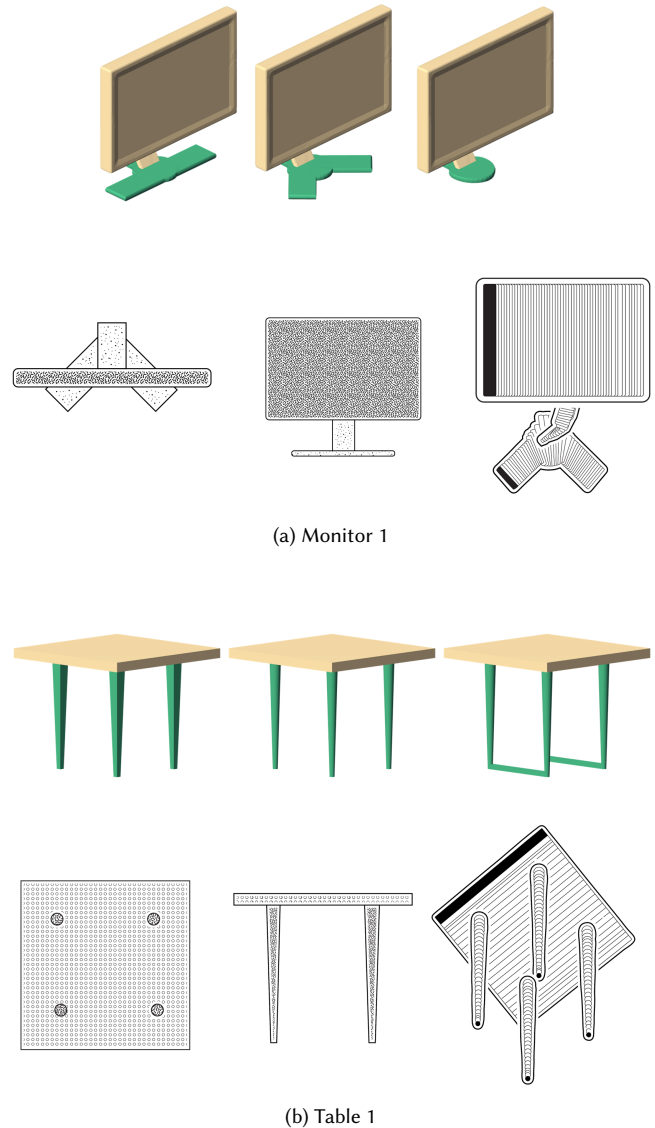


Fig. 1. Objects 1-2 in User Study 3: Evaluation. For each object: (top) 3D reference model with variations; (bottom-left) tactile illustration using BANA [2010] guidelines as baseline; (bottom-right) tactile illustration using our technique. In each case the illustrations depict the middle reference object.

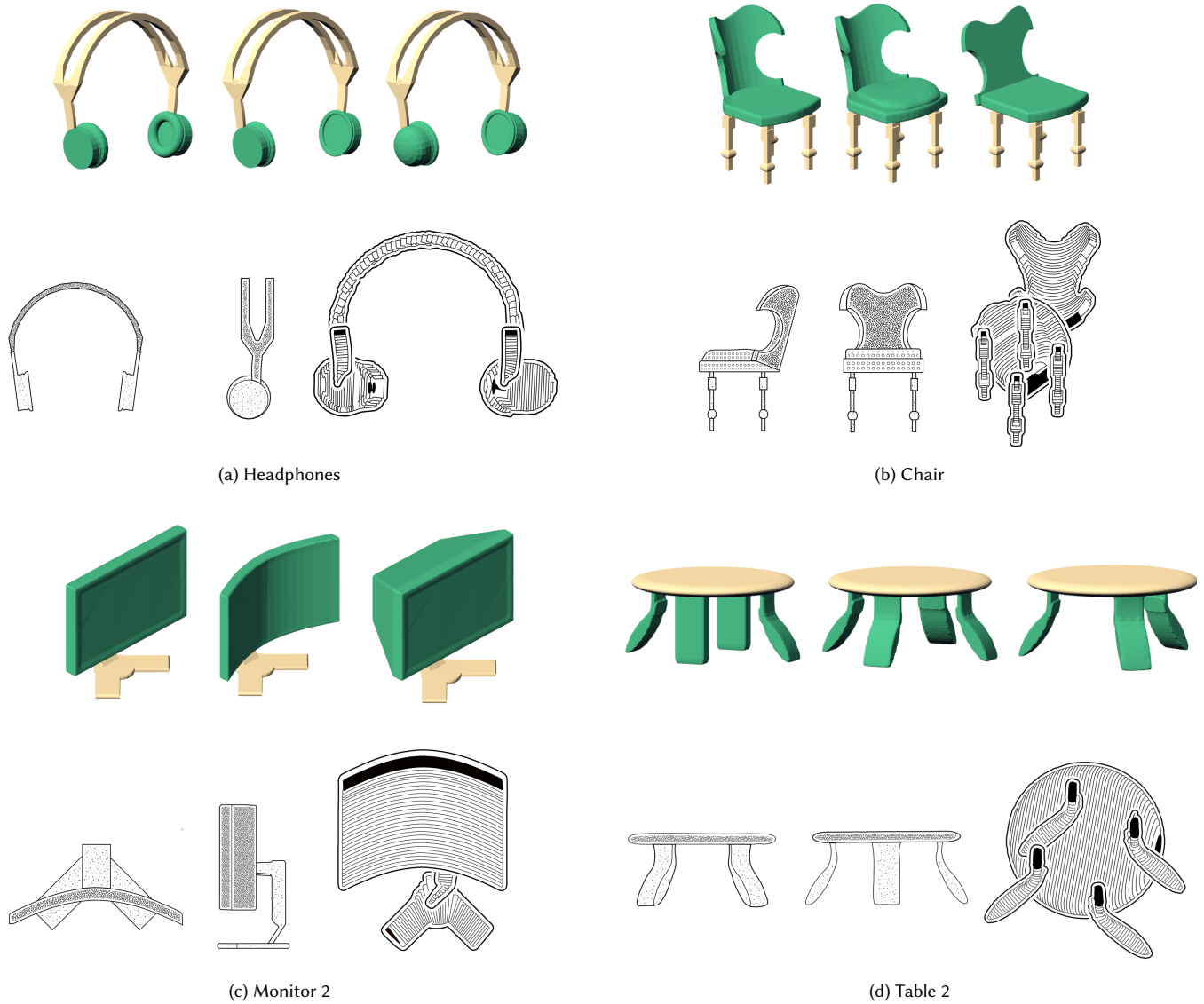


Fig. 2. Objects 3-6 in User Study 3: Evaluation. For each object: (top) 3D reference model with variations; (bottom-left) tactile illustration using BANA [2010] guidelines as baseline; (bottom-right) tactile illustration using our technique. In each case the illustrations depict the middle reference object.

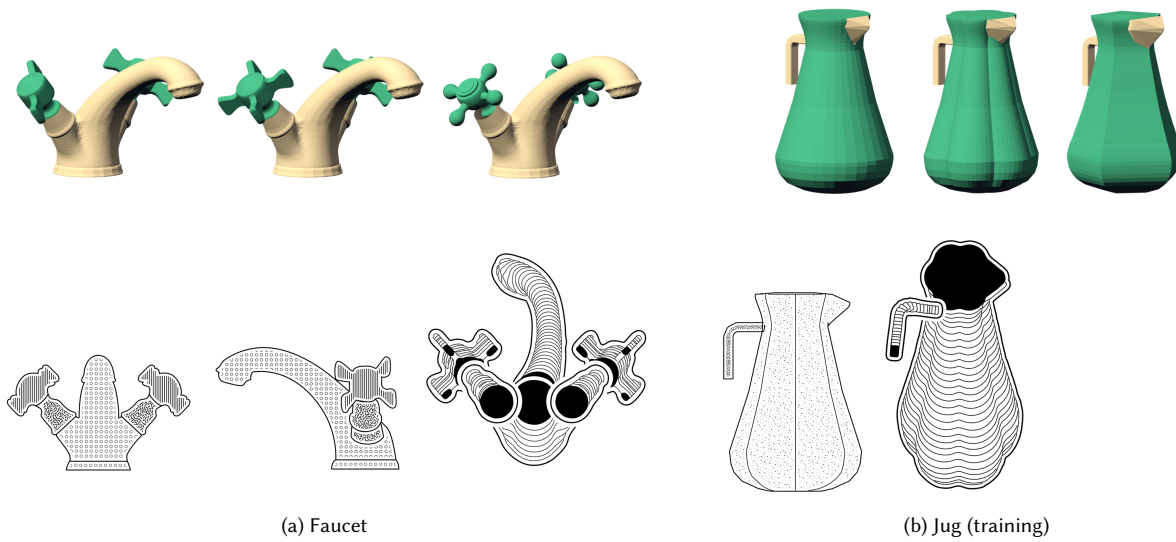


Fig. 3. Object 7 and training example in User Study 3: Evaluation. For each object: (top) 3D reference model with variations; (bottom-left) tactile illustration using BANA [2010] guidelines as baseline; (bottom-right) tactile illustration using our technique. In each case the illustrations depict the middle reference object. The jug was used as a training example at the beginning of the study.