

## REFERENCES

- Abulhab, S.D. (2008) Anatomy of an Arabic type design. *Journal of Visible language*, 42(2), 181-193. [https://academicworks.cuny.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1049&context=bb\\_pubs](https://academicworks.cuny.edu/cgi/viewcontent.cgi?referer=https://scholar.google.com/&httpsredir=1&article=1049&context=bb_pubs)
- Ambrose, G. and Harris, P. (2006) *The fundamentals of typography*. AVA publishers  
[https://books.google.lk/books?hl=en&lr=&id=5WLYdDc5do0C&oi=fnd&pg=PP2&dq=The+fundamentals+of+typography&ots=9SFGDTb6Aa&sig=sLLuk29WnY6oquoZfBdKSr abxw&redir\\_esc=y#v=onepage&q=The%20fundamentals%20of%20typography&f=false](https://books.google.lk/books?hl=en&lr=&id=5WLYdDc5do0C&oi=fnd&pg=PP2&dq=The+fundamentals+of+typography&ots=9SFGDTb6Aa&sig=sLLuk29WnY6oquoZfBdKSr abxw&redir_esc=y#v=onepage&q=The%20fundamentals%20of%20typography&f=false)
- Anonymous. (2017). *History of traffic signs*. D.E. Gemmill. <https://www.degemmill.com/history-traffic-signs/>. ashley@degemmill.com
- Anonymous. (2017). *The history of road signs*. Dornbos sign and safety.  
<http://www.dornbossign.com/sign-blog/the-history-of-road-signs/>
- Anonymous. (2009). *Standard specification for retroreflective sheeting for traffic control*. ASTM International, United States of America.
- Anonymous. (2013). *Retro reflective shifting intensification guide*. Road Development Authority-Sri Lanka
- Anonymous. (2013). *Retro reflective sheeting used for sign faces*. Manual of traffic signs, sign-sheeting
- Arditi, A. and Cho, J. (2007) *Letter case and text legibility in normal and low vision*, (47), 2499-2505. Elsevier. <https://doi.org/10.1016/j.visres.2007.06.010>
- Arnheim, R. (1997) *Visual thinking* (2<sup>nd</sup> ed.). University of California Press.  
[https://books.google.lk/books?hl=en&lr=&id=DWmtB9szhFsC&oi=fnd&pg=PA1&dq=Visual+thinking+&ots=ghauEcv6RO&sig=kBYdM0GotKmN78csiPhtQiuzdQ&redir\\_esc=y#v=onepage&q=Visual%20thinking&f=false](https://books.google.lk/books?hl=en&lr=&id=DWmtB9szhFsC&oi=fnd&pg=PA1&dq=Visual+thinking+&ots=ghauEcv6RO&sig=kBYdM0GotKmN78csiPhtQiuzdQ&redir_esc=y#v=onepage&q=Visual%20thinking&f=false)
- Beier, S. (2012) *Reading letters designing for legibility*. BIS Publishers
- Beier, S. (2009) *Typeface legibility: Towards defining familiarity* [Doctor of Philosophy]. Royal college of Art. United Kingdom. <http://www.researchgate.net/publication/281745318> (14 September 2015)
- Bormuth, J. R. (1969) Factor validity of cloze tests as measures of reading comprehension ability. *Journal of Reading Research Quarterly*, 4(3), 358-365. DOI: 10.2307/747144

- Brumberger, E.R. (2003) The rhetoric of typography: The persona of typeface and text. *Journal of Technical communication*, 50(2), 206-223. Society for technical communication.  
<http://www.Jstor.org/stable/43089122>
- Brumberger, E.R. (2003) The rhetoric of typography: The awareness and impact of typeface appropriateness. *Journal of Technical communication*, 50(2), 224-231. Society for technical communication. <http://www.Jstor.org/stable/43089123>
- Cai, D. (2016) Stroke effect on legibility of Japanese character. *Journal of Human factors and ergonomics in manufacturing and service industry*. DOI: 10.1002/hfm.20694
- Calori, C. and Vanden-Eynden, D. (2015) *Signage and wayfinding design* (2<sup>nd</sup> ed.). John Wiley and sons, Inc
- Carter, R., Day, B. and Meggs, P. (2007) *Typographic Design: form and Communication* (4<sup>th</sup> ed.). John Wiley and sons Inc.
- Chandler, S. B. (2001) *Comparing the legibility and comprehension of type size, font selection and rendering technology of on screen type* [Degree of Doctor of Philosophy]. Virginia Polytechnic Institute and state University, Blacksbur, Virginia.  
<http://hdl.handle.net/10919/29629>
- Chandra, S., Bokil, P. and Kumar, D. U. (2017) Legibility: same for all scripts. ICORD 2017 Research into design for communities (2), 833-843. Springer Nature Singapore Pte Ltd. DOI: 10.1007/978-981-10-3521-0\_71
- Chaparro, S.B., Baker, J.R. and Shaikh, A.D. (2004) Reading online text: A comparison of four white space layouts. *Usability news: Software Usability Research Laboratory*, 6(2), 1-7.  
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.556.404&rep=rep1&type=pdf>
- Chen, T,H, Chiou, Y.C and Huang, C.T. (2004) *A small size Chinese font display by perception based method*. ICIP 04, International conference on image processing. Department of Electrical Engineering, National Taiwan University. IEE, Singapore.  
<https://doi.org/10.1109/ICIP.2004.1421586>
- Coleman, C., Lindstrom,J., Nelson,J., Lindstrom,W. and Gregg,N.K. (2010) Passage less comprehension on the Nelson- Denny Reading test: Well above chance for university students. *Journal of Learning Disabilities*, 43(3), 244-249. DOI: 10.1177/0222/9409345017
- Craig, J. (2006) *Designing with type the essential guide to typography* (5<sup>th</sup> ed.). Watson Guptill

- Dalvi, V.G. (2010) Conceptual model for Devanagari typefaces [Doctor of Philosophy] Industrial Design Centre, Indian Institute of Technology, Mumbai
- Drum, P. A., Calfee, R.C. and Cook, L. K. (1981), The effects of surface structure variables on performance in reading comprehensions tests. *Journal of Reading Research Quarterly*, 16(4), 486-514. Jstor. <https://www.jstor.org/stable/747313?seq=1>
- Eglin, V., Bres, S, and Emptoz, H. ( 1998) *Printed text featuring using the visual criteria of legibility and complexity*. Proceedings of 14<sup>th</sup> International conference on pattern. IEEE, Brisbane. <https://doi.org/10.1109/ICPR.1998.711390>
- Fyers, A.B. and Colonel, R.E. (1881) *Roads in Ceylon, part 01, principal roads*, 4.4.1881. Surveyor-General's office
- Garvey, P.M. (2007) Urban wayfinding signs; Evaluating exceptions to FHWA's standard alphabets. *Journal of The transportation research board*, 2007(2030), 10-14. Transportation Research board of the national academics, Wahington. DOI; 10.3141/2030-02
- Garvey, P.M., Zineddin, A.Z and Pietrucha, M.T, ( 2001) *Letter legibility for signs and other large format applications*. Proceedings of the Human Factors and Economics Society 45<sup>th</sup> Annual meeting, 45(18), 1443-1447. The Pennsylvania state University, University Park. SAGE journal. DOI: 10.1177/154193120104501828
- Garvey, P.M., Chirwa, K.N., Meeker, D.T, Pietrucha, M.T, Zineddin, A.Z., Ghebrial, R.S, and Montalbano, J. (2004) New font and arrow for national park service guide signs. *Journal of the transportation research board*, 1862, 1-9. TRB national Research Council, Wahington. SAGE Journals. DOI: 10.3141/1862-01
- Garvey, P.M. and Kuhn, B.T. (2011) *Highway sign visibility*. 7.1-7.17 MC Graw-Hill <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.452.7608&rep=rep1&type=pdf>
- Gerow, J.R. and Murphy, D.P (1980) The validity of the Nelson-Denny reading test as a predictor of performance in introductory psychology. *Journal of Educational and psychological measurement*, 40, 553-556. SAGE Journal. DOI: 10.1177/001316448004000240
- Harris, R, P. (1999) Review on Designing visual language: Strategies for professional communicators by Kstelnic, *et al. Journal of Techno style*, 15(1), 80-86. Spring. <http://cjsdw.journals.publicknowledgeproject.org/index.php/dwr/article/view/438/418>

- මහමාර්ග වංශය (Historical documentary of roads in Sri Lanka). Ministry of highways and road development-Sri Lanka. (2011)
- Haley, A. (2009) *It's about legibility*, Monotype Imaging Inc
- Hu, Wen-Yuan. and Liou, Jie-Yu (2017) *An application study on the legibility of characters printed on one-way vision film*. Proceedings of the 2017 IEEE International Conference on applied system innovation, Department of Visual Communication Design, National Yunlin University of Science and Technology, IEEE, Sapporo. DOI: 10.1109/ICASI.2017.7988261
- Hyndman, S. (2016) *Why fonts matter*. Virgin Books
- Janbi, J., Almuhajri, M. and Suen, Y.C. (2014) The effect of fonts design features on OCR for Latin and Arabic. *Journal of Multimedia theory and application*, (1), 50-59. Avestia. DOI: 10.11159/;mta.2014.006
- Jayaweera, E.M.K.N. ( 2019, July 7) Personal communication[communication type].
- Jordan, R.T., Alshamsi, A.S., Yekani, A.K., Jassm, M.A., Dosari, N.A., Hermena, E.W. and Sheen, M. (2017) *What's in a typeface? Evidence of the existence of print personalities in Arabic*. *Frontiers in Psychology*, 18 October, DOI: 10.3389/fpsyg.2017.01229
- Kampman, F.J. (2011) *Arabic typography its past and its future* [Bachelor of Arts]. Utrecht University. <https://dspace.library.uu.nl/handle/1874/209942>
- Keenan, J. M. and Betjemann, R, S. (2006) Comprehending the Gray Oral reading test without reading it: Why comprehension tests should not include passage-independent items. *Journal of Scientific studies of reading*, 10(4), 363-380. DOI: 10.1207/s1532799xssr1004\_2
- Kooparahewa, S. (2018)*Chronicle of Sinhala letters*. Sarasavi
- Kostelnick, C. (1990) Typographical design modernist, aesthetics and professional communication. *Journal of Business and technical communication*, 4(1). Iowa State University. DOI: 10.1177/105065199000400101
- Laliberte, J. (1987) Modern typography: consequence of the revolution industrial?. *Journal of communication and languages* (72), 60-76. DOI: 10.3406/colan.1987.974. [https://www.persee.fr/doc/colan\\_0336-1500\\_1987\\_num\\_72\\_1\\_974](https://www.persee.fr/doc/colan_0336-1500_1987_num_72_1_974)
- Legge, G. E., Ross, J.A, Luebker, A and Lamau, J.(1989) Psychophysics of reading: VIII. The Minnesota low-vision reading test. *Journal of Optometry and vision science*, 66, 843-853.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.9.4568&rep=rep1&type=pdf>, DOI: 10.1.1.9.4568

- Liang, Y., Horrey, W.J. and Hoffman, J.D. (2015) Reading text while driving: understanding drivers' strategic and tactical adaptation to distraction. *Journal of Human factors*, 57(2), 347-359. DOI: 10.1177/0018720814542974
- Lu, J. and Lyu, Q. (2013) *The study on the visibility of the intelligent traffic signal system*. 6<sup>th</sup> International conference on Information Management, Innovation Management and Industrial Engineering, Medical college, Donoghue University, Shanghai, China. Xi'an, IEEE. DOI:10.1109/ICIII.2013.6702957
- Lund, O. (2003) *The public debate on Jock Kinneir's road sign alphabet*. Norwegian University of Science and technology, Gjøvik. <http://www.Researchgate.net/publication/310797538>
- Mackiewicz, J. (2005) How to use five letterforms to gauge a typeface's personality: A research – driven method. *Journal of Technical writing and communication*, 35(3), 291-315. DOI:10.2190%2FLQVL-EJ9Y-1LRX-7C95
- Masterson, J. and Hayes, M. (2004) UK data from 197 undergraduates for the Nelson Denny reading test. *Journal of Research in Reading*, ISSN 0141-0423, 27(1), 30-35. Blackwell USA. DOI: 10.1111/j.1467-9817.2004.00212.x
- Mikaere, E.J. (2011) *How favourable attitudes are formed when the semantic associations of a logo type are congruent with brand personality*. [Master of computer graphic design]. University of Waikato. Research Commons at the University of Waikato. <https://researchcommons.waikato.ac.nz/bitstream/handle/10289/5303/thesis.pdf?sequence=3&isAllowed=y>
- Ministry of highways and road development and road development authority (August 2007), *Manual on traffic control devices* (Part 01, 2<sup>nd</sup> Edition). Sri Lanka.
- Nini, P. (2006) *Typography and the aging eye: typeface legibility for older viewers with vision problems*. AIGA the professional association for design, New York. <http://www.aiga.org/content.cfm>
- Ordinance No. 22 of 1929/33 Under motor car. Department of National Archives Sri Lanka.
- Ordinance 1931/35.NO 41 of 1935 Under motor car. Department of National Archives Sri Lanka.
- Peng, Y., Boyle, L.N., Ghazizadeh, M. and Lee, J.D. (2013) *Factors affecting glance behaviour when interacting with in-vehicle devices: Implications from a simulator study*. Driving assessment conference2013, University of Iowa. <https://ir.uiowa.edu/drivingassessment/2013/papers/72/>

- Porathe, T. and Strand, L. (2011) Which sign is more visible? Measuring the visibility of traffic signs through the conspicuous index method. *Journal of European transport research revolution*, 3, 35-34. DOI 10.1007/s 12544-011-0050-9
- Pu, Y., Chen,F., Pan,X. and Liang,J. (2017), *The legibility of LED traffic guide signs in urban tunnels*. 4<sup>th</sup> International Conference on Transportation Information and Safety, Banff, Canada August 8-10, 2017.IEEE. DOI: 10.1109/ICTIS.2017.8047909
- Sanocki, T. (1987) Visual knowledge underlying letter perception: font –specific, schematic tuning. *Journal of Experimental Psychology, Human Perception and Performance*, 13(2), 267-278.The American Psychological Association,  
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.712.7406&rep=rep1&type=pdf>
- Samarawickrama, S.S.M.R. (2016) *The anatomy and historical development of Sinhala typefaces* [Degree of doctor of philosophy] Faculty of Architecture, University of Moratuwa, Sri Lanaka
- Schrivier, K. (2013) What do technical communicators need to know about information design?. *KSA communication design and research, solving problems in technical communication*, 386-427. University of Chicago press. [https://www.researchgate.net/profile/Karen-Schrivier/publication/282863516\\_What\\_do\\_technical\\_communicators\\_need\\_to\\_know\\_about\\_information\\_design/links/56608be608aebae678aa2057/What-do-technical-communicators-need-to-know-about-information-design.pdf](https://www.researchgate.net/profile/Karen-Schrivier/publication/282863516_What_do_technical_communicators_need_to_know_about_information_design/links/56608be608aebae678aa2057/What-do-technical-communicators-need-to-know-about-information-design.pdf)
- Sekaran, U. (2003) *Research Methods for Business a Skill Building Approach* (4<sup>th</sup> ed.). Malloy Lithographing Inc.  
[https://books.google.lk/books?hl=en&lr=&id=Ko6bCgAAQBAJ&oi=fnd&pg=PA19&dq=Research+Methods+for+Business+a+Skill+Building+Approach+&ots=2C\\_PU3NVmM&sig=a9f-\\_9uzsXkfbS3qWEGe1tLF69M&redir\\_esc=y#v=onepage&q=Research%20Methods%20for%20Business%20a%20Skill%20Building%20Approach&f=false](https://books.google.lk/books?hl=en&lr=&id=Ko6bCgAAQBAJ&oi=fnd&pg=PA19&dq=Research+Methods+for+Business+a+Skill+Building+Approach+&ots=2C_PU3NVmM&sig=a9f-_9uzsXkfbS3qWEGe1tLF69M&redir_esc=y#v=onepage&q=Research%20Methods%20for%20Business%20a%20Skill%20Building%20Approach&f=false)
- Silva, M. R. (2014) *Typeface design inroad signs* [Master of Arts Typeface Design] Department of typography and graphic communication, University of Reading
- Shaikh, A. D., Chaparro, B. S. and Fox, D. (2006) Perception of fonts: perceived personality traits and uses. *Usability news: Software Usability Research Laboratory*, 8(1).  
<https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.551.228&rep=rep1&type=pdf>

- Sheedy, J. E., Subbaram, M.V., Zimmerman, A.B. and Hayes, J.R. (2005) Text legibility and the letter superiority effect. *Journal of the Human Factors*, 47(4), 797-815[DOI: 10.1518/001872005775570998]
- Smiley, A. (1978) *Sign design to meet consumer needs and preferences* [Doctor of Philosophy], 1-8. CCPE Human Factors North Inc. Toronto.  
<https://www2.gnb.ca/content/dam/gnb/Departments/thc-tpc/pdf/TIF-IIT/SignDesign.pdf>
- Stelmack, J., Stelmack, R.T., Fraim, M and Warrington, J. (1987) *Clinical use of the pepper visual skills for ready test in low vision rehabilitation*. 64(11), 829-831[DOI 10.1097/00006324-198711000\_00005]
- Stevens, A., Quimby, A., Board, A., Kersloot, T. and Burns, P. (2002), *Design guidelines for safety of in-vehicle information systems*, DTLR Transport Local Government Regions. Transport Research Laboratory (2002).  
[http://www.umich.edu/~driving/publications/DETRIVISGuidelines\\_finalversion.pdf](http://www.umich.edu/~driving/publications/DETRIVISGuidelines_finalversion.pdf)
- Strayer, R. W. (2011) *ways of the world: A brief global history with sources*. (1<sup>st</sup> ed.). Bedford/St. Martin's
- Sudath, A.R. (2018, September 28, 2019). Personal communication [communication type].
- Tejero, P, Insa, B. and Roca, J. (2018), Increasing the default inter letter spacing of words can help drivers to read traffic signs at longer distance. *Journal of Accident analysis and prevention*. 117(2018), 298-303. DOI:10.1016%2Fj.aap.2018.04.028
- The motor traffic Act, The gazette of the Democratic Socialist Republic of Sri Lanka No 444/18(13 March 1987)
- Tinker, M.A. and Paterson, G.D. (1928), Influence of type form on speed of reading. *Journal of Applied Psychology*, 12(4), 359-369. DOI:10.1037/h0073699
- Tinker, M.A. and Paterson, G.D. (1929), Studies of typographical factors influencing speed of reading: iii. Length of line. *Journal of Applied and Psychology*, 13(3), 205-209. DOI: 10.1037/h0073597
- Tinker, M.A. and Paterson, G.D (1931) *Studies of typographical factors influencing speed of reading: vii. Variations in colour of print and background*. University of Minnesota. DOI: 10.1037/h0076001
- Tinker, M.A. and Paterson, G.D. (1940), *How to make type readable*. Harper and brothers publishers and Peter Lang publishing Inc

- Tinker, M.A. and Paterson, G.D. (1942), *Reader preferences and typography*. University of Minnesota, 38-40. DOI:10.1037/h0061105
- Tinker, M.A. and Paterson, G.D. (1943), *Reliability and validity of eye-movement measures of reading*. University of Minnesota. DOI: 10.1037/h0060561
- Tschichold, J. (1974) *The form the book-Essays on the morality of good design* (2<sup>nd</sup> ed.). Penguin books
- Updike, D.B.(1962) *Printing types their history, forms and use* (3<sup>rd</sup> ed.). (01 and 02.). Oxford University Press.
- Vidanapathirana, P. (2019) *Highway system in ancient Sri Lanka*.  
<http://www.archaeology.lk/6409>
- Vidanapathirana, P. (2018, September 28). Personal communication [communication type].
- Waller, R. (2011) *What makes a good document? The criteria we use*. Simplification centre technical paper (92), University of reading. [www. Simplification centre.org.UK](http://www.simplificationcentre.org.UK)
- Willen, B. and Strals, N. (2009) *Lettering and type: creating letters and designing typefaces*. Princeton Architectural Press.  
[https://books.google.lk/books?hl=en&lr=&id=yBytanUmuCoC&oi=fnd&pg=PA1&dq=Willen,+B.+and+Strals,+N.+\(2009\)+Lettering+and+type:+creating+letters+and+designing+typefaces&ots=pxg9n9GVkR&sig=e13AAsnevenu0P7yHiWy2g3vx4&redir\\_esc=y#v=onepage&q=Willen%2C%20B.%20and%20Strals%2C%20N.%20\(2009\)%20Lettering%20and%20type%3A%20creating%20letters%20and%20designing%20typefaces&f=false](https://books.google.lk/books?hl=en&lr=&id=yBytanUmuCoC&oi=fnd&pg=PA1&dq=Willen,+B.+and+Strals,+N.+(2009)+Lettering+and+type:+creating+letters+and+designing+typefaces&ots=pxg9n9GVkR&sig=e13AAsnevenu0P7yHiWy2g3vx4&redir_esc=y#v=onepage&q=Willen%2C%20B.%20and%20Strals%2C%20N.%20(2009)%20Lettering%20and%20type%3A%20creating%20letters%20and%20designing%20typefaces&f=false)
- Webster, H.A. and Tinker, M.A. (1943) *The influence of typeface on the legibility of print*. University of Minnesota. DOI: 10.1037/h0063604
- Weisenmiller, E.M. (1999) *A study of the readability of on-screen text* [Doctor of Philosophy] Virginia poly technic Institute and State University, Blacksburg.  
DOI:10.1.1.454.9391&rep=rep1&type=pdf
- York, J. (2008) *Legibility and large-scale digitization*. IS&T Archiving 2007 conference proceedings, 1-49. [https://www.hathitrust.org/technical\\_reports/Legibility.pdf](https://www.hathitrust.org/technical_reports/Legibility.pdf)
- Zhao, Y., Ding, L., Li, Y. and Ran, L. (2016), *The effect of font size, age and lighting environment on Chinese character legibility*. 9<sup>th</sup> International Congress on Image and Signal Processing, Biomedical Engineering and Informatics. IEEE. DOI: 10.1109/CISP-BMEI.2016.7852983



Zwahlen, H.T. and Xiong, S. (2000) *Legibility of text on traffic signs as a function of luminance and size*. Ohio research institute for transportation and the environment, Ohio University.  
<http://apps.usd.edu/coglab/schieber/psyc707/pdf/zwahlen-xiong.pdf>