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Tactile protocol analysis: Observations of novices reading data tables by touch

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Abstract: The “Cognitive Science of Tactile Graphics Project” at the University of Sussex is studying how experienced and novice users of tactile graphics read diagrams by touch. One goal of the project is to design novel tactile formats that specifically support ready access to, and rich interpretations of, information in tactile materials by people with visual impairment. This presentation focuses upon the development of a Tactile Protocol Analysis (TPA) method for the transcription, segmentation, coding and interpretation of tactile graphic reading behaviours. TPA is challenging because both hands may be performing separate actions over different timescales and fingers of one hand may themselves be performing different actions. To initially demonstrate the utility of the method, 24 novice tactile readers’ performance on a data table search task was analyzed, from which hypotheses were formulated about the impact of object recognition skill on overall patterns of search.