２０２０年度

大学院文学研究科博士課程後期３年の課程入学試験

（　春期・一般選抜　）問題

筆記試験　　言語学　　専攻分野

試験開始の合図があるまで、この問題冊子を開いてはいけない。

受験記号番号	

成 績	

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問題 I. 次の文章を読んで下の問いに答えなさい。

Based on behavioral evidence, two main theoretical models have been proposed to explain reading processes: the parallel distributed processing (PDP) model (e.g., Harm & Seidenberg, 1999), and the dual route cascaded (DRC) model (Coltheart, Rastle, Perry, Langdon & Ziegler, 2001). Although these models have put forward relevant hypotheses about how the orthographic, phonological, and semantic systems are divided and interrelated to each other, they did not provide specific predictions in relation to the neural computations carried out by the left perisylvian reading regions. However, in line with these models, neuroimaging research has been important in elucidating a division of labor between brain regions, organized into ventral and dorsal reading neural networks. Research evidence has shown that the ventral reading network, including left vOT 注1 and anterior IFG 注2 (*pars orbitalis* and *pars triangularis*), supports mapping of orthographic-lexical stimuli onto semantic representations (Sandak et al., 2004). On the other hand, the dorsal reading network, encompassing parietal cortex, STG 注3, and posterior IFG (*pars opercularis*), is thought to subserve the link between the orthographic form of words and semantics via phonological processing (e.g., Pugh et al., 2001).

Investigating visual word recognition involves establishing links between the processing of visual features, and semantic and phonological processing on these ventral and dorsal streams. Evidence of semantic and phonological reliance on ventral and dorsal pathway regions comes from studies revealing a specific modulation of these two pathways based on the type of stimuli and reading demands. Regarding the type of stimuli, ventral regions typically show greater engagement for high-frequency words than for pseudowords (e.g., Jobard et al., 2003), which suggests that the ventral pathway is recruited for well-learned words and is involved in more automatic word identification (e.g., Jamal et al., 2012). In contrast, dorsal regions typically show stronger activation during reading pseudowords and low-frequency words (e.g., Borowsky & Besner, 2006). The increased activation for pseudowords in regions along the dorsal stream may reflect demands on accessing phonology from sub-lexical orthographic codes (Price, 2012). Concerning reading demands, ventral regions appear to be more strongly activated by semantic than phonological reading tasks (Price & Mechelli, 2005). In contrast, the opposite pattern is found in dorsal regions, which are typically more activated for phonological than semantic reading-related decision (e.g., Paulesu et al., 1993).

Importantly, different languages present different writing systems, and therefore reading demands may differ depending on the characteristics of a given language. Neuroimaging studies have revealed a different modulation of these ventral and dorsal reading pathways depending on the orthography of the language (e.g., Oliver et al., 2007). Languages can be classified according to their grapheme-to-phoneme mapping or language orthography (Frost et al., 1987). Transparent orthographies, such as Spanish or Italian, have a shallow letter-to-sound correspondence. Opaque orthographies, such as English, have a more complex grapheme-to-phoneme mapping. Given that transparent orthographies have relatively simple, consistent, and complete connections between letters and phonemes, it is easier for readers to recover the phonology of the printed words pre-lexically, by assembling grapheme-to-phoneme correspondences. In other words, the phonology of transparent orthographies directly supports word-recognition processes. In contrast, in opaque orthographies, the reader must process printed words by referring to their morphology via the visual-orthographic structure of the printed words (e.g., Frost et al., 1987).

Neuroimaging evidence has shown that whereas transparent languages rely more on phonological areas within the dorsal pathway, opaque orthographies rely more on ventral pathway regions--consistent with graphemic analysis, to resolve possible ambiguities with pronunciation (e.g., Meschyan & Hernandez, 2006). However, the opposite pattern was also found in another study (Jamal et al., 2012), suggesting that if less phonological processing is needed, as would be expected in transparent languages, there may be less use of the phonological (dorsal) pathway and greater use of the semantic (ventral) pathway. In contrast, in opaque languages, greater activation of the dorsal route would be expected. Further studies on language orthography are needed to resolve these mixed findings.

(G. I. De Zubicaray & N. O. Schiller (Eds.) (2019). *The Oxford Handbook of Neurolinguistics*. Oxford University Press. より一部改変して掲載)

注 1. vOT: ventral occipitotemporal cortex (腹側後頭側頭皮質)
注 2. IFG: inferior frontal gyrus (下前頭回)
注 3. STG: superior temporal gyrus (上側頭回)

(1) 読み（reading）処理を可能する大脳の腹側（ventral）および背側（dorsal）視覚路のそれぞれの想定される役割について、本文の記述を踏まえて説明しなさい。

(2) 書字の 2 つのタイプ（transparent と opaque）に応じた読み処理過程の特徴について、本文の記述を踏まえて、自分の知っている 2 つ以上の言語の具体例を挙げながら説明しなさい。

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問題 II. 自分の関心ある言語事象について概説し、それを研究する意義、目的、方法、予測される結果を具体的に述べなさい。その研究の特徴を、一般言語学および関連領域の文脈の中に位置づけながら説明しなさい。

問題 I と II の回答は、次ページ以降にまとめて記すこと。

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