



The Hebrew University of Jerusalem

Syllabus

Read Part A: A Fundamental Processes of Reading - 34940

Last update 31-08-2021

HU Credits: 3

Degree/Cycle: 2nd degree (Master)

Responsible Department: Education

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Mt. Scopus

Course/Module Coordinator: Avital Deutsch

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Coordinator Office Hours: Wednesday, 11:00-11:45

Teaching Staff:

Prof Avital Deutsch

Course/Module description:

This course will discuss the cognitive mechanisms involved in written word recognition. The discussion will focus mainly on single-word recognition and how written-word recognition is modulated by language-specific characteristics

Course/Module aims:

The aim of the course is to introduce the main models for written-word recognition via the empirical literature from which these models stem. Another aim is to train the students to read empirical literature in the cognitive domain of reading.

Learning outcomes - On successful completion of this module, students should be able to:

see course aims

Attendance requirements(%):

100%

Teaching arrangement and method of instruction: The discussion will be based on teacher presentations and students' reading of experimental literature describing the behavioral phenomena that lead to the various theoretical models of reading.

Course/Module Content:

Introduction

- The development of writing systems: logographic, syllabic, alphabetical.*
- The process of reading: What is the essence of written word recognition? What is the distinction between written-word recognition in beginning and skilled readers? Present the Word Superiority effect.*

Written word identification – a comprehensive discussion:

- Visual word recognition: the recognition of complex visual patterns versus the identification of sub-lexical orthographic units. Introducing connectionist models of reading.*
- Lexical access: Introducing the dual-route model (with direct and indirect routes) versus one-route feed-forward and/or feedback connectionist models. Discussing models of precise versus flexible coding of letter position.*

The presentation of the various models is based on empirical findings demonstrating the well-documented factors that affect written word recognition:

phonological and orthographic processing, word frequency, orthographic regularity, orthographic consistency and orthographic depth. The discussion will include the experimental paradigms commonly used in the field.

- The time course of deciphering phonological structure in written-word recognition.
- Identification of orthographic structure: statistical learning models.
- Discussion of the experimental paradigm of monitoring readers' eye movements as a tool for exploring the reading process. Introducing the E-Z-reader model of eye movements in reading. Discussing the role of attention in written-word recognition within a sentential context – serial versus parallel models for the allocation of attention.
- Discussion of the theoretical implications of the basic research into written-word identification for teaching reading.
- The role of morphological units in written word recognition – a comprehensive discussion of reading Hebrew. The discussion will include form priming and the transposition letter effect within and across morphemic boundaries.
- The relation between written word identification and spelling.

Required Reading:

Reading Part I: Fundamentals in reading/ Prof. Avital Deutsch (2021-2022)
Students will be required to read one article in a week.

Bibliography

Alario, F.-Xavier, De Cara, B., & Ziegler, J. C. (2007). Automatic activation of phonology in silent reading in parallel: Evidence from beginning and skilled readers. *Journal of Experimental Child Psychology*, 97(3), 205-219.

Apel, J. K., Henderson, J. M., & Ferreira, F. (2012). Targeting regressions: Do readers pay attention to the left? *Psychonomic Bulletin & Review*, 19, 1108-1113.

Arciuli, J. & Simpson, I. C. (2012). Statistical learning is related to reading ability in children and adults. *Cognitive Science*, 36, 286-304.

Ashby, J., Treiman, R. Kessler, B. and Rayner, K. (2006). Vowel Processing During Silent Reading: Evidence From Eye Movements. *Journal of experimental psychology: Learning, memory and cognition*, 32 (2), 416-424.

Bernat, I., & Perfetti, C. A. (1995). A rose is a REEZ: the two-cycles model of phonology assembly in reading English. *Psychological Review*, 102, 146-184.

Bogaerts, L., Frost, R., and Christiansen, M. H. (2020). Integrating statistical learning into cognitive science. *Journal of Memory and Language*, 115.

Boudelaa, S., & Marslen-Wilson, W. (2005). Discontinuous morphology in time: Incremental masked priming in Arabic. *Language and Cognitive Processes*, 20, 207-260

Boudelaa, S., & Marslen-Wilson, W. D. (2011). Productivity and priming: Morphemic decomposition in Arabic. *Language and Cognitive Processes*, 26, 624-652.

Brand, M., Rey, A., & Peerman, R. (2003). Where is the syllable priming effect in visual word recognition. *Journal of Memory and Language*, 48, 435-443.

Brothers, T., Hoverstern, L. J., and Traxler, M. J. (2017). Looking back on reading ahead: No evidence for lexical parafoveal-on-foveal effects. *Journal of Memory and Language*, 96, 9-22.

Brysbaert, M. (2001). Prelexical phonological coding of visual words in Dutch: Automatic after all. *Memory & Cognition*, 29(5), 765-773.

Chateau, D., & Jared, D. (2003). Spelling-sound consistency effects in disyllabic word naming. *Journal of Memory and Language*, 48, 255-280.

Chen, L., Perfetti, C. A., Fang, X., Chang, L.-Y., & Fraundorf, S. (2019). Reading Pinyin activates sublexical character orthography for skilled Chinese readers. *Language, Cognition and Neuroscience*, 34(6), 736-746.
<https://doi.org/10.1080/23273798.2019.1578891>

Chen, H. C., Vaid, J., & W, J. T. (2009). Homophone density and phonological frequency in Chinese word recognition. *Language and Cognitive Processes*, 24, 967-982.

Christianson, K., Johnson, R., L., & Rayner, K. (2005). Letter transposition within and across morphemes. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 31, 1327-1339.

Clifton, C., Ferreira, F., Henderson, J. M., Inhoff, A., W., Liversedge, S., P., Reichle, E., D., and Schotter, E., R. (2016). Eye movements in reading and information processing: Keith Rayner's 40 year legacy. *Journal of Memory and Language*, 86, 1-19.

Colombo, L. (2000). The assembly of phonology in Italian and English: Consonants and Vowels. In: A. Kennedy, R. Radach, D. Heller, & Pynte J. (Eds.) *Reading as a Perceptual Process* Amsterdam: Elsevier. (pp. 377-398).

*Coltheart, M. (2005). Modeling reading: The dual-route approach. In: M. J. Snowling, and C. Hulmes (Eds.) *The science of reading: A handbook* (pp. 6-23). Oxford UK: Blackwell Publishing.

Coltheart, M., Rastle, K., Conrad, P., Robyn, L., & Ziegler, J. (2001). DRC: A dual route cascaded model of visual word recognition and reading aloud. *Psychological Review*, 108, 204-256.

Coltheart, V., Patterson, K., & Leahy, J. (1994). When a ROWS is a ROSE: Phonological effects in written word comprehension. *Quarterly Journal of Experimental Psychology*, 47.

Conrad, M., Carreiras, M., Tamm, s., and Jacobs, A., M. (2009). Syllables and biframs: Orthographic redundancy and syllabic units affect visual word recognition at different processing levels. *Journal of Experimental Psychology: Human, Perception, and Performance*, 35(2), 461-479.

Crepaldi, D., Rastle, K., Coltheart, M., & Nickels, L. (2010). 'Fell' primes 'fall', but does 'bell' prime 'ball'? Masked priming with irregularly-inflected primes. *Journal of Memory and Language*, Vol 63(1), 83-99.

Davis, C., J. (2010). SOLAR versus SERIOL revisited. *European Journal of Cognitive Psychology*, 22, 695-724.

Deutsch, A., Frost, R., & Forster, K. (1998). Verbs and nouns are organized and accessed differently in the mental lexicon: Evidence from Hebrew. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 24, 1238-1255.

Deutsch, A., Frost, R. Pelleg, S., Pollatsek, A., & Rayner, K. (2004). Early morphological effects in reading: Wvidence from parafoveal preview benefit effect in Hebrew. *Psychonomic Bulletin & Review*, 10, 415-422.

Deutsch, A., Frost, R., Pollatsek, A., & Rayner, K. (2000). Early morphological effects in word recognition in Hebrew: Evidence from parafoveal preview benefit. *Language and Cognitive Processes*, 15, 487-506.

Deutsch, A., Velan, H. C & Michaly, T. S (2018). Decomposition in a non-concatenated morphological structure involves more than just the roots: Evidence from fast priming. *Quarterly Journal of Experimental Psychology*, 7, 85-92.
<https://psycnet.apa.org/doi/10.1080/17470218.2016.1250788>

Diependaele, K., Morris, J., Serota, R. M., Bertrand, D., and Grainger, J. (2013). Breaking boundaries: Letter transpositions and morphological processing. *Language and Cognitive Processes*, 28, 988-1003.

Diependaele, K., Ziegler, J., Grainger, J. (2010). Fast phonology and the bi-modal interactive activation model. *European Journal of Cognitive Psychology*, 22, 764-778.

Doctor, E. A., & Coltheart, M. (1980). Children's use of phonological encoding when reading for meaning. *Memory and Cognition*, 8, 195-209.

Duñabeitia, J. A., Orihuela, K., & Carreiras, M. (2014). Orthographic coding in illiterates and literates. *Psychological science*, 25, 1275-1280.

Duñabeitia, J. A., Perea, M. & Carreiras, M. (2014). Revisiting letter transpositions within and across morphemic boundaries. *Psychological Bulletin & Review*, 21, 1557-1575.

Engbert, R., Nuthmann, A., Richter, E., & Kliegl, R. (2005). SWIFT: A dynamical model of saccade generation during reading: *Psychological Review*, 112, 777-813.

Ferrand, L., & Grainger, J. (1994). Effects of Orthography are independent of phonology in masked form priming. *The Quarterly Journal of Experimental Psychology*, 47A, 365-382.

Frisson, S., Bélanger, & Rayner (2014). Phonological and orthographic overlap effects in fast and masked priming. *The Quarterly Journal of experimental Psychology*, 67, 1742-1767.

Frost, R. (1994). Prelexical and postlexical strategies in reading; evidence from a deep and a shallow orthography. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 20, 116-129.

Frost, R. (1995). Phonological computation and missing vowels: Mapping lexical involvement in reading. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 21, 398-408.

Frost, R. (1998). Toward a strong phonological theory of visual word recognition: True issues and false trials. *Psychological Bulletin*, 123, 71-99.

Frost, R. (2006). Becoming literate in Hebrew; the grain size hypothesis and Semitic orthographic systems. *Developmental Science*, 9, 439-440.

Frost, R. (2012). Towards a universal model of reading. *Behavioral and Brain Sciences*, 35, 263-279.

*Frost, R. (2015). Cross-linguistic perspectives on letter-order processing: Empirical findings and theoretical considerations. In A. Pollatsek & R. Treiman (Eds.) *The Oxford handbook of reading* (pp.88-98). New York, NY, US: Oxford University Press

Frost, R., Ahissar, M., Gotesman, R., Tayeb, S. (2003). Are phonological effects fragile? The effect of luminance and exposure duration on form priming and phonological priming. *Journal of Memory and Language*, 48 (2), 346-378.

Frost, R., Deutsch, A., & Forster, K. (2000). Decomposing morphologically complex words in a nonlinear morphology. *Journal of Experimental psychology: Learning, Memory, & cognition*, 26, 751-765.

Frost, R., Forster, K. I., & Deutsch, A. (1997). What can we learn from morphology of Hebrew? A masked priming investigation of morphological representation. *Journal of Experimental psychology: Learning, Memory, & cognition*, 23, 829-856.

Frost, R., Katz, L., & Bentin, S. (1987). Strategies for visual word recognition and orthographical depth: A multilingual comparison. *Journal of Experimental Psychology: Human, Perception and Performance*, 13, 104-115.

Frost, R., Kugler, T., Deutsch, A., & Forster, K. I. (2005). Orthographic Structure Versus Morphological Structure: Principles of Lexical Organization in Given Language. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 31, 1293-1326.

Frost, R., & Yaguev, O. (2001). Orthographic and phonological computation in visual word recognition: Evidence from backward masking in Hebrew. *Psychonomic Bulletin and Review* 8, 524-530.

Forster, K. I., & Chambers, S. M. (1973). Lexical access and naming time. *Journal of Verbal Learning and Verbal Behavior*, 12, 627-635.

Glushko, R. (1979). The organization and activation of orthographic knowledge in reading aloud. *Journal of Experimental Psychology: Human, Perception and Performance*, 5, 674-691.

Gronau, N. & Frost R. (1997). Prelexical phonologic computation in deep orthography: Evidence from backward masking in Hebrew. *Psychonomic Bulletin & Review*, 4, 107-112.

Harm, M., McCandliss, B. D., & Seidenberg, M. S. (2003). Modeling the successes and failure of interventions for disabled readers. *Scientific Studies of Reading*, 7, 155-182.

Harm, M. W., & Seidenberg, M. S. (2004). Computing the meaning of words in reading: Cooperative division of labor between visual and phonological processes. *Psychological Review*, 11, 662-720.

*Halderman, L. K., Ashby, J., Perfetti, C. A. (2012). An early and integral role in identifying words. In J. S. Adelman (Ed.) *Current issues in the psychology of language. Visual word recognition: Vol. 1. Models and Methods, Orthography and*

Phonology (pp. 207-228). Hove, England: Psychology Press.

Jared, D.(1997). Spelling-sound consistency affects the naming of high-frequency words.
Journal of Memory and Language, 36, 505-529.

Jared, D.(2002). Spelling-sound consistency and regularity effects in word naming.
Journal of Memory and Language, 46, 723-750.

Jared, D., Levy, B. A., & Rayner, K. (1999). The role of phonology in the activation of word meanings I reading: Evidence from proofreading and eye movements. *Journal of Experimental Psychology: General*, 128, 219-264.

Jared, D., & Seidenberg, M. S. (1991). Does word recognition proceed from spelling to sound to meaning? *Journal of Experimental Psychology: General*, 120, 358-394.

Johnson, R. L., & Perea, M., & Rayner, K. 2007. Transposed-Letter Effects in Reading; Evidence From Eye Movements and Parafoveal Preview. *Journal of Experimental Psychology; Human Perception and Performance*, 33, 209-229.

Jordan, T. R., McGowan, V. A., & Paterson, K. B. (2012). Reading with a filtered fovea: The influence of visual quality at the point of fixation during reading. *Psychonomic Bulletin & Review*, 19, 1078-1084.

Kessler, B. and Treiman R. (2001). Relationships between Sounds and Letters in English Monosyllables. *Journal of Memory and Language*, 44, 592-617.

*Kessler, B. and Treiman R.) 2015). Writing systems: Their properties and implications for reading. In A. Pollatsek & R. Treiman (Eds.), *The Oxford handbook of reading* (pp.10-25). New_York, NY, US: Oxford University Press

Kinoshita, S., & Norris, D. (2013). Letter order is not coded by open bigrams. *Journal of Memory and Language*, 69, 135-150.

Lelonkiewicz, J. R., Ktori, M., & Crepaldi, D. (2020). Morphemes as letter chunks: Discovering affixes through visual regularities. *Journal of Memory and Language*, 115, Article 104152. <https://doi.org/10.1016/j.jml.2020.104152>

Kuperman, V., Drieghe, D., Keuleers, E., & Brysbaert, M. (2013). How strongly do word reading times and lexical decision times correlate? Combining data from eye movement corpora and megastudies, *The Quarterly Journal of Experimental Psychology*, 66:3, 563-580,

Lachter, J. , Ruthruff, E., Mei-Ching, L., & McCann, R. (2008). Is attention needed for word identification? Evidence from the Stroop paradigm. *Psychonomic Bulletin & Review*, 15, 950-955.

Leck, K. J., Weekes, B. S., & Chen, M. J. (1995). Visual and phonological pathways to the lexicon: Evidence from Chinese readers. *Memory & Cognition*, 23, 468-476.

Lee, H.-W., Kambe, G., Pollatsek, A., & Rayner, K. (2005). The lack of

pseudohomophone priming effects with short durations in reading and naming. *Experimental Psychology*, 52, 281-288.

Lee, H. W., Rayner, K., Pollatsek, A. (2001). The relative contribution of consonants and vowels to word identification during reading. *Journal of memory and language*, 44 (2), 189-205.

Lee, Y., Binder, K. S., Pollatsek, A., & Rayner, K. (1999). Activation of phonological codes during eye fixations in reading. *Journal of Experimental Psychology: Human, Performance and Perception*, 25, 948-964.

Lee, Y., Rayner, K., & Pollatsek, A. (1999). The time course of phonological, semantic, and orthographic coding in reading: Evidence from the fast-priming technique. *Psychonomic Bulletin & Review*, 6, 624-634.

Lee, H.-W., Rayner, K., & Pollatsek, A. (2002). The processing of consonants and vowels in reading: Evidence from the fast priming paradigm. *Psychonomic Bulletin & Review*, 9(4), 766-772. <https://doi.org/10.3758/BF03196333>

Jarosław R. Lelonkiewicz, J. R., Ktori, M., and Crepaldi, D. (2020). Morphemes as letter chunks: Discovering affixes through visual regularities, 115. <https://doi.org/10.1016/j.jml.2020.104152>

Lesch, M. F., & Pollatsek, A. (1993). Automatic access of semantic information by phonological codes in visual word recognition. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 19, 285-294.

Li, X., Bicknell, K., Liu, P., Wei, W., & Rayner, K. (2014). Reading is fundamentally similar across writing systems: A systematic characterization of how words and characters influence eye-movements in Chinese reading. *Journal of Experimental Psychology: General*, 143, 895-913.

Li, C., Lin, C. Y., Wang, M., and Jiang, N. (2013). The activation of segmental and tonal information in visual word recognition. *Psychonomic Bulletin and Review*, 20, 773-779.

Li, X., Gu, J., Liu, P., & Rayner, K. (2012). The advantage of word-based processing in Chinese reading: Evidence from eye movements. *Journal of Experimental Psychology: Learning, Memory, and Cognition*.

Lukatela, G., & Turvey, M. T. (1994). Visual lexical access is initially phonological: 2. Evidence from phonological priming by homophones and pseudohomophones. *Journal of Experimental Psychology: General*, 123, 331-353.

*Lupker, S., J. (2005). Visual word recognition: theories and findings. In: M. J.

Snowling, and C. Hulmes (Eds.) *The science of reading: A handbook* (pp. 39-60). Oxford UK: Blackwell Publishing.

Marinelli, C., Romani, C., Burani, C., Zoccolotti, P. (2015). Spelling acquisition in English and Italian: A cross-linguistic study. *Frontiers in Psychology*, <http://journal.frontiersin.org/article/10.3389/fpsyg.2015.01843/full>

Marcolini, S., Traficante, D., Zoccolotti, P., and Burani, C. (2011). Word frequency modulates morpheme-based reading in poor and skilled Italian readers. *Applied Psycholinguistics*, 32, 513-532.

Marshall, J. C., & Newcombe, F. (1973). Patterns of paralexia: A Psycholinguistic approach. *Journal of Psycholinguistic Research*, 2, 175-199.

Massaro, D. W., & Cohen, M. M. (1991). Integration versus interactive activation: The joint influence of stimulus and context in perception. *Cognitive Psychology*, 23, 558-614.

Massol, S., Grainger, J., Dufau, S., & Holcomb, P. (2010). Masked priming from orthographic neighbors: An ERP investigation. *Journal of Experimental Psychology: Human, Perception and Performance*, 36, 162-174.

McClelland, J. L., & Rumelhart, D. E. (1981). An interactive activation model of context effects in letter perception: Part 1. An account of basic findings. *Psychological Review*, 88, 375-407.

Meade, G. (2020). The role of phonology during visual word learning in adults: An integrative review. *Psychonomic Bulletin and Review*, 2020, 15-23.

Millet, S., O'Donnell & Sereno (2009). Parafoveal Magnification: Visual acuity does not modulate the perceptual span. *Psychological Science*, 20, 721-728.

Miellat, S., & Sparrow, L. (2004). Phonological codes are assembled before word fixation: Evidence from boundary paradigm in sentence reading. *Brain and Language*, 90, 299-310.

Monaghan, P., Ellis, A. W. (2010). Modeling reading development: Cumulative, incremental learning in a computational model of word naming. *Journal of Memory and Language*, 63, 506-525.

Mousikou, P., Sadat, J., Lucas, R., and Rastle, K. (2017). Moving beyond the monosyllable in models of skilled reading: Mega-study of disyllabic nonword reading. *Journal of Memory and Language*, 93, 169-192.

Murray, W. S., & Forster, K. I. (2004). Serial mechanisms in lexical access: The rank hypothesis. *Psychological Review*, 111, 721-756.

New, B., and Nazzi, T. (2014). The time course of consonants and vowel processing during word recognition. *Language, Cognition and Neuroscience*, 29, 147-157.

Nishibayashi, L.-L., & Nazzi, T. (2016). Vowels, then consonants: Early bias switch in recognizing segmented word forms. *Cognition*, 155, 188-203.
<https://doi.org/10.1016/j.cognition.2016.07.003>

Pacton, S., Perruchert, P., Fayol, M. and Cleeremans, A. (2001). Implicit learning out of the Lab: The case of orthographic regularities. *Journal of Experimental Psychology: General*, 130 (3), 401-426.

Paap, K. R., Newsome, S. L., McDonald, J. E., & Achvaneveldt, R. W. (1982). An activation-verification model for letter and word recognition: The word superiority effect. *Psychological Review*, 89, 573-594.

Paap, K. R., & Noel, R. W. (1991). Dual route models of print to sound: Still a good horse race. *Psychological Research*, 53, 13-24.

Paterson, K. B., Alockoc, A., & liversedge, S., P. (2011). Morphological priming during reading: Evidence from eye movements. *Language and Cognitive Processes*, 26, 600-623.

Perea, M., Abu Mallouh, R., & Carreiras, M. (2010). The search of an input coding scheme: Transposed-letter priming in Arabic. *Psychonomic Bulletin and Review*, 17, 375-380.

Perea, M., & Lupker, S. J. (2004). Can CANISO activate CASINO? Transposed-letter similarity effects with nonadjacent letter positions. *Journal of Memory and Language*, 51, 231-246.

Perfetti, C. A., Bell, L. C. (1991). Phonemic activation during the first 40 ms of word recognition: Evidence from backward masking and priming. *Journal of Memory and Language*, 30, 473-485.

Perfetti, C. A., Bell, L. C., & Delaney, S. M. (1988). Automatic (prelexical) phonetic activation in silent word reading: Evidence from backward masking. *Journal of Memory and Language*, 27, 59-70.

Perfetti, C. A., & Tan, L. H. (1998). The time course of graphic, phonological, and

semantic activation in chinese character identification. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 24, 101-118.

Perfetti, C. A., & Zhang, S. (1991). Phonemic processes in reading Chinese words. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 1, 633-643.

Pexman, P. M., Lupker, S., J., & Reggin, L. D. (2002). Phonological effects in visual word recognition: Investigating the impact of feedback activation. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 28, 572-584.

*Plaut, D., C. (2005). Connections to approaches to modeling. In: M. J. Snowling, and C. Hulmes (Eds.) *The science of reading: A handbook* (pp. 24-38). Oxford UK: Blackwell Publishing.

Plaut, D. C., McClelland, J. L., Seidenberg, M. S., & Patterson, K. (1996). Understanding normal and impaired word reading: computational principles in quasi-regular domains. *Psychological Review*, 103, 56-112.

Pollatsek, A., Lesch, M., Morris, R., & Rayner, K. (1992). Phonological codes are used in integrating information across saccades in word identification and reading. *Journal of Experimental Psychology; Human, Perception and Performance*, 18, 148-162.

*Pollatsek, A., Rayner, K., & Lee, H. (2000). Phonological coding in word perception and reading. In: A. Kennedy, R. Radach, D. Heller, & Pynte J. (Eds.) *Reading as a Perceptual Process* Amsterdam: Elsevier. (pp. 399-426).

Pollatsek, A., Tan, L. H., & Rayner, K. (2000). The role of phonological codes in integrating information across saccadic eye-movements in Chinese character identification. *Journal of Experimental Psychology; Human, Perception and Performance*, 26, 607-633.

Qu, Q. and Dmian, M., F (2020). An electrophysiological analysis of the time course of phonological and orthographic encoding in written word production. *Language, Cognition and Neuroscience*, 35(3), 360-373.
<https://doi.org/10.1080/23273798.2019.1659988>

Qu, Q., Dmian, M., F., & Li, X. (2016). Phonology contributes to writing: evidence from masked priming task. *Language, Cognition and Neuroscience*, 31, 251-264.

Racine, I., Burki, & Spinelli (2014). The implication of spelling and frequency in the recognition of phonological variants: evidence from pre-readers and readers. *Language, Cognition, and Neuroscience*, 29, 893-898.

Radach, R., & Kennedy, A. (2012). Eye movements in reading: Some theoretical context. *The quarterly Journal of Experimental Psychology*, 66, 429-452.

Rapp, B., & lipka, K. (2011). The literate brain: the relationship between spelling and reading. *Journal of cognitive Neuroscience*, 23, 1180-1197.

Rapp, D. N., & Samuel, A. G. (2000). A reason to rhyme: Phonological and semantic influences on lexical access. . *Journal of Experimental Psychology: Learning, Memory and Cognition*, 28, 564-571.

Rastle, K., D., Marslen-Wilson, W. D., & Tuler, L. K. (2000). Morphological and semantic effects in visual word recognition: A time-course study. *Language and Cognitive Processes*, 15, 507-537.

*Rayner, K., Juhasz, B., J., and Pollatsek, A. (2005). Eye movements during reading. In: M. J. Snowling, and C. Hulmes (Eds.) *The science of reading: A handbook* (pp. 79-98). Oxford UK: Blackwell Publishing.

Rayner, K., Pollatsek, A., & Binder, K. (1998). Phonological codes and eye movements in reading. *Journal of Experimental Psychology: Learning, Memoey, & Cognition*, 24, 476-497.

Rayner, K., Schotter, E., R., Masson, M. E., Potter, M., & Treiman, R. (2016). So much to read, so little time: How do we read, and can spped reading help? *Psychological Science*, 17, 4-34.

Rayner, K., Sereno, S. C., Lesch, M. F., & Pollatsek, A. (1995). Phonological codes are automatically activated during reading. *Psychological Science*, 6, 26-32.

Reichle, E. D., Liversedge, S. P., Pollatsek, A., Rayner, K. (2009). Encoding multiple words simultaneously in reading is implausible. *Trends in Cognitive Sciences*, 13 (3), 115-119.

Reichle, E. D., Pollatsek, A., & Rayner, K. (2006). E-Z Reader: A cognitive-control, serial-attention model of eye-movement behavior during reading. *Cognitive Systems Research*, 7, 4-22.

Reichle, E., Pollatsek, A.k, Fisher, D. L. & Rayner, K. (1998). Toward a model of eye movement control in reading. *Psychological Review*, 105, 125-157.

Reichle, E. D., Rayner, K., & Pollatsek, A. (2003). The E_Z Reader model of eye movement control in reading: Comparison to other models. *Behavioral and Brain Sciences*, 26, 445-476.

Reicher, G. M. (1996). Perceptual recognition as a function of meaningfulness of stimulus

material. *Journal of Experimental Psychology*, 81, 275-280.

Reingold, E. M., Reichle, E. D., & Glaholt, M. G. (2012). Direct lexical control of eye movements in reading: Evidence from a survival analysis of fixation durations. *Cognitive Psychology*, 65, 177-206.

Rubenstein, H., Lewis, S. S., & Rubenstein, M. A. (1971). Evidence for phonemic recoding in visual word recognition. *Journal of Verbal Learning and Verbal Behavior*, 10, 645-657.

Rueckl, J. G. (2002). The dynamics of visual word recognition. *Ecological Psychology*, 14, 5-19.

Rueckl, J. G., Paz-Alonso, P. M., Molfese, P. J., Kuo, W.-J., Bick, A., Frost, S. J., . . . Frost, R. (2015). Universal brain signature of proficient reading: Evidence from four contrasting languages. *PNAS Proceedings of the National Academy of Sciences of the United States of America*, 112, 15510-15515.

Rueckl, J. G., & Rimzhim, A. (2011). On the interaction of letter transpositions and morphemic boundaries. *Language and Cognitive Processes*, 26, 482-508.

Rumelthart, D. E., & McClelland, J. L. (1982). An interactive activation model of context effects in letter perception: Part 2. *Psychological Review*, 89, 60-94.

Sánchez-Gutiérrez, C., & Rastle, K. (2013). Letter transpositions within and across morphemic boundaries: Is there a cross-language difference? *Psychonomic Bulletin & Review*, 20, 988-996.

Sasanuma, S., Sakuma, S., & Kitano, K. (1992). Reading Kanji without semantics: Evidence from a longitudinal study of dementia. *Cognitive Neuropsychologia*, 9, 465-468.

Schad, D. J., Risse, S., Slattery, T., & Rayner, K. (2014). Word frequency in fast priming: Evidence for immediate cognitive control of eye movements during reading. *Visual Cognition*, 22(3-4), 390-414.

Schoonabert, S. G., and Grainger, J. (2004). Letter position coding in printed word perception: effects of repeated and transposed letters. *Language and Cognitive Processes*, 19(3), 333-367.

Seidenberg, M. S., & McClelland, J. L. (1989). A distributed, developmental model of word recognition. *Psychological Review*, 523-568.

Seidenberg, M. S., Petersen, A., MacDonald, M., & Plaut, D. C. (1996). Pseudohomophone effects and models of word recognition. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 22, 48-62.

Seidenberg, M. S., Waters, G., Barnes, M. A. & Tanenhaus, M. K. (1984). When does irregular spelling or pronunciation influence word recognition. *Journal of Verbal Learning and Verbal Behavior*, 23, 383-404.

Sereno, S. C., & Rayner, K. (1992). Fast priming during eye fixation in reading. *Journal of Experimental Psychology: Human, Perception and Performance*, 18, 173-184.

Schoonbaert, S. & Grainger, J. (2004). Letter position coding in printed word perception: Effects of repeated and transposed letters. *Language and Cognitive Processes*. Vol 19(3), 333-367.

*Schooter, E., R., and Rayner, K. (2015). The work of the eyes during reading. In A. Pollatsek and R. Treiman (Eds.). *The Oxford Handbook of Reading* (pp. 44-59). Oxford, University Press.

Schmalz, E., Marinus, M., Coltheart, A., & Castles, A. (2015). Getting to the bottom of orthographic depth. *Psychonomic Bulletin & Review*, 22, 1614-1629.

Shen, X. R., Damian, M., F., & Stadthagen-Gonzalez, H. (2013). Abstract graphemic representations support preparation of handwritten responses. *Journal of Memory and Language*, 68, 69-84.

Smolka, E., Komlósi, S. & Rösler, F. (2009). When semantics means less than morphology: The processing of German prefixed verbs. *Language and Cognitive Processes*, 24, 337-375.

Smolka, E., Preller, K., H., & Eulitz, C. (2014). 'Verstehen' ('understand') primes 'stehen' ('stand'): Morphological structure overrides semantic compositionality in the lexical representation of German complex verbs. *Journal of Memory and Language*, 72, 16-36.

Snell, J., van Leipsig, S., Grainger, J., and Meeter, M. (2018). OB1-Reader: A model of word recognition and eye movements in text reading. *Psychological Review*, 125(6), 969-984.

Soares, A. P., Lages, A., Silva, A., Comesaña, M., Sousa, I., Pinheiro, A. P., & Perea, M. (2019). Psycholinguistic variables in visual word recognition and pronunciation of European Portuguese words: A mega-study approach. *Language, Cognition and Neuroscience*, 34(6), 689-719.

<https://doi.org/10.1080/23273798.2019.1578395>

Stinchcombe, E. J., Lupker, S. J., Davis, C. J. (2012). Transposed-letter priming effects with masked subset primes: A re-examination of the “relative position priming constraint. *Language and Cognitive Processes*, 27(4), 475-499.

Stone, G. O., & Van Orden, G. C. (1994). Building a resonance framework for word recognition using design and system principles. *Journal of Experimental Psychology: Human, Perception and Performance*, 36, 337-359.

Stone, G. O., Vanhoy, M., & Van Orden, G. (1997). Perception is a two way street: Feedforward and feedback phonology in visual word recognition. *Journal of Memory and Language*, 36, 337-359.

Sun, Y., & Peperkamp, S. (2016). The role of speech production in phonological decoding during visual word recognition: Evidence from phonotactic repair. *Language, Cognition and Neuroscience*, 31, 391-403.

Taft, M., & Nillsen, C. (2013). Morphological decomposition and the transposed-letter (TL) position effect. *Language and Cognitive Processes*, 28, 917-938.

Tan, L. H., Hoosain, & Peng, D. L. (1995). Role of early presemantic phonological code in Chinese character identification. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 21, 43-54.

Tan, L. H., & Perfetti, C. (1997). Visual Chinese character recognition: Does phonological information mediate access to meaning? *Journal of Memory and Language*, 37, 41-57.

Treiman, R., Seidenberg, M. S., & Kessler, B. (2015). Influences on spelling: evidence from homophones. *Language, Cognition and Neuroscience*, 30, 544-554.

Tsang, Y.-K., Wong, A., W.-K., Huang, J., and Chen, H.-C. (2014). Morpho-orthographic and morpho-semantic processing in word recognition and production: evidence from ambiguous morphemes. *Language, Cognition and Neuroscience*, 29, 543-560.

Van-Orden, G. C. (1987). A rose is a rose: Spelling, sound and reading. *Memory & Cognition*, 15, 181-198.

Van-Orden, G. C., & Goldinger, S. D. (1994). Interdependence of form and function in cognitive systems explains perception of printed words. *Journal of Experimental Psychology*:

Human, Perception and Performance, 20, 1269-1291.

Van-Orden, G. C., Johnson, J. C., & Hale, B. L. (1988). Word identification in reading proceeds from spelling to sound to meaning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 14, 371-386.

Van-Orden, G. C., Pennington, B. F., & Stone, G. O. (1990). Word identification in reading and the promise of subsymbolic psycholinguistics. *Psychological Review*, 97, 488-522.

Velan, H., Deutsch, A., & Frost, R. (2013). The flexibility of Letter-Position Flexibility: Evidence from eye movements in reading Hebrew. *Journal of Experimental Psychology: Human, Perception and Performance*, 39, 1143-1152.

Velan, H., & Frost, R. (2007). Cambridge University Vs. Hebrew University: The impact of letter transposition on reading English and Hebrew. *Psychonomic Bulletin and Review*, 14(5), 913-918.

Velan, H., & Frost, R. (2009). Letter-transposition effects are not universal: The impact of transposing letters in Hebrew. *Journal of Memory & Language*, 61(3), 285-302.

Velan, H., & Frost, R. (2011). Words with and without internal structure: what determines the nature of orthographic processing. *Cognition*, 118, 141-156.

Velan, H., Frost, R., Deutsch, A., & Plaut, D. (2005). The processing of root morphemes in Hebrew: Contrasting localist and distributed accounts. *Language and Cognitive Processes*, 20, 169-206.

White, S., J., Johnson, R. L., Liversedge, S. P., & Rayner, K. (2008). Eye movements when reading transposed text: The importance of word-beginning letters. *Journal of Experimental Psychology: Human, Perception and Performance*, 34, 1261-1276.

Whitney, C. (2001). How the brain encodes the order of letters in a printed word: The SERIOL model and selective literature review. *Psychonomic Bulletin & Review*, 8, 221-243.

Wydell, T., N., Butterworth, B., & Patterson, K.E (1995). The inconsistency of consistency effects in reading: The case of Japanese Kanji. *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 21, 1155-1168.

Wydell, T., N., Patterson, K. E., & Humphreys, G. W. (1993). Phonologically mediated

access to meaning for Kanji: Is a Rows still a Rose in Japanes Kanji? *Journal of Experimental Psychology: Learning, Memory, & Cognition*, 19, 491-514.

Xu, Y., Pollatsek, A., & Potter, M. C. (1999). The activation of phonology during silent Chinese word reading. *ournal of Experimental Psychology: Learning, Memory, & Cognition*, 25, 838-857.

https://www.researchgate.net/publication/23391060_Moving_beyond_Coltheart%27s_N_A_new_measure_of_orthographic_similarity

Yap, M., J., and Balota, D. A. (2009). Visual word recognition of multisyllabic words. *Journal of Memory and Language*, 60, 502-529.

*Yap, M., J., and Balota, D. A. (2015). Visual word recognition. In A. Pollatsek and R. Treiman (Eds.). *The Oxford Handbook of Reading* (pp. 26-43). Oxford, University Press.

Yates, M., Friend, J., & Ploetz, D. M. (2008). The effect of phonological neighborhood density on eye movements during reading. *Cognition*, 107 , 685-692.

Yarkoni, T., Balota, D., & Yap., M. (2008). Moving beyond Coltheart's N: A new measure of orthographic similarity. *Psychonomic Bulletin and Review*, 15, 971-979.

Zevin, J. D. and Seidenberg M. S. (2006) Simulating consistency effects and individual differences in nonword naming: A comparison of current models, *Journal of Memory and Language*, 5 (2), 145-160.

Zhang, H., Su, I-F., Chen, F., Ng, M. L., Wang, L., & Yan, N. (2020). The time course of orthographic and semantic activation in Chinese character recognition: Evidence from an ERP study. *Language, Cognition and Neuroscience*, 35(3), 292- 309.
<https://doi.org/10.1080/23273798.2019.1652762>

Zhou, X., Marslen-Wilson, W., D. (2009). Pseudohomophone effects in processing Chinese compound words. *Language and Cognitive Processes*, 24, 1009-1038.

Ziegler, J. C., Ferrand, L., Jacobs, A. M., Rey, A., & Grainger, J. (2000). Visual and phonological codes in letter and word recognition: Evidence from incremental priming. *Quarterly Journal of Experimental Psychology Section A: Human Experimental Psychology*, 53, 671-692.

Ziegler, J., & Goswami, U. C. (2005). Reading acquisition, developmental dyslexia and skilled reading across languages; a psycholinguistic grain size theory. *Psychological Bulletin*, 13, 3-29.

Ziegler, J., & Goswami, U. C. (2006). *Becoming literate in different languages; similar problems, different solutions*. *Developmental Science*, 9, 429-436.

Ziegler, J. C., & Jacobs, A. M. (1995). *Phonological information provides early sources of constraint in the processing of letter strings*. *Journal of Memory & Language*, 34, 567-593.

Ziegler, J. C., Tan, L. H., Perry, C., & Montant, M. (2000). *Phonology matters: The phonological frequency effect in written Chinese*. *Psychological Science*, 11, 234-238.

Ziegler, J. C., Van-Orden, G. C., & Jacobs, A. M. (1997). *Phonology can help or hurt the perception of print*. *Journal of Experimental Psychology: Human, Perception, & Performance*, 23, 845-860.

Additional Reading Material:

Students are encouraged to read the following book chapters which give overview on the main topics to be discussed in class:

Chapters 1,2,4 & 5 from

M. J. Snowling and C. Hulme, (Eds.) *The Science of Reading*, 2005, Blackwell

And Chapters 2, 3, 4 & 7 from

A. Pollatsek and R. Treiman (Eds.) *The Oxford Handbook of Reading*, 2015, Oxford University Press.

Course/Module evaluation:

End of year written/oral examination 90 %

Presentation 0 %

Participation in Tutorials 10 %

Project work 0 %

Assignments 0 %

Reports 0 %

Research project 0 %

Quizzes 0 %

Other 0 %

Additional information: