



UNIVERSITY OF LEEDS

This is a repository copy of *Tactile Sensitivity and Capability of Soft-Solid Texture Discrimination*.

White Rose Research Online URL for this paper:
<http://eprints.whiterose.ac.uk/95209/>

Version: Supplemental Material

Article:

Aktar, T, Chen, J, Ettelaie, R et al. (1 more author) (2015) Tactile Sensitivity and Capability of Soft-Solid Texture Discrimination. *Journal of Texture Studies*, 46 (6). pp. 429-439. ISSN 0022-4901

<https://doi.org/10.1111/jtxs.12142>

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>



Figure 1. Touch sensation test kit consisting of 20 Semmes-Weinstein Monofilaments

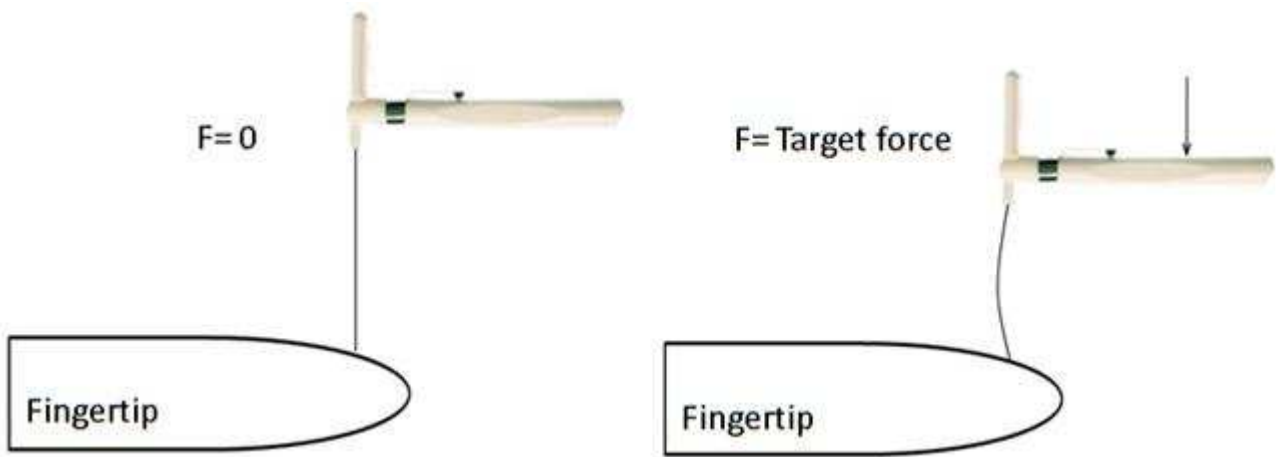


Figure 2. Illustration of touch sensation test methodology. The monofilament pressed perpendicular to the target surface. The pressing force continues to increase until it reaches a maximum when the filament starts to bend and apply a target force.



Figure 3. Two-point discrimination tool to assess the narrowest distance that could be sensed as two pressure points.

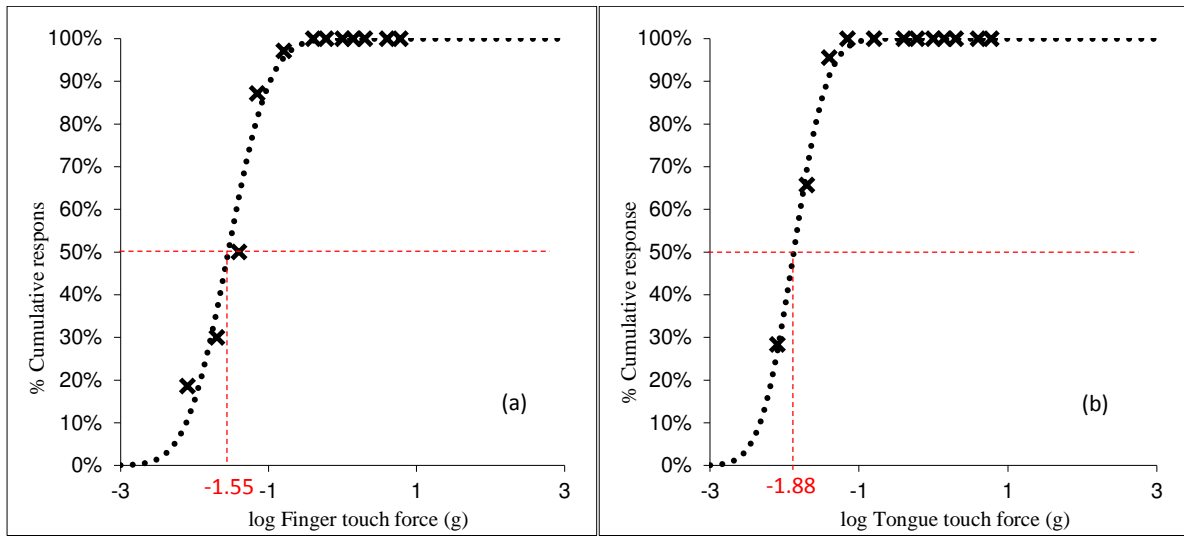


Figure 4. Log-normal fitting (probit analysis) of the cumulative population percentage vs the touch sensitivity (g): (a) the index fingertip ($10^{-1.55} = 0.028$ g); (b) the tongue ($10^{-1.88} = 0.013$ g).

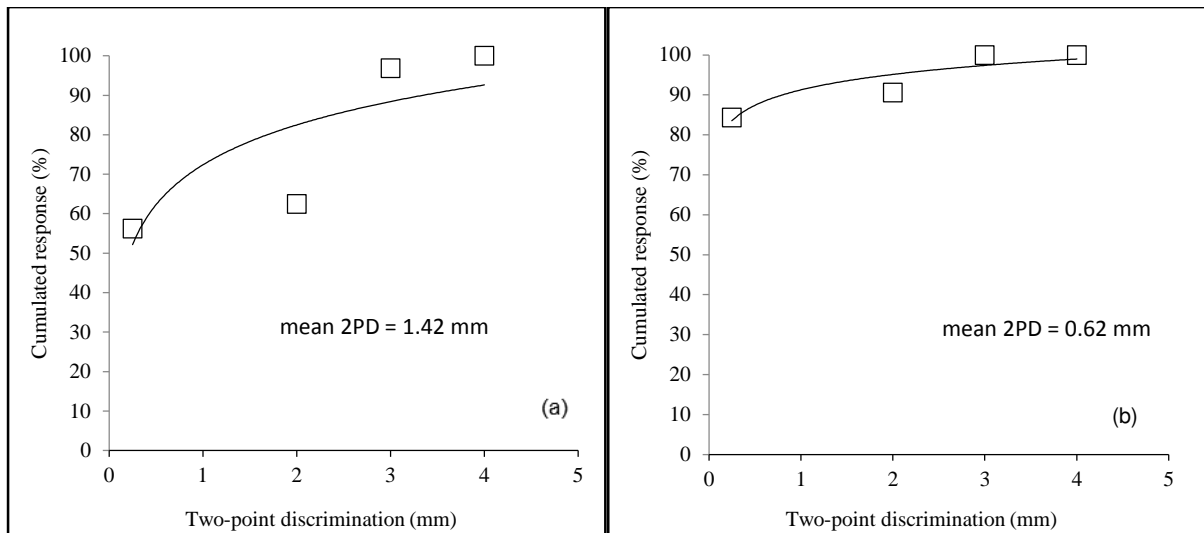


Figure 5. Cumulative responses of subjects shown as population percentage against the distance (mm) between the two points: (a) the index fingertip (mean two-point discrimination = 1.42mm); (b) the tongue (mean two-point discrimination = 0.62 mm) (with guide to eye lines)

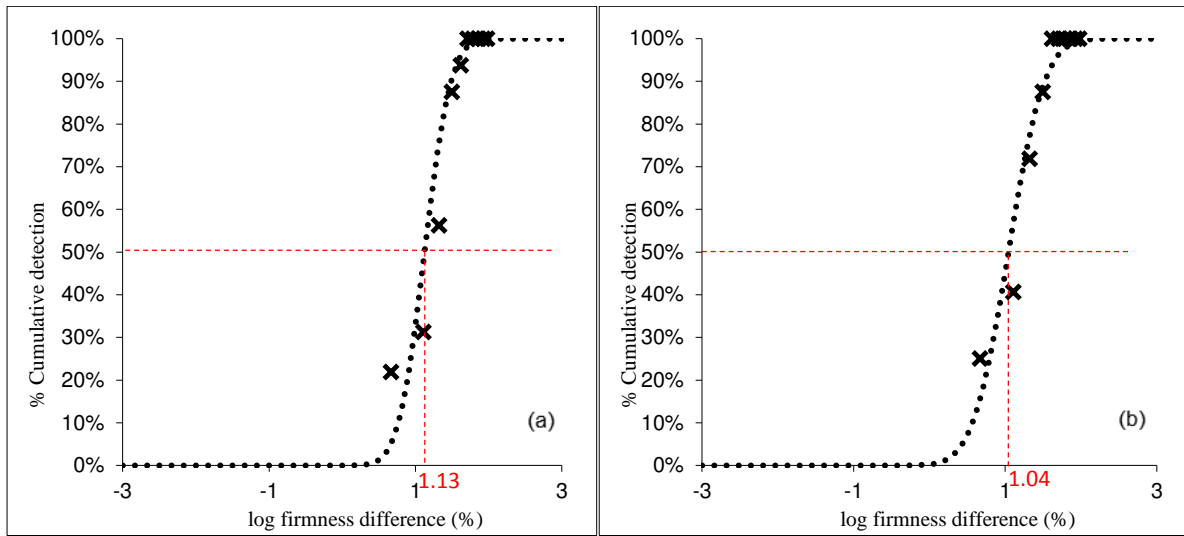


Figure 6. Log-normal best fitted (probit analysis) cumulative responses of subjects shown as population percentage against the logarithmic firmness difference (%); (a) the fingertip ($10^{1.13} = 13.3$ %); (b) the tongue ($10^{1.04} = 11.1$ %)

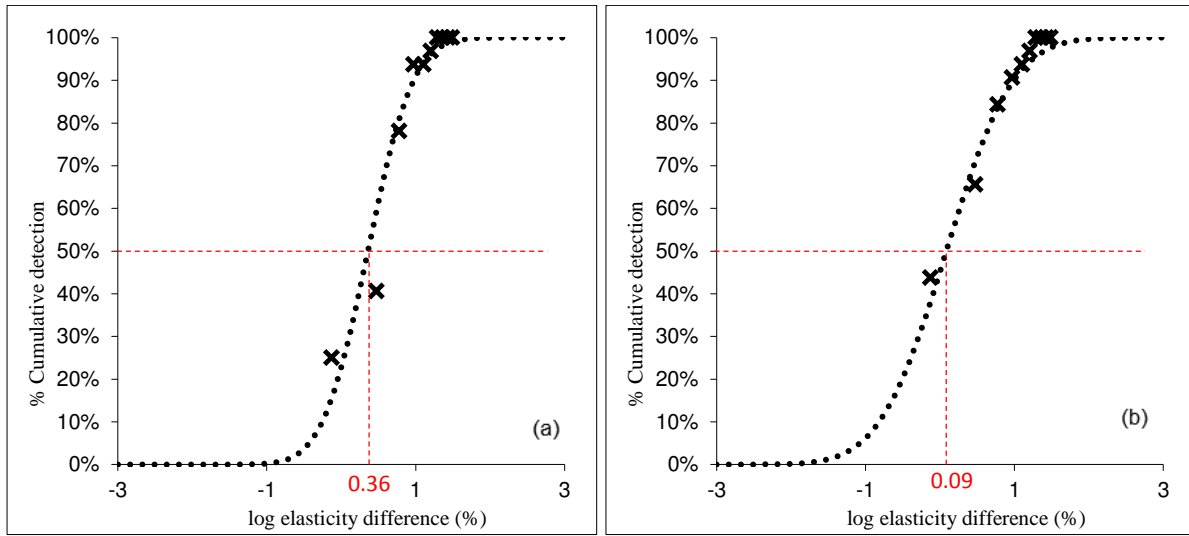


Figure 7. Log-normal best fitted (probit analysis) cumulative responses of subjects shown as population percentage against the logarithmic elasticity difference (%); (a) the fingertip ($10^{0.36} = 2.7$ %); (b) the tongue ($10^{0.09} = 1.1$ %)

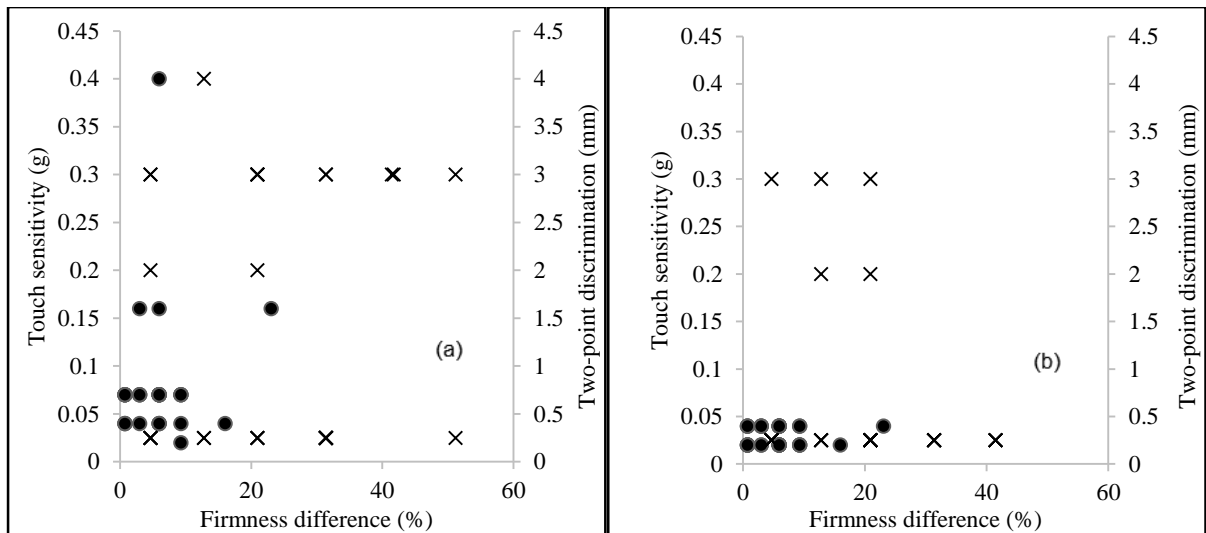


Figure 8. Individual's capability of firmness discrimination and touching sensitivity (●) and two-point discrimination ability (x): (a) by the index fingertip; (b) by the tongue.

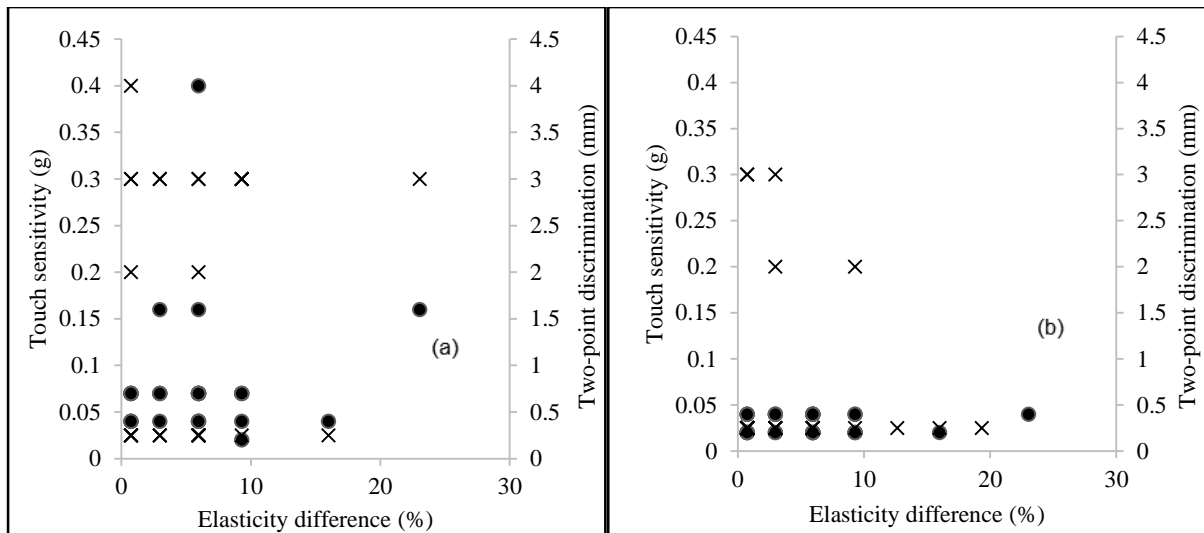


Figure 9. Individual's capability of elasticity discrimination and touching sensitivity (●) and two-point discrimination ability (×): (a) by the index fingertip; (b) by the tongue.